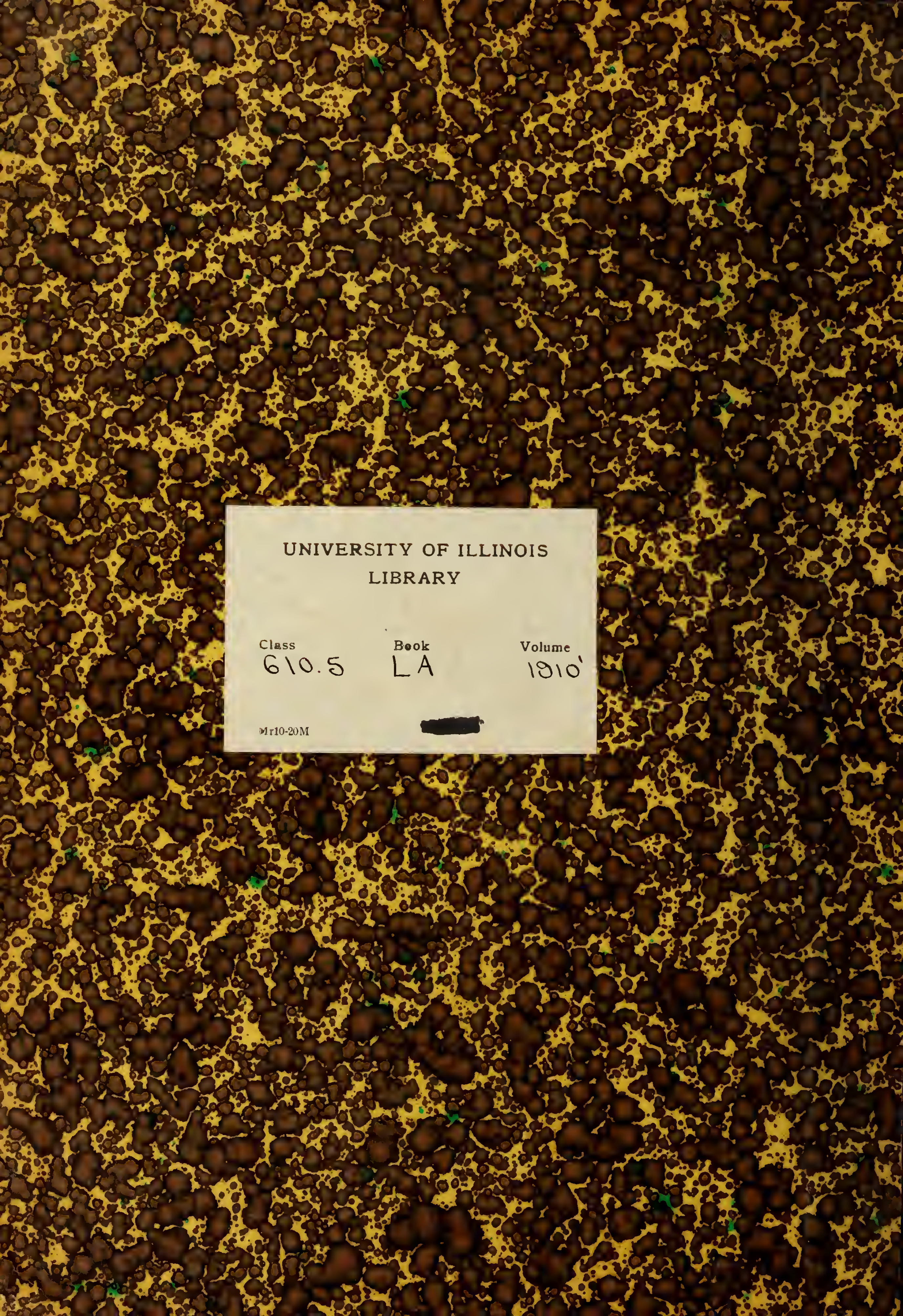


UNIVERSITY OF ILLINOIS
LIBRARY

Class 610.5
Book LA
Volume 1910

Mr10-20M

[redacted]

Digitized by the Internet Archive
in 2015

https://archive.org/details/lancet1910unse

THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology,
Chemistry, Pharmacology, Public Health, and News.

IN TWO VOLUMES ANNUALLY.

VOL. I. FOR 1910.

EIGHTY-EIGHTH YEAR.

SAMUEL SQUIRE SPRIGGE, M.A., M.D. CANTAB.
EDITOR.

LONDON:
PRINTED AND PUBLISHED BY THE REGISTERED PROPRIETORS, AT THE OFFICES OF "THE LANCET," No. 423, STRAND,
AND Nos. 1 & 2, BEDFORD STREET, STRAND.

MCMX.

The Arris and Gale Lectures

ON

SOME PROBLEMS RELATING TO THE EVOLUTION OF THE BRAIN.

Delivered at the Royal College of Surgeons of England on Dec. 13th, 15th, and 17th, 1909,

BY G. ELLIOT SMITH, M.A. CAMB., M.D., CH.M. SYDNEY, F.R.S.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF MANCHESTER.

LECTURE I.[1]

Delivered on Dec. 13th.

MR. PRESIDENT AND GENTLEMEN,—At the outset I must express my keen sense of appreciation of the honour the Council has conferred upon me in inviting me to deliver these lectures. Although I am fully aware of the fact that I am not eligible for election to any of the other lectureships in the gift of the College, it is an added gratification to me, as an anatomist, to have been invited to become the Arris and Gale lecturer, for this your oldest benefaction is a twofold endowment of anatomy, made famous by a long series of distinguished anatomists, beginning with Havers and including the incomparable John Hunter himself. Yet it is more than 30 years since a member of my craft delivered these lectures and I esteem it no small honour to follow two such "Masters of Anatomy," to use the old term for the Arris and Gale lecturers, as Sir George Humphry and Sir William Turner.

In choosing a subject for these lectures I was naturally guided by the remembrance of my association with the College ten years ago, when it was my privilege to assist in the compilation of the second edition of the descriptive catalogue of the unrivalled collection of brains in the museum galleries. On that occasion I seized the opportunity of studying the perhaps even more instructive material accumulated in the College storerooms. These specimens, though in many cases only the merest broken fragments, throw a flood of light on the inner history of some of the most important chapters in cerebral morphology.

When it became necessary to prune the long story of the evolution of the brain that I have to tell, so as to bring it into the compass of three hours' talk, I decided to deal with those parts of it which were made in this museum or by workers who drew their inspiration, directly or indirectly, from it. It may seem prodigal to devote one-third of the short time at my disposal to a historical survey. But if by so doing I can establish a solid foundation upon which to build the second and third lectures the time will be well spent. The literature of the problem with which I propose to deal would not be in the confused state we find it to-day if investigators had taken the trouble to find out what precisely had been definitely established and what was mere conjecture in the writings of others, and, in addition, had learnt the true meaning and origin of the terms they make use of.

In the whole domain of biology there is no fact, perhaps not even life itself, which excites our wonder and arouses our curiosity more than the knowledge that all the kaleidoscopic manifestations of mental activity are dependent upon, and determined by, physiological processes taking place in the nervous system. Even though as yet in our attack on this problem we cannot get to close quarters with the essential factors in these underlying processes, it is instructive to examine the present state of our knowledge concerning the evolution of that part of the organism the orderly working of which is the essential requisite for the occurrence of mental phenomena. I am not so foolish as to imagine that the evolution of the mind can be explained by anatomical studies; but I do maintain that without a correct comprehension of the homologies of the cerebrum in different vertebrates it will be impossible to make full use of the vast knowledge of comparative psychology which is now being built up or fully to understand and interpret the varying behaviour of animals and the differences in their reactions to their environment. For, in attempting to penetrate the veil which surrounds this the sublimest of biological problems, it is not sufficient to rely solely on physiological and psychological sources of information, such as, for example, introspection, the study of the physiology of the senses, the observation of the mental development of children, and the clinical study of human beings whose brains are damaged. There is in addition the perhaps wider and more fruitful field of investigation afforded by the experimental study of the physiology of the nervous system of vertebrates other than man, and especially the rich vein of ore which is now being seriously worked for the first time—namely, the observation of the behaviour of various animals under normal conditions, and the manner of their reaction to strange and abnormal factors in their environment.

This study of animal behaviour, which is being so vigorously pursued on the continent and especially in America at the present time, will provide, perhaps, the most likely channel along which the main stream of advance will be made towards the fuller comprehension of the mysteries of mental life. In this scheme of research anatomy will play the necessary, if perhaps humble, rôle of elucidating the differences in the structure of the nervous mechanisms of the animals examined by the comparative psychologist, and thus point the way towards an adequate explanation of their varying reactions and their different potentialities for mental processes. It will not only provide the physiologist and the psychologist with this essential information, but it will also suggest new subjects for investigation and new lines of attack.

There is no place more appropriate for emphasising the necessity of this *rapprochement* between anatomy and the allied sciences of physiology, pathology, comparative psychology, and zoology than the home of the Hunterian collection. John Hunter's pre-eminent claim on posterity lies mainly in the fact that he did not disdain to seek information in illumination of the dark places of animal structure from any and every source, whether it was the domain of comparative anatomy, physiological experiment, clinical observation, or the study of animal behaviour. Although Charles Darwin could hardly be regarded as the same type of man as Hunter, yet in respect of these characteristics they must be classed together. Yet there is a strange irony in the fact that the *immediate* influence of Darwin's work was distinctly antagonistic to this wider outlook in anatomy. His theory afforded such a powerful stimulus to morphological research and opened up such an extensive vista of structural homologies to be determined and explained that anatomists began to devote themselves exclusively to the study of the evolution of the mere form and structure of animals, to the neglect of their functional attributes and the immense rôle which function plays in moulding the form of the body. Darwin's own work did not err in this way, but there can be no denying the fact that the very wealth of detail in structure which took on a new significance in the light of his magic touch had a narrowing effect on the outlook of anatomists.

These circumstances bred quite a new type of anatomist—the man who began to talk of his subject as a branch of learning worthy of being pursued "for its own sake" and not merely as the necessary technical training for the surgeon and the physician. This tendency to concentrate his attention upon pure morphology and to spurn the utilitarian aspect of his subject led the anatomist to strange lengths, and he hedged himself around with a barrier shutting out communications with the physiologist and the clinician and others who might corrupt the good manners of his new path of life. He quite overlooked the fact that in thus cutting himself adrift from considerations of function and in losing intimate touch with medicine and surgery he was really emasculating his subject and losing the virility which is necessary for its proper pursuit, not "for its own sake," but for the wider advancement of science in general.

I am glad to say there are now definite signs that the era I have just referred to is passing, if it is not quite gone, and that anatomists are now beginning once more to look upon the dead material of their research as something that has lived, and to realise that if any real progress is to be made structure and function must be studied hand in hand. We are returning to the methods of John Hunter, under the

---

[1] For the blocks illustrating this account I am indebted to the editors of the Journal of Anatomy and Physiology.

No. 4505.

165793

inspiration and guidance of Charles Darwin and all that has flowed from the font of his genius. No fitter illustration of the blending of the influences of these two men could be desired than that provided in the galleries of this museum.

These considerations are not so irrelevant to the subject of these lectures as may appear at first sight; on the contrary, they are definitely pertinent to the discussion of the problems we are about to consider. No branch of biology has suffered more from the want of coöperation between anatomy, physiology, zoology, and comparative psychology than that which deals with the "organ of mind." A vast amount of labour has failed to yield its full reward to the investigator in this field of research because of the narrowness of his outlook. For want of a modicum of morphological knowledge the histologist has given utterly erroneous interpretations of the facts he has laboriously gathered together; the physiologist has often stultified the results of prolonged researches from the neglect to determine the zoological rank and relationships of the animals employed in his investigations or from a failure to inquire into the homologies of the part of the brain with which he is dealing; and the anatomist has been too prone to forget the study of minute structure and considerations of function.

If it were not liable to be considered invidious I might quote scores of specific illustrations of these paralysing factors in the current literature of the subject of these lectures. But I have said enough to illustrate my point, which is that no investigator, however restricted the field of his particular research may be, can afford to neglect the consideration of the wider bearings of his work.

In these lectures, which of necessity will deal only with the broad outlines of the structure of the cerebrum, I shall not pretend to look upon the morphological quest as the aim in itself. The real object of this inquiry is to determine the exact homologies of parts, so that the physiologist and the comparative psychologist may be guided in their investigations of the living brain, and may have the means of knowing the nature of the structures of which it is their business to investigate the functions.

If I leave many of the most significant problems unsolved I prefer to take this course rather than build up generalisations without proper foundation. There is perhaps no factor which is doing so much harm at the present moment in hindering advance in this subject as rash and misleading speculation.

In olden times the Greek philosophers came to realise that somewhere in the body there must be an organ where all the impressions collected by the different sense organs meet and react one upon the other, so as to produce that consciousness of the various properties of an object which everyone recognises. Many of these writers recognised that this organ must at the same time be the "storehouse" of impressions and the dominant organ of the body, with the power to quicken or restrain the activities of each and every part of the organism, in response, either directly or indirectly, to the impressions of the outside world pouring into this common sensorium. Aristotle gave clearest expression to this idea, but he favoured the heart as the seat of these psychical functions, which he at various times called the πρῶτον ἀισθητήριον, the ἡγεμονικὸν (*caput humanae substantiae*), the κύριον, the ἐπικρῖνον, and the ἀρχη, among many other names—a traditional view of cardiac function inherited from the most remote antiquity in Egypt.

The part of the body which in a far greater measure than any other shares these high attributes, the localisation of which the ancient philosophers for many ages sought in vain to establish, is that region of the cerebral cortex to which I have given the name "neopallium."[2]

In this lecture I shall attempt to establish upon a sure basis the means for instituting accurate comparisons between the mammalian and the non-mammalian cerebral cortex. With the knowledge thus gained I shall attempt, in the second lecture, to trace the evolution of the cerebral cortex up to the appearance of the neopallium, and in the last lecture to sketch certain aspects of the later development and specialisation of the neopallium within the mammalia.

The foundations of our knowledge of this part of the brain were really laid in this Museum more than 70 years ago, and out of the disputes which were waged here in subsequent years the first clear conception of the nature and origin of the neopallium has emerged.

On Oct. 31st, 1836, Professor Owen, who was then assistant conservator of the Museum and Hunterian professor of anatomy, presented to the Royal Society a memoir entitled "On the Structure of the Brain in Marsupial Animals," a work which will ever remain not only a landmark in the history of cerebral morphology, but also a model of the lucid and complete exposition of a difficult subject, so far as was possible at the time in which he wrote. Owen himself explains that he was led to make this important discovery of the structural peculiarities of the brain in marsupials from "a consideration of their habits and their inferiority of intelligence," but I believe that I have found a more obvious explanation of the initiation of this work. When I was helping in the preparation of the "Catalogue of the Collection of Brains" Mr. Davies Sherborn gave me some interesting manuscripts left by Owen, and among them was a memorandum dated Dec. 29th, 1835, addressed to the Council of this College, in which he informed the governing body that he had completed the [first edition of the] "Catalogue of the Brain Collection." Is it not much more likely that the memoir presented to the Royal Society nine months later was the outcome of the work incidental to the writing of the "Descriptive Catalogue" rather than of transcendental speculations suggested by watching kangaroos in the Zoological Gardens?

Upon the table before me are the specimens used by Owen in his research, the dissections made by him to prove and demonstrate the truth of his contention; here also is the account of them in the "Philosophical Transactions" for 1837; and some of these wall diagrams were prepared by him to explain his discoveries to the Royal Society and in the Hunterian lectures delivered here.

After giving a very succinct and clear account of the nature and essential features of the corpus callosum, fornix, and septum lucidum in the human brain, and the changes observed in the latter two bodies in the lowlier mammalia, which are associated with the enormous reduction of the size of the corpus callosum, Owen called attention for the first time to the peculiar features of the fornix and the apparent absence of a true septum lucidum and corpus callosum in the marsupialia "to the detection of which [he] was led by observing that the commissural system presented the essential difference between the brains of the oviparous and mammiferous vertebrata" (op. cit., p. 89).

Owen proceeds:—

> In order to obtain satisfactory proof of the difference in the structure of the brain in the marsupial and placental quadruped, I dissected and compared together, step by step, the brains of a Wombat and Beaver. These animals, as is well known, are of nearly similar bulk, and manifest so many mutual affinities in their structure, that they have been, and still are, by some naturalists, classed in the same order of Mammalia. The Wombat is, in fact, in all its exterior characters, save the marsupial pouch, a Rodent; and in its internal anatomy, especially its digestive organs, more nearly resembles the Beaver than do many of the true rodent animals.
>
> The brain of the Beaver was also preferred for this comparison of internal organisation, because on an outward inspection it would be pronounced to be the less highly organised of the two; the hemispheres in the Wombat presenting a few convolutions, whilst in the Beaver they are perfectly smooth (pp. 89 and 90).

On separating the beaver's hemispheres the corpus callosum is seen: it completely hides the optic thalami from view.

> On separating the hemispheres of the brain of the Wombat, not only the bigeminal bodies and pineal gland, but the optic thalami are immediately brought into view, and instead of a broad corpus callosum, we perceive, situated deeply at the bottom of the hemispheric fissure, a small commissural medullary band passing in an arched form over the anterior part of the thalami, and extending beneath the overlapping or mesial surfaces of the hemispheres, which thus appear, as in the Bird, to be wholly disunited.
>
> On gently raising the hemispheres from above the commissure, and pressing them outwards with the handle of a scalpel, the instrument passes into the fissure upon which the hippocampus is folded; and on continuing the pressure the hippocampus is torn through, and the lateral ventricle is exposed (op. cit., p. 90).

He then goes on to explain that all the fibres of this commissure in the wombat's brain pass into the hippocampi majores and that it forms a bond of union between these hippocampi; it is, in fact, "a hippocampal commissure or fornix" (p. 91). He clearly distinguishes between these commissural fibres of the fornix and the longitudinal fibres, which form "a bond of union between the hippocampus and anterior lobe of the same hemisphere in the longitudinal direction." [Reference to Figs. 3, 4 and 5, *infra*, will make this account more intelligible. Fig. 3 represents the inner aspect of the right cerebral hemisphere of a marsupial

---

[2] The Natural Subdivision of the Cerebral Hemisphere, Journal of Anatomy and Physiology, vol. xxxv., July, 1901.

(*Phascolarctos*)—*w* is the commissure which Owen showed to be hippocampal, being derived from the fornix, *f*, which in turn comes from the extensive arc of hippocampal formation, of which the fascia dentata (*d*) alone is visible on the surface. Fig. 5 represents the mesial aspect of the right half of the brain of a platypus, cut in mesial section—*comm. dorsal.* is the hippocampal commissure. Note the position of the anterior end of the fascia dentata (*fasc. dent.*). Fig. 4 is a transverse section through the cerebrum of a marsupial (*Perameles*)—*w* is the hippocampal commissure and *h* the hippocampus.]

> It also fulfils the other function of the fornix by sending down from the inferior surface two small nerve-like processes, which extend vertically, behind the anterior commissure, through the substance of the optic thalami, near their mesial surfaces, to the corpus albicans, at the base of the brain (pp. 90 and 91).

With the object of clearly exposing the contrast beween the wombat's and the beaver's brain, Owen made use of a perfectly legitimate illustration, which was afterwards seized upon by his critics and distorted into an erroneous interpretation, for which there is absolutely no ground in Owen's memoir. He pointed out that the beaver possessed a hippocampal commissure like the wombat, but that above it there was in addition (in the former but not in the latter) a septum lucidum and a corpus callosum. Hence, he argued, if you cut away the lateral wall of the cerebral hemisphere in a beaver's and in a wombat's brain and "thrust a style through the mesial wall of the hemisphere" immediately above the anterior end of the hippocampus, the style will be visible between the hemispheres (when divaricated from above) in the wombat but not in the beaver.

The 30 years that followed the publication of Owen's memorable work produced many distinguished supporters of his views, but also witnessed not a few attacks upon his conclusions. But his teaching was not seriously challenged until the year 1867, when one of his successors in the conservatorship of this museum was responsible for turning the whole tide of scientific opinion against him in regard to this matter.

It is difficult to realise how Professor Flower's repudiation of his predecessor's work came to obtain such wide recognition, unless we take into consideration the circumstances under which it was accomplished. For Professor Flower barely mentioned Owen's main argument and relied mainly on points of merely forensic value such as carry little weight in most scientific controversies.

For two years before the publication of Darwin's "Origin of Species" in 1859 there had been a growing feeling of antagonism between Owen and Huxley: the glowing embers of this dispute were fanned into a furious conflagration amidst the controversies waged around that book, because the importance and significance of the subjects which had aroused the original antagonism became magnified a thousandfold when they became the chief weapons of militant leaders of the opposing factions in the dispute on the Darwinian question. It is difficult for us of the younger generation to-day to realise the intensity of the feelings aroused by this discussion in the early "sixties," even though we have such admirable pictures of it as those contained in the "Life and Letters of Huxley." But if the scientific world at large was stirred to its depths in the manner so incisively and piquantly illustrated in that recently published document, "Father and Son," how must Huxley and Owen have been affected by it, when we recall that in entering upon the dispute they were reopening the old sores of their recent conflicts.

In the year 1857 there was published in the *Journal of the Linnean Society* a memoir by Owen entitled, "On the Characters, Principles of Division, and Primary Groups of the Class Mammalia," in which it was maintained (in direct opposition to the general consensus of comparative anatomists of that time) that "the posterior development [of the human cerebral hemisphere] is so marked that anatomists have assigned to that part of the character of a third lobe; it is peculiar to the genus homo, and equally peculiar is the posterior horn of the lateral ventricle and the 'hippocampus minor,' which characterise the hind lobe of each hemisphere." Owen repeated these extraordinary statements in the Reade lecture delivered in Cambridge in the year Darwin's famous book was published, but when he reiterated them at the memorable meeting of the British Association in Oxford in the following year they could no longer be allowed to remain unchallenged, because their importance became enormously enhanced when they were urged as the evidence in chief of the opponents of Darwin. Huxley, therefore, to quote his own words,[3] "immediately gave them a direct and unqualified contradiction, pledging [himself] to justify that unusual procedure elsewhere." He redeemed the pledge the following year (1861) in the January number of the *Natural History Review*. Before leaving this question of the hippocampus minor I must add that during the course of my work on the catalogue ten years ago I discovered that the structure in question could not be regarded even as a distinctive feature of the Primates, but was to be looked upon rather as a common mammalian character. The reason for this I shall explain in the third lecture.

"So far from retracting the grave errors into which he had fallen, Professor Owen persisted in and reiterated them in a lecture at the Royal Institution in 1861," in a correspondence in the *Athenæum* and at the meeting of the British Association in that year. Several continental anatomists repudiated Owen's claim to their support, and Professors Allen Thomson, Rolleston, Marshall, Huxley, Turner, and Flower devoted special memoirs to disprove Owen's contention; Owen once more revived the question at the British Association in 1862.

Widespread interest, extending far beyond scientific circles, was aroused by this controversy, and, to quote Huxley's biographer, "scientific technicalities became the catchwords of society, and the echoes of the great hippocampus question linger in the delightful pages of 'The Water-Babies'" and in *Punch* to remind us how great a stir this dispute aroused. I cannot refrain from quoting a paragraph from Charles Kingsley's book in reference to this matter:—

> He [the Professor] held very strange theories about a good many things. He had even got up once at the British Association and declared that apes had hippopotamus majors in their brains just as men have. Which was a shocking thing to say; for, if it were so, what would become of the faith, hope, and charity of immortal millions? You may think that there are other more important differences between you and an ape, such as being able to speak, and make machines, and know right from wrong, and say your prayers, and other little matters of that kind; but that is a child's fancy, my dear. Nothing is to be depended upon but the great hippopotamus test. If you have a hippopotamus major in your brain you are no ape, though you had four hands, no feet, and were more apeish than the apes of all aperies. ...... Always remember that the one true, certain, final, and all-important difference between you and an ape is that you have a hippopotamus major in your brain and it has none. ...... if a hippopotamus was discovered in an ape's brain, why, it would not be one, you know, but something else.

It was in such an atmosphere of battle, when the scientific world was divided into two hostile camps, a small coherent, but very active band, led by Huxley in opposition to the larger group relying mainly upon the weight of their authority in science, with Owen as their figurehead,—it was in such circumstances that Professor Flower turned his attention to Owen's earlier work. At such a time one would hardly expect, nor does he find, that the conditions were conducive to calm, properly balanced scientific discussion.

Huxley himself had taken the chief part in demolishing Owen's recent work, but he had associated with him in the attack a group of younger anatomists, amongst whom was Flower. Fresh from the successful attack on the question of the hippocampus minor, which Owen had magnified into a distinctive barrier separating man from the apes, Flower next attempted to wipe away what seemed to be another barrier raised by Owen between two groups of mammals. But in the heat of the quest Flower displayed more zeal than discretion. It is significant that Huxley himself refrained from participating in this later attack on Owen's work, for one could hardly have imagined him, even in the height of battle, using arguments so casuistical as those employed by Flower. At the same time it seems clear enough that if Huxley himself did not lead the fresh onslaught on Owen's position he gave the hint for it when he wrote:

> The subject requires careful re-investigation, but if the currently received statements are correct, the appearance of the corpus callosum in the placental mammals is the greatest and most sudden modification exhibited by the brain in the whole series of vertebrated animals—it is the greatest leap anywhere made by Nature in her brainwork.[4]

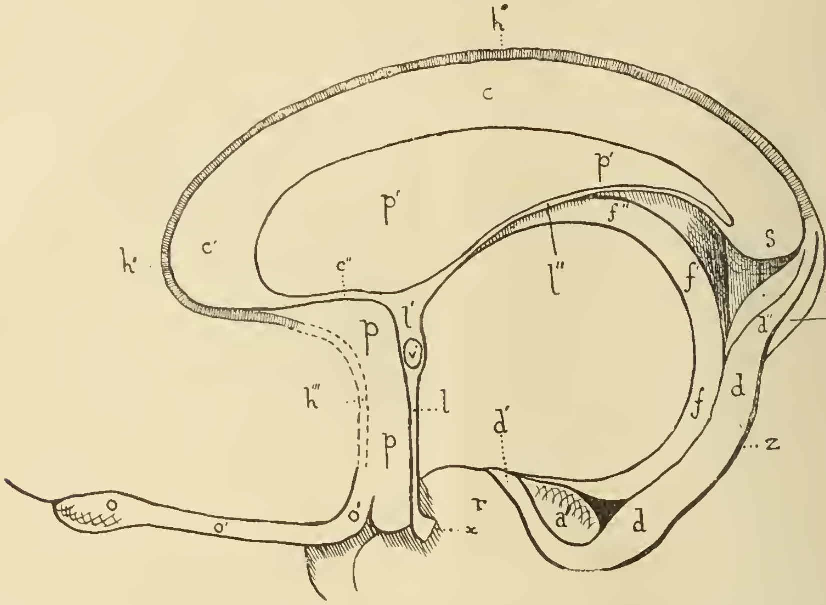
The note of incredulity suggested in the statement of the vastness of the chasm which had to be bridged if Owen's work of 1836 were really true was quite a sufficient hint to Flower to turn the light of the most searching criticism into another corner of Owen's domain. But in his zeal he went

---

[3] Man's Place in Nature, 1863, p. 114.

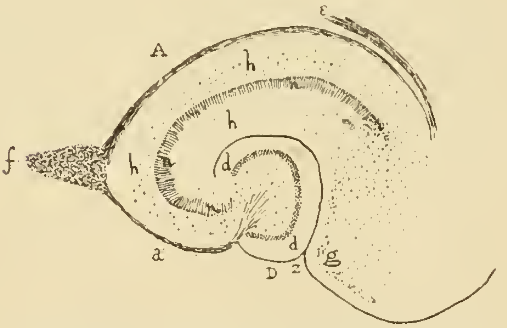
[4] Evidence as to Man's Place in Nature, 1863, p. 95.

FIG. 1.



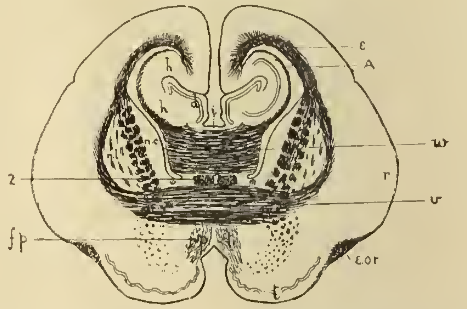
Scheme of cerebral commissures, and the margin of the cortex of the human brain. *d*, Fascia dentata. *h'*, *h''*, *h'''*, Hippocampus and vestiges of it. o, o', Olfactory bulb and peduncle. *p*, *p*, Paraterminal body. *p'*, *p'*, Its septal part (septum lucidum). *f*, *f'*, *f''*, Fimbria and fornix. *l*, *l'*, Lamina terminalis. *l''*, Psalterium.

FIG. 2.



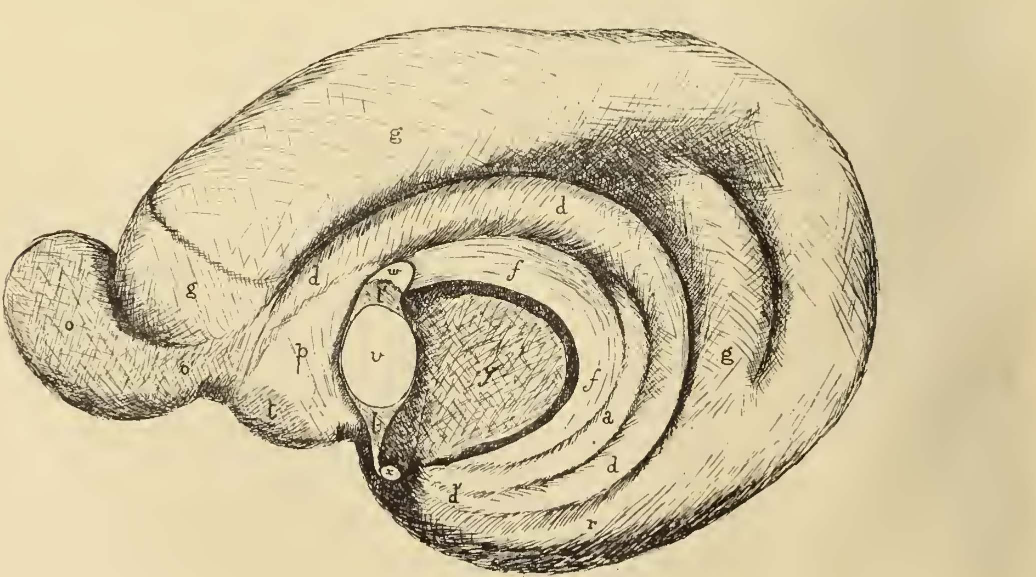
cheme of a section through the hippocampus of a rabbit, at right angles to its long axis. *h*, *h*, Hippocampus (*sensu stricto*). *d*, *d*, Fascia dentata. *f*, Fimbria.

FIG. 4.



Coronal section of cerebrum of a marsupial passing through the two cerebral commissures. *w*, Hippocampal commissure. *d*, Fascia dentata. *h*, *h*, Hippocampus.

FIG. 3.



Mesial surface of the cerebral hemisphere of a marsupial. *d*, *d*, *d*, Fascia dentata. *w*, Hippocampal commissure. *f*, *f*, Fimbria or fornix. *o*, *o'*, Olfactory bulb and peduncle. *p*, Paraterminal body.

too far and attempted to utterly demolish a position which was really unassailable.

Only by realising the circumstances of the times and the excitements of the fray can we form any just conception of how Professor Flower and those whom he converted to his opinion could have been satisfied with the arguments, plausible and forensically skilful though they be, which he set forth in 1865.[5]

In the statement of his case in 1836 Owen put the issue quite simply and fairly. He stated in effect that the upper commissure of the placental mammal's brain consists partly of fornix fibres (the psalterium) derived from the hippocampus and partly of fibres coming from other cortical areas, whereas the upper commissure in the marsupial is *wholly* derived from the hippocampus (see Fig. 4); it is a fornix-commissure or psalterium and not a corpus callosum, *sensu stricto*. To make the matter clear to his readers he described several devices in dissection for demonstrating the contrast between the two types of brain. Flower seized upon these illustrative comments and chance phrases, which were not part of Owen's argument, and while attempting to demolish them gave only the scantiest consideration to Owen's real argument—namely, that the dorsal commissure of the marsupial brain is not a corpus callosum but a hippocampal commissure (psalterium), *because it derives its fibres entirely from the hippocampi.*

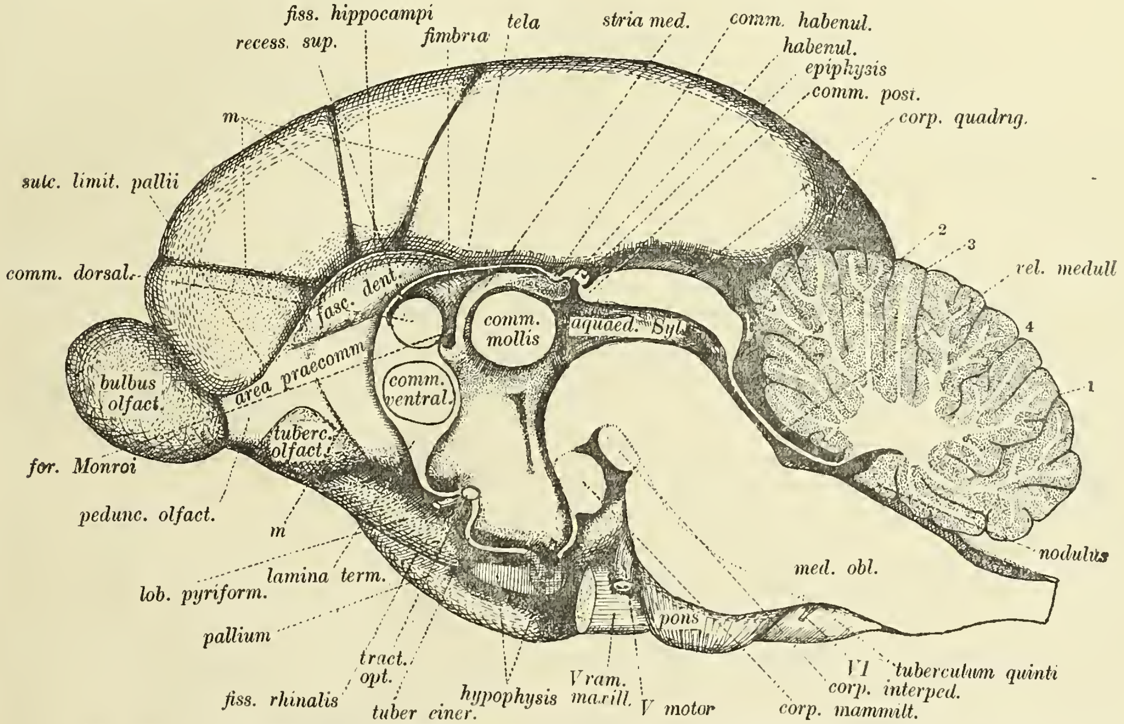
In the very few remarks in which Flower refers to this, the main issue, he begs the whole question when he puts the amazing query, "Granted that only the psalterial fibres are represented in the upper commissure of the marsupial brain, why should the name of 'corpus callosum' he refused to it?"[6] For if the dorsal commissure be psalterial it cannot justly be regarded as the homologue of a bundle of fibres which is mainly non-psalterial. The use of such an argument illustrates Flower's intense desire to prove his case and justify the anticipations of Huxley. However, he would not admit that the upper commissure of the marsupial was wholly psalterial, but maintained that there were fibres, not derived from the hippocampus, coming from the anterior part of the mesial hemisphere wall of the marsupial brain. A similar contention has been urged in recent times by C. L. Herrick, Ziehen, and Zuckerkandl among others, without, as it seems to me, any proper justification for their beliefs. But Flower's argument does not fall into exactly the same category as Ziehen's and Zuckerkandl's, for it is not altogether clear that he was prepared to admit the hippocampal nature of the anterior part of the hippocampus in the marsupial. Owen frankly and clearly recognised the identity of the whole hippocampus. In Flower's dissections, some of which, collected in the storeroom, are now on the table before me, the characteristic features of the hippocampal structure of the anterior part of the arc in question are most distinctly, even obtrusively, displayed. Yet in none of Flower's figures is any trace of this distinctive structure shown, nor in his text is there anything to make it clear that the inrolled cortex above the dorsal commissure (compare Fig. 4, *h h*) is really hippocampus.

Owen showed great perspicuity when in 1836 he explained that the peculiarity in the commissures of the marsupial helped to bridge the gap between the brain structure of what he called the oviparous vertebrata and the mammalia. If Huxley and Flower had only realised this fact they would have looked upon the marsupials as supplying a valuable link in the chain of events the former was so actively engaged in elucidating.

Thus the dorsal commissure of the brain in the marsupialia and monotremata came to be branded "corpus callosum," and no one reading the plausible account of it in Flower's memoir would realize that the area from which its fibres sprang was hippocampus. Once anatomists became convinced that the corpus callosum was present in the lowliest mammals it was only natural that the search for it in the non-mammalian vertebrata should begin. Huxley again seems to have given the word for the search, when, half jestingly, he told Professor H. F. Osborn, about to begin the study of the amphibian brain, to look out for the corpus callosum.[7]

During the 20 years that intervened between the work of Flower and Osborn many memoirs had appeared suggesting

FIG. 5.



The surface of the brain of ornithorhynchus, exposed by a mesial sagittal section. Magnified almost 4 diameters. *comm. dors.*, Hippocampal commissure. *fasc. dent.*, Fascia dentata. *comm. vent.*, Anterior commissure.

---

[5] On the Commissures of the Cerebral Hemispheres of the Marsupialia and Monotremata as compared with those of the Placental Mammals, by William Henry Flower, conservator of the Museum of the Royal College of Surgeons of England. Philosophical Transactions, 1865, pp. 633–651 (received by the Royal Society on Jan. 24th, 1865).

[6] Op. cit., p. 648.

[7] The Origin of the Corpus Callosum, Morphologisches Jahrbuch, 1887.

or refuting the idea of the existence of the corpus callosum in the reptiles, amphibians, and other lowly vertebrates, but the literature was in a state of great confusion. Osborn's work has the great merit that it brought order out of this confusion and demonstrated with the utmost lucidity the existence in birds, reptiles, and amphibians of commissural bands, arranged like those of the monotremes and marsupials. He was led astray, however, by Flower's teaching, from the influence of which even his own investigation of the structure of the marsupial brain did not exempt him, and thus he came to claim the callosal nature of the dorsal commissure in the whole vertebrata. Incidentally, but from my present point of view the most disastrous result of this generalisation, his work prevented most anatomists from identifying the area of origin of this commissure in the lowlier vertebrata as the homologue of the hippocampus.

Although on other grounds several anatomists began to suspect the hippocampal nature of the upper part of the mesial wall of the reptilian hemisphere, it was not until the teaching of Flower was overthrown in 1892 that it became possible to provide a sure basis for the establishment of this homology and the complete reversal of Osborn's generalisation. For seeing that Professor Osborn had conclusively shown the dorsal commissure in birds, reptiles, and amphibians to be homologous with that of monotremes and marsupials, once the latter was shown to be purely hippocampal and not a true corpus callosum, Osborn's demonstration of the homology of the commissure in the lowlier vertebrata still remained valid, but came to bear the new interpretation that it also was hippocampal and the area from which it sprang was presumably hippocampus. This is the fundamental factor in comparisons of the cerebral cortex in mammalian and non-mammalian vertebrata.

In 1892 Professor Johnston Symington, working with modern histological methods, demonstrated that Owen was right after all when he called the dorsal commissure of the marsupial "hippocampal" or "psalterial." This was the real starting-point for the recent great development of our knowledge of the morphology of the cerebral cortex. [It is surprising to relate that in a work[8] just published, of which the anatomist who gave this new direction to research is one of the editors, there is no reference either to his own work or to the far-reaching results in the domain of cerebral morphology which have followed in its train.]

In 1894 I began the study of the anatomy of the brain in the marsupialia and monotremata,[9] and it is the results of that investigation and what it led to, especially in the work done in this Museum, of which I propose to speak in these lectures.

If one examines the mesial aspect of the human cerebral hemisphere he will find, close alongside the place where the choroid plexus of the descending horn of the lateral ventricle is invaginated in the latter cavity, a curiously notched band of grey matter, the fascia dentata or gyrus dentatus (Fig. 1, *d*), which stretches from the uncus (*a* and *r*) to the posterior end of the corpus callosum (*s*). If the lateral ventricle is opened the large swelling known as the hippocampus will be found to be co-extensive with the fascia dentata on the surface, and from sections cut through the whole hippocampal formation we realise (Fig. 2) that the fascia dentata (*d*) is merely a peculiarly specialised cortical fringe placed on the margin of the inrolled hippocampus (*h*).

If we examine a large series of mammalian brains, such as the magnificent collection in the galleries of this Museum, it will be observed that the corpus callosum is subject to very great variations in length in different creatures, but that, however far forward the posterior end of the corpus callosum may be withdrawn as it were, when contrasted with that of the human brain, the upper end of the hippocampal formation will always be found in contact with the splenium of the corpus callosum.

But when we turn to examine the brain in the marsupialia (Fig. 3) and monotremata, in which the callosal fibres have disappeared from the dorsal commissure (*w*), we find that the hippocampus (*d* refers to the fascia dentata) does not cease at the latter, but passes forward above it (in continuation of the arc formed by the posterior part of the hippocampus) and bends down in front towards the insertion of the olfactory peduncle (*o*) in front of the lamina terminalis (*l l'*). This arrangement explains why it is that a fully developed hippocampal formation (Fig. 4, *h*) is exposed *above* the dorsal commissure (*w*) in any marsupial or monotreme brain when a vertical transverse section is cut, say, through the region of the anterior commissure (*v*).

The close (topographical) association of the caudal extremity of the corpus callosum and the upper end of the hippocampal formation, however much the former may vary in position, suggests that the development of the great commissure has exercised a disturbing, if not destructive, effect upon the anterior part of the great hippocampal arc, which lies upon, or in front of, the corpus callosum. The results of the study of the development of this part of the brain in man and other mammals, and the comparison of the histology of the structures bordering on the corpus callosum, especially in such lowly mammals as the insectivora, chiroptera, and edentata, go far to establish the truth of this suggestion. In every mammal possessing a corpus callosum we find upon the upper surface of the latter commissure some remnant of this upper part of the hippocampus (Fig. 1, *h''*). This vestige of the hippocampal arc does not stop even at the anterior end of the corpus callosum, but passing around the genu extends downward (Fig. 1, *h'''*) towards the place where the stalk of the olfactory bulb (*o'*) is inserted into the cerebral hemisphere. These supra- and pre-callosal remnants of the hippocampus usually take the form of a small flattened plate of cells and they represent a greatly reduced hippocampal formation from which the fascia dentata has disappeared.

Thus we find in all mammals that the mesial edge of the cerebral cortex in the whole of its extent, from the neighbourhood of the olfactory peduncle in front to that of the tip of the descending limb of the lateral ventricle (behind and) below, is fringed by some representative of the hippocampal formation.

Thus it is certain that in the ancestors of the mammalia there must be something of the nature of a hippocampus fringing the whole of the mesial edge of the cerebral cortex. Investigations such as those initiated by Osborn have demonstrated the homology of the upper commissure in birds, reptiles, amphibians, and certain fishes with the marsupial commissure which we now know to be hippocampal.

By employing these two convergent lines of inquiry we have obtained positive and irrefutable proof of the identity of the hippocampal formation in the whole vertebrata.

By the application of this knowledge I hope in my next lecture to be able to sketch the broad outlines of the evolution of the cerebral cortex, so as to explain the origin of that part of it which more than any other deserves the title "organ of the mind"—the neopallium.

(Fig. 5, representing the mesial aspect of the right half of the brain of platypus, will enable the reader to locate the structures in the monotreme brain referred to in this lecture. The hippocampal commissure (*comm. dorsal.*), the anterior commissure (*comm. ventral.*), and the cephalic end of the fascia dentata (*fasc. dent.*) will afford the chief guiding points.)

THE INTERNATIONAL HOME EDUCATION CONGRESS.—In connexion with the Home Education League, which was founded in 1899 with the object of securing closer association between parents and teachers in the study and practice of educational methods, the Third International Congress and Exhibition will be held in Brussels from August 21st to 25th, 1910. The Marquess of Londonderry has accepted the Presidency of the central committee for the United Kingdom. Among the subjects which will be discussed at this Congress are the Study of Childhood, the Education of Children in School, in the Home both Before and After School, and the Question of the Treatment of Abnormal Children. The Congress ticket, price 8*s.* 6*d.*, gives the holder free entrance to the exhibition and entitles him to a copy of the official reports. Further particulars can be obtained from the honorary secretary, Miss Kyle, Highbury Hill High School, Highbury, London, N.

---

[8] Quain's Elements of Anatomy, eleventh edition, vol. iii., part 1, 1908.

[9] A Preliminary Communication upon the Cerebral Commissures of the Mammalia, with Special Reference to the Monotremata and Marsupialia, Proceedings of the Linnean Society of New South Wales, vol. ix. (Series II.), pp. 635-657, October, 1894.

A Clinical Lecture

ON

SOME POINTS IN THE CLINICAL HISTORY OF PNEUMONIA.

Delivered at the Medical Graduates' College and Polyclinic on Dec. 14th, 1909,

BY PERCY KIDD, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO THE LONDON HOSPITAL; CONSULTING PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, AND TO KING EDWARD VII. SANATORIUM.

GENTLEMEN,—I confess to feeling guilty of rashness in venturing to give a clinical lecture about pneumonia, the subject is so large and yet so well-worn. But I think I can plead extenuating circumstances. Pneumonia is one of the commonest of all the acute infections and must always possess an absorbing interest for all practitioners of medicine. In many respects it is one of the most remarkable of all diseases, ushered in so often by striking symptoms, running a short course, and ending often, for good or ill, with dramatic suddenness. What I have to say of pneumonia refers only to the lobar variety depending on the invasion of the pneumococcus.

It is well recognised that the incidence of pneumonia is markedly affected by the prevalence of influenza at certain seasons; in other words, influenza prepares the ground for infection by the pneumococcus and predisposes to pneumonia. I feel convinced, however, that there is a tendency, more especially in private practice, to diagnose a combination of the two diseases when pneumonia constitutes the one and only infection. I find since writing this that Coupland and Sturges in their excellent treatise on pneumonia make a similar statement. The mistake generally arises in this way. A patient is taken ill with general febrile symptoms, headache, aching in the limbs, and malaise, associated with a high temperature, but no symptoms or signs of pulmonary disease. The case is not unnaturally regarded as one of influenza, more especially if there should happen to be an epidemic at the time. When physical signs of pneumonia appear, perhaps as late as the fourth or fifth day, pneumonia is said to have supervened on influenza. This may be a correct interpretation in some cases, but I believe that such a sequence of events is not so common as some would have us believe. Pneumonia complicating influenza more often develops after there has been some remission of symptoms, and the complication is often attributed to the patient getting up or going about his work too soon. The danger of pneumonia when it follows influenza is a grave one, and unless the habit of attributing the early symptoms to influenza be guarded against the difficulties of prognosis must be largely increased. I am satisfied that a large proportion of the cases described as influenzal pneumonia are nothing more than cases of pneumonia with an insidious onset and late development of physical signs.

It may not be out of place at this point to emphasise a fact which is mentioned in all text-books—that a fair proportion of cases of pneumonia begin insidiously. I do not now allude to the case of old people, renal patients, or the insane, in whom an insidious onset is almost the rule. I am thinking of young, healthy patients, where a vague history of illness extending over some days may rouse suspicions of typhoid fever or acute generalised tuberculosis. I have met with several instances of this sort where pneumonia had never been suspected, and was only detected in the course of repeated routine examination.

In its most characteristic form pneumonia in adults develops with a rigor which varies somewhat in intensity. The occurrence of successive severe rigors is said by Dr. P. H. Pye-Smith and Dr. A. P. Beddard in Allbutt and Rolleston's "System of Medicine" to indicate a very severe infection. This, no doubt, is true generally, but it is not true universally. Thus, a young man, aged 27 years, recently under my care in the London Hospital, who gave a clear history of having had four successive rigors, developed signs of pneumonia of the right lower lobe, and the disease terminated by crisis on the second day. The following is a brief account of the case:—

CASE 1.—In the afternoon of June 21st the patient felt poorly and had a headache and loss of appetite. The same evening he woke up with sharp pains in the right side and had four successive shivering fits. Next morning, June 22nd, he went to work in spite of pain in the side with some cough and expectoration. But he had to give up work and came to the hospital at noon the same day with a temperature of 103° F. Signs of pneumonia of the right lower lobe were found. By midnight on the 22nd the temperature had fallen to 101°; at 4 A.M. on the 23rd it was 98·6°. After this there was no further rise of temperature, and rapid recovery ensued.

Here the crisis appeared about 36 hours after the first sensation of illness.

I have met with several instances of a favourable course when the patients had had several rigors. I am inclined to think that repeated rigors are less uncommon than is usually thought. Rigors occurring in the course of the disease are ominous, and generally announce some complication. In young children shivering is very uncommon. Vomiting has been said to represent the initial rigor of adults. Vomiting at the outset may be very severe, as in the case of a little girl, aged 7 years, that I saw recently. Here the illness began, as her mother said, with "vomiting all day and all night." In spite of this stormy prelude the disease ran a short and benign course.

Abdominal pain is a well-known mode of invasion in young children, associated sometimes with tenderness and rigidity in the right iliac fossa sufficient to excite a suspicion of appendicitis. I have come across several cases of this kind. Recently I had under my care at the London Hospital a lad of 16, who was admitted into a surgical ward with the diagnosis of appendicitis. The symptoms were pain and tenderness in the right iliac fossa. The absence of rigidity of the abdominal wall was thought to exclude appendicitis, and the patient was transferred to my care. We found signs of pneumonia affecting the posterior surface of the right upper lobe and the apex of the lower lobe. The case terminated favourably by crisis on the twelfth day.

Pneumonia may be introduced by *symptoms of meningitis* ("meningism"), headache, retraction of the head, photophobia, and stupor, which may be very misleading. This method of invasion is not very rare in children, and I have seen several examples. But in adults this is rarely met with. Last year a case was admitted into the London Hospital presenting such unusual features that I think it worthy of a short description.

CASE 2.—A man, aged 29 years, a baker, was admitted on Feb. 1st complaining of severe pain in the head, mostly on the right side over the ear and forehead. The headache began on Jan. 29th at 3 A.M., while he was working in the bakery. He had to stop work and lie down, and he had several rigors. At 6 A.M. he was carried home, as his legs gave way under him. He went to bed and sent for a doctor who gave him some medicine. But the patient could get no relief from the headache, which slowly got worse. On Feb. 1st the doctor sent him to the hospital. He described the headache as a series of acute shooting pains following in rapid succession. When the pain went a soreness was left which spread into the right shoulder.

On admission the patient was evidently suffering very great pain. The pulse was 104, respiration 28, and temperature 101° F. The heart and lungs were normal, eyes and ears normal. The pain became almost continuous and was only relieved by injections of morphia. On Feb. 3rd (the sixth day of his illness) the temperature fell from 103° to 98°, but there was no improvement in his general condition. The pain in the head now went down the right arm to the elbow, right side of the chest, and right leg to the knee. On this day for the first time slight dulness was detected at the base of the right lung. Pneumonia was now diagnosed. The symptoms at first suggested meningitis, but the appearance of signs of pneumonia complicated matters. My colleague, Dr. Henry Head, saw the patient with me and thought the pain might be related to pneumonia, though he had never seen pain of such severity and such wide extension in pneumonia. On Feb. 4th the pain remained as severe as before. The heart's apex beat was in the mid-axillary line. The dulness at the right base was more marked, reaching the spine of the scapula. As the signs indicated fluid the right pleura was aspirated, but only 6 ounces of blood-stained fluid were obtained. The next day the pain became less after several injections of morphia, but the patient was very exhausted and dyspnœic and died early on Feb. 6th, the ninth day of the disease.

The necropsy showed the following appearances: Pneumonia of the right lower lobe, red hepatisation with hæmorrhagic areas; purulent pleurisy on both sides; about 10 ounces of pus in each pleural sac; mediastinal tissues œdematous; localised fibrinous peritonitis; membranous laryngitis affecting sinus pyriformis on each side; parenchymatous degeneration of the kidneys and liver; brain membrane and middle ears normal.

One of the most uncommon initial symptoms is *hæmoptysis*, meaning by this a free hæmorrhage, not merely blood-stained expectoration. My attention was first directed to this mode of onset by a paper published in THE LANCET in 1886 by Dr. Donald Hood, who described several instances. I have seen only two or three examples myself, in two of which I have notes.

CASE 3. *Onset with hæmoptysis.*—The patient, a clerk, aged 22 years, was admitted on May 4th, 1909. The previous history showed diphtheria only. He was quite well till 5 P.M. on the 3rd, when he suddenly experienced a severe pain in the back, which was increased by inspiration. His hands felt numb and cold, he "could hardly move them," and he put them into hot water to get them warm. Between 9 and 10 P.M. he began to cough up blood mixed with frothy saliva. On admission at 2 A.M. on May 4th he was pale and breathing rapidly, heart's action very excited, and he was coughing up blood mixed with frothy sputum. The respirations were 40, temperature 101·6° F., and pulse 120. A systolic murmur was heard at the apex and base of the heart on admission, but this had disappeared later in the day. Hæmoptysis ceased in about 12 hours, the total quantity of blood expectorated while in the hospital being about 8–10 ounces. Physical signs of consolidation of the left lower lobe were detected on May 6th, and on this day herpes-labialis appeared. A systolic murmur was again heard at the apex, but was only slightly conveyed upwards and outwards. Defervescence took place on the fourth day of the illness, but dulness at the left base became more marked and on paracentesis a small quantity of blood-stained fluid was removed. The patient made a good recovery and was discharged on June 8th, slight dulness remaining at the left base.

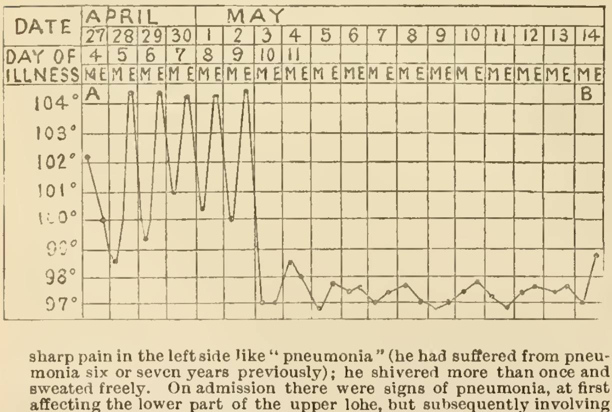
CASE 4.—A girl, aged 13 years, was admitted into the hospital on account of hæmoptysis and pain in the left side. On admission the child was spitting up abundant bright fluid blood, and signs of pneumonia of the left lower lobe were present. A systolic murmur was heard at the base of the heart at first, but subsequently disappeared. A well-marked crisis occurred on the fourth day, and rapid recovery followed.

Hæmoptysis is probably to be explained, as Dr. Hood suggests, by the intense preliminary engorgement of the early period. The possibility of an old tuberculous lesion must always be carefully considered. But in both the two foregoing cases there was no evidence of any apical disease and complete recovery took place. In the first case the variable systolic murmur raises the question of a mitral lesion, but the existence of valvular disease was very doubtful. Dr. Hood is inclined to connect hæmoptysis in such cases with pneumonia of the upper lobe. In both my cases the lower lobe alone was affected.

Fever.—The most common form of fever is the continuous with slight morning remissions of 1° to 1·5°. But there may be much greater remissions, and the pyrexia may even be intermittent and very irregular. This point is insisted upon by Coupland and Sturges, who cite several good examples. I doubt whether this variety of fever is sufficiently recognised, for I have on more than one occasion found that an intermittent temperature chart has caused much alarm and anxious forebodings as to masked complications when the disease was running a normal course in other respects. Dr. Hood in his lectures on Some of the Clinical Aspects of Pneumonia expresses the opinion that irregularities of temperature are the result of a combined infection with influenza. I cannot believe that this is generally true, though some cases may be explained on this hypothesis. A striking case of pneumonia with intermittent temperature quoted by Coupland and Sturges occurred in 1885 before the first epidemic of influenza of recent times appeared. The following is a good specimen from my own experience:—

CASE 5.—A youth, aged 20 years, a painter, was admitted into the London Hospital on April 27th, 1900. Patient was taken ill three days ago, with sharp pain in the left side like "pneumonia" (he had suffered from pneumonia six or seven years previously); he shivered more than once and sweated freely. On admission there were signs of pneumonia, at first affecting the lower part of the upper lobe, but subsequently involving the lower lobe also. The temperature was of intermittent type, varying from 104° to 98° F. (See Chart 1). A well-marked crisis occurred on the tenth day, the temperature falling from 104·4° to 97°, and the patient rapidly recovered.

CHART 1 (CASE 5).



Physical signs.—With regard to the physical signs of pneumonia, there is little that need be said. Among the earliest signs I should place deficient entry of air into some section of the lung. The crepitant râle of Laennec or fine crepitation is not a very common or a very important sign. The early recognition of tubular breathing is greatly facilitated by direct auscultation without a stethoscope, especially where the posterior surface of the chest is concerned. I have often been able to recognise tubular breathing with the ear applied directly to the chest when I could not hear it with any form of stethoscope. I am afraid the binaural stethoscope has almost driven out this valuable method of auscultation in England. I have long endeavoured to impress this on my clinical clerks and house physicians by actual demonstration, and I have sometimes been able to convince them of the value of the direct method. But those who have been brought up exclusively on the binaural stethoscope seldom hear well with anything else.

A point that I should like to insist upon is that the presence of crepitations over a dull area does not exclude fluid. I have several times heard crepitation over an empyema and a serous effusion. The practical importance of this is that we should not be deterred from exploring the chest for fluid in a suspected case because we heard crepitation over the dulness. I have known an empyema left unopened for some weeks on this account, the presence of crepitation having led to the diagnosis of pulmonary tuberculosis. In children, and less often in adults with thinly covered chest walls, I have, from time to time, met with instances when tubular breathing seemed to be conducted from a consolidated base to the opposite healthy lung. It is, of course, difficult to prove that the apparently healthy base was not also, to some extent, solidified. But against this view must be put the absence of any dulness to percussion and the generally brief persistence of the above sign.

It must have struck all of us that redux crepitus is a comparatively uncommon sign in resolving pneumonia. My experience has been that this crepitus is more often absent than present. Considering that resolution is almost entirely effected by absorption of the liquefied alveolar exudation we might expect to hear crepitations in such circumstances. The fact that we so often do not rather throws doubt on the alveolar origin of crepitations. It seems more probable that both the redux crepitus and the crepitant râle are produced in the small bronchi.

The dry, pungent skin of pneumonia is proverbial, yet some pneumonic patients sweat freely throughout.

The course of the disease, as a rule, is a definite one, ending generally, in the absence of complications, by the ninth or tenth day, more often on the seventh day. Abortive attacks, in which recovery takes place within two or three days, are not uncommon in children. But the same may occur in adults also, as shown by the following case.

CASE 6. *Abortive pneumonia; crisis on the second day.*—A medical man, aged 56 years, while writing a prescription for a patient was suddenly seized with a rigor and went to bed with a temperature of 103° F. The next day he expectorated scanty rusty sputum and ill-defined signs were discovered at the left base—viz, deficient entry of air—without any definite dulness. On the following day the temperature fell to normal and about the same time a most extensive eruption of herpes appeared, completely encircling the mouth and involving the tongue and soft palate. The crisis took place within 48 hours of the rigor, and the patient made a rapid recovery.

Complications.—Complications are mostly the expression of a secondary infection with streptococci and other microbes. In other cases pneumonia attacks people already suffering from other complaints and must be regarded as itself a secondary infection. True mixed infections where the pneumococcus and some other microbe simultaneously invade the body are very rare. I will refer to this point again. The history not uncommonly shows that bronchitis was present before pneumonia developed and it may be difficult to fix the exact date of the latter infection. In cases complicated with bronchitis a prolonged course and defervescence by lysis are to be expected, though exceptions are to be met with.

Laryngitis is a rare complication that I have only once recognised clinically.

CASE 7.—A young Jewess, aged 21 years, was admitted into the hospital on the ninth day of an illness which began with pain in the left side, followed by hoarseness and spasmodic cough. There were signs of consolidation of the left lower lobe and general bronchitis. The voice was hoarse and the laryngoscope showed intense general congestion of the larynx. The sputum was green and frothy. The history of cough, hoarseness, and fever at first suggested tuberculous laryngitis, but a well-marked crisis took place on the fifteenth day, the temperature falling from 103·2° to 98° F. and the patient made a good recovery.

I may remind you that in Case 2 already described membranous laryngitis was discovered at the necropsy, though no laryngeal symptoms were present during life.

Nephritis.—Albuminuria is a common feature of severe cases but a definite nephritis is exceptional. The following is a good example.

Case 8.—A boy, aged 4 years, had an attack of pneumonia, ending by lysis on the eleventh day. On the fifteenth day the temperature rose to 102° F. and moderate pyrexia persisted for another fortnight. On the nineteenth day double otitis media with offensive purulent discharge developed. On the twenty-third day he was drowsy and vomited; no optic neuritis; no dropsy; otorrhœa very slight. Urine contained blood and albumin for the first time and epithelial casts were present a few days later. In about a fortnight the urine had quite cleared up and the patient was discharged well, seven weeks after the onset of pneumonia.

Anasarca of renal type without albuminuria.—

Case 9.—The patient, a Hebrew boy, aged 4½ years, was admitted on Oct. 2nd, 1906. He was taken ill three days previously with shivering. He was said to have had pneumonia twice before. On admission there were signs of pneumonia of the left lower lobe and pleurisy at the right hase. The temperature remained high till the thirteenth day of his illness, when it fell by lysis, but after four days it rose to 103° F. and oscillated afterwards between 101° and 98·8° until his discharge. On the twenty-second day his face and legs became puffy and œdematous, his aspect suggesting renal dropsy. But the urine, though scanty, contained no albumin; specific gravity, 1028; reaction alkaline; colour amber. The dropsy disappeared in three or four days. The chest was explored twice, on the twelfth and twenty-third days of the illness, but no pus could be obtained. The parents refused to allow further exploration under an anæsthetic and removed the child. He was subsequently admitted into another hospital, where the empyema was opened, and recovery followed

This was a puzzling case. Œdema of the chest-wall is seen occasionally in cases of empyema and still more uncommonly in serous effusions into the pleura and pericardium; but in this case the dropsy was general, and the appearance of the boy resembled that of renal disease. Probably the dropsy was connected with the empyema.

Delirium.—Delirium of the lesser sort is a very common symptom. Even in mild cases there is generally slight nocturnal delirium at some period of the disease. Delirium tremens in association with pneumonia is so well known that it requires no notice here. Maniacal delirium in non-alcoholic subjects is uncommon. I can only recall three cases, all of which occurred at, or after, the crisis. Where mania arises it is, I believe, usually after the crisis. But Osler says that maniacal symptoms may appear at the very outset. Delirium during the febrile stage is attributable to the toxæmia affecting the nervous system. Post-critical mania has been explained on the hypothesis of exhaustion of the higher cerebral centres. Most authors hold that delirium is more prone to develop in cases of "apex" pneumonia. This has not been my experience. In my three cases of maniacal delirium the lower lobe alone was affected.

Case 10. *Maniacal delirium at, and after, the crisis.*—Patient, a temperate man, aged 37 years; pneumonia of left lower lobe; symptoms mild, sleeping most of the day till the night of the sixth day when a crisis developed with profuse sweating, the temperature falling from 103·8° F. at 8 P.M. to 98·6° at 8 A.M. next morning. On the night of the sixth day when the temperature was just beginning to fall violent delirium set in and persisted for 36 hours after the development of the crisis. He became very noisy, hearing voices of all sorts, his mother's among them, and impelled by his mother's voice he attempted to get out of bed. He became very violent as these attempts were frustrated, requiring three nurses to hold him in bed. This condition lasted with intermissions for 48 hours altogether. He then got some sleep for the first time. After this active delirium ceased, though his mental balance was somewhat disturbed for a few days longer. Recovery ensued.

In another case, that of a woman, aged 31 years, a mild case of pneumonia of the right lower lobe and pleurisy at the left base, terminating by lysis on the ninth day, maniacal delirium with delusions developed after the crisis had been established. From this she recovered in a few days. This patient had pneumonia 10 years previously.

Case 11. *Parotitis; acute delirious mania.*—Patient, a married woman, aged 32 years, seen Jan. 12th, 1900; husband recently had influenza followed by pneumonia, and died one week ago. Patient was seized with a rigor on Dec. 31st. Signs of pneumonia, right lower lobe, developed; gradual improvement followed in about a week, but the temperature remained about 101° F. One week ago a parotid abscess formed on the left side and was opened, thick pus escaping. Bacteriological examination showed presence of staphylococcus aureus; no pneumococci or influenza bacilli. When I saw the patient the abscess was still discharging. Physical signs suggested empyema, but punctures gave a negative result. The patient was in a state of mild delirium, with a very irregular pulse and frequent vomiting. The latter symptoms I attributed to digitalis, which she had been taking. Digitalis was discontinued and vomiting and arrhythmia ceased. The patient improved and the parotid abscess healed, but during convalescence acute delirious mania supervened. The temperature did not become normal till Feb. 12th. On Feb. 17th recovery was complete.

Diarrhœa. — Diarrhœa is a rather uncommon critical phenomenon, but it may appear quite early in the disease or more rarely after the crisis. As an instance of the first is the following case:—

Case 12.—A lady, about 45 years of age, much reduced in strength by long attendance on an invalid old mother, went to the latter's funeral on a cold day at Easter time. The same night she was taken ill with pain in the left side and next day signs of pleurisy were discovered. On the second day rapid consolidation of the left lung in the form of massive pneumonia developed, and on the same day profuse uncontrollable diarrhœa set in and produced extreme exhaustion, the patient dying on the third day.

Case 13. *Post-critical diarrhœa.*—Patient, a boy aged 5 years; pneumonia terminating by crisis on the seventh day. Three days later diarrhœa with blood and mucus lasting eight days; no rise of temperature or symptoms of severe illness; good recovery.

Death from pulmonary embolism during convalescence.—

Case 14.—A man, aged 56 years, who had previously enjoyed good health, developed symptoms of renal calculus. The operation for removal of the stone was quite successful. But 14 days later he was attacked by pneumonia, first the right, then the left lower lobe being affected. Defervescence took place by lysis on the twelfth day. Subsequently a small effusion was detected on the left side, and on the twenty-first day 2 ounces of serous fluid were removed by paracentesis. Four days later the patient seemed to be much better. But in the evening, while taking dinner in bed, he suddenly complained of feeling sick, vomited, broke out into a cold sweat, became very pale and collapsed, urgent dyspnœa appeared, and he died in a few minutes. An injection of strychnine was given immediately without any effect.

No necropsy could be obtained, but there can be little doubt that pulmonary embolism resulted from detachment of a thrombus from the right side of the heart.

Typhoid fever beginning with lobar pneumonia.—

Case 15.—The patient, a nurse, aged 36 years, was admitted on Nov. 16th, 1896. She began to feel ill and shiver on Nov. 12th, but did not take to her bed till Nov. 15th. On admission: Face flushed; pulse 100, respiration 32, and temperature 106° F.; no herpes; no cough or sputum; signs of consolidation of the right lower lobe; spleen slightly enlarged. Diagnosis: pneumonia. On Nov. 17th the late Dr. J. W. Washbourn saw her with me and injected 17 cubic centimetres antipneumococcal serum. Six more injections were given subsequently at intervals, the last on Nov. 24th, the twelfth day of disease. The temperature remained high, rarely falling below 104°, till the eleventh day, when it fell to 101 4°, but gradually rose again. The patient had now become restless and slightly delirious; the hands were tremulous; slight cough and expectoration; coarse crepitation at the right base; abdomen full. On Nov. 28th (the sixteenth day of the disease) the temperature had fallen to 101°, and remained at this level for three days. General condition unchanged; delirium and tremor still present; eruption of miliaria on skin of abdomen and trunk; no true rose spots; spleen still enlarged; bowels loose the last week; stools pale yellow; dulness at right base much less; coarse crepitation still audible. The right lung gradually cleared up, but there was little general improvement till the end of December, the temperature oscillating between 102° and 99°. On Jan. 1st, 1897, the fiftieth day of the disease, the temperature became normal, the spleen could no longer be felt, and convalescence thereafter was uninterrupted. The patient left the hospital early in February.

It is difficult to decide whether in such circumstances pneumonia was due to the pneumococcus or to the B. typhosus, though the marked recession of local signs during the third week seems to me more significant of a pneumococcal origin. In that case we had to do with a true mixed infection. In the Clinical Society's Transactions, Vol. XXXVIII., Dr. Sidney Phillips and Dr. B. H. Spilsbury record a case of lobar pneumonia in typhoid fever due to the B. typhosus. Dr. Phillips states that pneumonia in typhoid fever is by no means uncommon and may occur at the very commencement of the disease or at any period of its course. I have more than once seen lobar pneumonia occurring during the course of typhoid fever, but the above is the only instance in which I have met with it at the very start.

Rheumatic fever and pneumonia combined; simultaneous infection.—

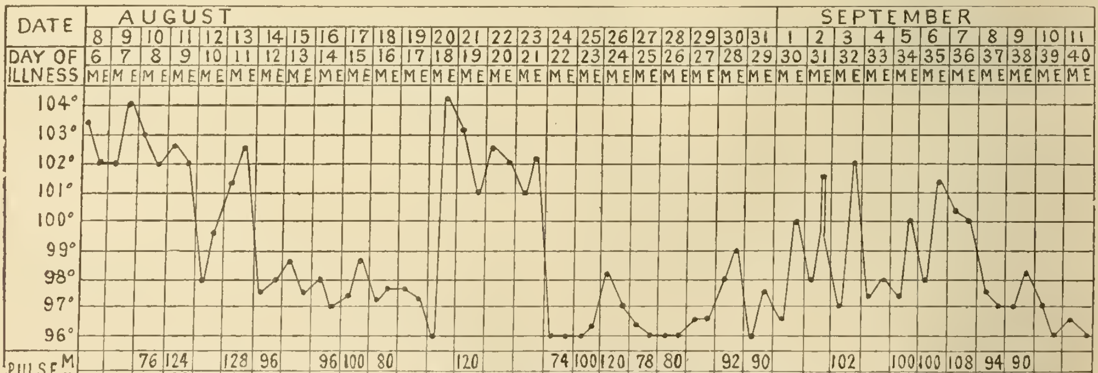
Case 16.—A man, aged 29 years, was admitted on June 7th, 1909, complaining of pain in the left hand, both hips, back, shoulders, and elbows. The pain began in the left shoulder on June 1st and the same night he became hot and feverish and had cold shivers and a sore-throat. He was laid up for seven months from Christmas, 1907, with "rheumatism," but he did not have to remain in bed. He never had chorea. On admission the patient was pale, sweating freely, and was slightly deaf. Pulse, 100; respiration, 34; temperature, 105·4° F.; no fluid detected in painful joints; shoulders acutely painful on movement. Heart's apex beat one inch outside nipple line; impulse weak, sounds clear; lungs clear. June 8th: Pain on right side of chest; pleuritic rub heard. Temperature fell from 105·4° to 97·5° in the morning but rose again to 101·8°. June 9th: Signs of consolidation of the right lower lobe. Temperature 104·3°. Pains in joints relieved by salicylate of soda, but temperature unaffected, oscillating between 103·8° and 99·0° for next 10 days. Signs of fluid effusion gradually developed at the right base, and the chest was needled twice on June 21st and 25th with a negative result. The patient rapidly became very pale and ill. The left shoulder remained exquisitely painful and tender and on June 17th was distinctly swollen. July 5th: Chest needled in three places unsuccessfully. Urine 1010, smoky, containing a trace of albumin and blood. Pain in left shoulder still very great. A faint systolic murmur was heard in the pulmonary area. July 10th: Patient was anæsthetised and needled in seven places. Pus was found just above the limits of absolute dulness; 18 ounces were removed and a rib was resected. The cardiac murmur disappeared, the urine cleared up, and after a slow convalescence the patient was discharged on Oct. 2nd with a small discharging sinus. A few weeks later, on his return from the convalescent home, he was looking rosy and well; empyema opening closed, heart normal, complains of nothing but slight stiffness of left shoulder.

This was at first taken for an uncomplicated case of rheumatic fever, though the temperature (105°) and the rigor at the onset were unusual for this affection. From the history it is clear that if this was a combination of rheumatic fever and pneumonia, as seemed probable, it was a true mixed infection, the two diseases appearing almost, if not quite, simultaneously. How far the persistent arthritis of the left shoulder was rendered septic or infected with the pneumococcus by the empyema is uncertain. It certainly was unlike the ordinary rheumatic joint.

Relapsing pneumonia.—By a relapse we understand a renewal of fever and signs of consolidation some days after a complete remission of symptoms and improvement or disappearance of pulmonary signs has taken place. In this strictly limited sense a relapse in pneumonia is a great rarity. Osler says: "There are cases in which from the ninth to the eleventh day the fever subsides, and after the temperature has been normal for a day or two a rise occurs and fever may persist for another ten days or even two weeks. Though this might be termed a relapse it is more correct to regard it as an instance of an anomalous course of delayed resolution." To quote Coupland and Sturges: "By relapsing pneumonia we mean the complete arrest or suspension of pyrexia for some days with resolution more or less complete, followed by reappearance of the early symptoms and repetition of the inflammatory process." It is surely as legitimate to speak of a relapse in such circumstances as it is in the case of typhoid fever. The conditions which determine a relapse are unknown, though a relapse must represent a reinfection probably from some focus in the lung. I have only met with two cases of a true relapse which I now give shortly.

CASE 17.—*Pneumonia with two relapses.*—A boy, aged 6 years, was quite well till August 2nd, when he was taken ill with vomiting. He subsequently became delirious and was brought to the London Hospital on August 8th. On admission his pulse was 124, respiration 38, and temperature 103·5° F., and there were physical signs of pneumonia of the left upper lobe. A crisis occurred on August 14th, the twelfth day of the disease, the temperature falling from 102·7° to 97·7° and the pulse from 120 to 96. The physical signs had cleared up on August 19th. The temperature remained subnormal for seven days, but on August 20th it rose to 104·2°, and remained above 101° for four days, after which time it fell to 96°. During this relapse signs of consolidation of the left upper lobe reappeared and the upper part of the lower lobe became involved also. The spleen was now found to be enlarged. From August 24th to Sept. 1st, the thirtieth day, the temperature was subnormal, but on the latter date it rose at night to 100°, and oscillated between 102° and 97° for another seven days. During this second relapse the boy did not appear to be ill, though the signs of pneumonia persisted. On Sept. 8th the temperature again fell to normal and the patient gradually recovered and was discharged on Oct. 1st (see Chart 2).

CHART 2 (CASE 17).



CASE 18. *Pneumonia with a relapse.*—A medical man, aged 34 years, had an attack of influenza for which he did not lie up till the second day. On the next day the temperature fell and he felt better. Two days later on getting out of bed to wash he had a rigor, his temperature rose to 105° F., and he complained of sharp pain in the right side and cough. On the fourth day from the appearance of the rigor there were signs of pneumonia of the right lower lobe; sputum scanty and brick-coloured; pulse 100, respiration 30, temperature 103°. On the eighth day consolidation of the base of the left lung. Defervescence took place by lysis, the temperature reaching the normal and the pulse falling from 100 to 80 on the ninth day. The sputum no longer contained blood. Both lungs began to clear up, tubular breath sounds disappeared, and coarse crepitus was heard at both bases. After four days of normal temperature and marked general improvement there was a sudden rise of temperature to 103° at night, and the sputum was stained with florid blood for three days. Dulness and tubular breathing were now well-marked at the left base (the side last affected), the right base showing only a trifling degree of dulness. The temperature fell by lysis and in six days was again normal. Gradual but complete recovery followed.

In both the cases narrated it will be noticed that the relapses were of a mild character, as is customary.

Delayed resolution.—The rapidity with which the products of inflammation are absorbed, especially in children, is one of the many remarkable features of pneumonia. Instances of resolution delayed beyond a fortnight are few, if we are careful to exclude the existence of pleural effusion. In most cases where the side remains dull exploratory puncture reveals the presence of pus or occasionally serous fluid. Resolution may be delayed for several weeks or even months, and the lung may still have a condition of simple grey hepatisation. Most cases of tardy resolution ultimately recover completely. In a very few instances fibrosis of the lung is developed. At times some flattening of the affected side appears without any other signs of fibrosis. In some of these probably a limited fibrosis has arisen. But in other cases flattening of the chest has been only a temporary phenomenon, and was evidently due to collapse of the lung. A. Fränkel believes that delayed resolution is mostly due to induration, but it seems to me that there is little evidence of this. It is well not to keep patients convalescent from pneumonia in bed very long after the temperature has permanently fallen if the general condition is satisfactory, whether dulness persists or not, assuming, of course, that pleural effusion has been excluded by exploratory puncture. I have more than once seen apyrexial cases of delayed resolution begin to clear up as soon as they were allowed to leave their beds and move about a little.

Fibrosis.—The relation of pneumonia to fibrosis has provoked much controversy. Some authors assert that a true lobar pneumonia never results in induration. Others consider that, although it is very uncommon, such an event does occasionally occur. The following is a very good instance of indurative pneumonia, organisation into connective tissue following hard on a severe lobar pneumonia.

CASE 19.—A man, aged 43 years, a hawker, was admitted into the London Hospital on March 10th, 1891, under Dr. Francis Warner, who kindly allows me to make use of the case, the notes being by Dr. Eliot Curwen. On March 1st he was suddenly taken ill with pain in the back on the right side, vomiting, and rigors. These became worse on the 4th, and the vomiting lasted nearly all day. The pain in the back became so bad, and "stiffness" in the thighs so marked, that he could not walk. Till he came to the hospital he vomited each day. The heavy aching pain in his back became constant and rigors were frequent. Cough had been severe since March 9th and expectoration more profuse, and he has complained of a sharp pain in the right side on breathing or coughing. Previous history: Bronchitis the last four winters.

On admission on the tenth day of disease the temperature was 104°; there was slight dulness at the base of both lungs, with weak breath sounds and numerous crepitations. The sputum was copious, watery, and frothy. Next day herpes labialis appeared and the sputum became viscid and slightly rusty. Pulse 128, respiration 56, and temperature 103·6° F. Right base more definitely dull behind and in the axilla; breath sounds absent behind; tubular in lower axilla. On the twelfth day delirium set in, noisy but not active, and persisted till his death. Dulness gradually spread up from the base on the right side and involved the whole scapular region, tubular breathing and crepitation being heard over the same area, and crepitation at the left base also. The temperature varied from 103·8° to 101° until the seventeenth day, when it fell to normal, but rose again gradually to 101°, falling to normal on the twentieth day and not rising again. Profuse diarrhœa set in the last three or four days, and with increasing delirium and weakness he died on the twenty-first day of the disease.

At the necropsy I found the following conditions on the right side: General fibrinous adhesions firm and fibrous along the posterior border; posterior part of all three lobes solid, of dull red colour, on section wet and glazed; no granulation of surface; interlobular markings distinct; no coarse fibrous bands; no dilated bronchi; anterior margins emphysematous; left lung emphysematous, congested, and œdematous at the base; heart muscle soft, fibres granular; liver large, soft, and pale; kidneys, cortex cloudy; other organs normal.

Microscopical examination of hepatised right lung: The alveoli contained granular and fibrinous plugs which were more or less completely enclosed in a delicate sheath of young connective tissue consisting of a hyaline substance interspersed with scanty fusiform and round nuclei. In a few places the fibrinous matter had been entirely replaced by a knot of young fibrocellular connective tissue. Here and there an alveolus contained nothing but a few large desquamated epithelial cells. The capillaries of the alveolar walls were gorged with blood, but there was no interstitial thickening.

In this case organisation of the alveolar exudation into connective tissue had already begun at the end of three weeks. A similar change in the lung has been noted in a fair number of recorded cases.

Cases of fibrosis of the lung following pneumonia may be roughly divided into two groups. In the first the disease is febrile and progressive, terminating fatally as a rule in a few months. In most cases ulcerative cavities in the lung develop, and the sputum may became foul. In the case just described there was no breaking down, possibly owing to the fact that the patient died so soon. In the second group fibrosis takes place very insidiously, arising out of what appears to be delayed resolution, without fever or constitutional disturbance, and the patient recovers with a fibroid lung.

In a paper on Subacute Indurative Pneumonia, published in THE LANCET in 1890 I described two cases of pulmonary fibrosis supervening directly on subacute forms of pneumonia. The anatomical changes in the first of these closely resembled those above mentioned—i.e., organising pneumonia. The history of this case was that the disease began with sudden chills, weakness, and cough, but the patient was only confined to bed for two days, though ailing from the first, and complaining of cough, expectoration, dyspnœa, and night sweats. Death took place about four months after the onset. The history suggested that it was not an acute sthenic pneumonia, the constitutional disturbance being relatively slight and transitory.

The case seemed to lend support to the view put forward by Wagner, Heitler, Talma, Hanan, and Pal, that the pneumonia which leads to induration is a special form distinct from the acute classical variety. These authors ranged themselves on the side of Rokitansky, Wilks, and Buhl, who denied that acute lobar pneumonia ever passes into a chronic stage, in opposition to the statements of Stokes, Charcot, Marchand, and Ziegler. But cases like No. 19 described above, as well as others published by A. Fränkel and other authors, have convinced me that this statement is too exclusive, and that it must be admitted that in exceptional cases acute lobar pneumonia may lead to induration. Why in some cases resolution delayed for months may be followed by complete recovery, while in another like the case just referred to induration should have begun at the end of three weeks must at present remain unexplained.

Dr. A. G. Auld, in the *British Medical Journal* in 1905, reported a case of "fibroid pneumonia" occurring in a child. The disease began acutely with vomiting and fever, soon followed by signs of pneumonia of the whole right lung, with remittent fever lasting for ten weeks. Improvement then began and the temperature became normal. So far there was no cough or expectoration. The lung remained very dull, but repeated punctures failed to yield any fluid. Subsequently slight fever returned, and when she was next seen, seven months after the onset, cough and expectoration had developed and tubercle bacilli were found in the sputum. Gradual improvement followed and eight weeks later her temperature was normal and her general health was good. Dr. Auld regarded the case as one of acute pneumonia going on to fibrosis with subsequent tuberculous infection.

A somewhat similar case was admitted into the London Hospital under my care about the same time.

CASE 20.—A labourer, aged 25 years, was admitted on June 28th, 1904. The patient, who had never been ill previously, first felt ill on June 17th, when he had much shivering, a stabbing pain in the left side, and soon afterwards cough, expectoration, and shortness of breath. On admission: pulse, 100; respirations, 20; temperature, 100° F.; signs of pneumonia (dulness, tubular breathing, and subcrepitant râles) of the left lower lobe. No change in the general or local condition followed. The temperature for the first three weeks ranged from 103° to 100° and was remittent in character. For the next three weeks it ranged from 101° to 99° and for the next fortnight from 100° to 98°. As the left side remained very dull, it was punctured, and 12 ounces of clear fluid were withdrawn on July 13th. A further puncture was made on July 22nd with a negative result. The sputum was repeatedly examined for tubercle bacilli, but none were found. The patient improved greatly and was sent to a convalescent home on August 24th, when his temperature had become normal. The day the patient was discharged his sputum was found to contain tubercle bacilli for the first time. He was subsequently admitted into the Brompton Hospital, but discharged himself in a few days. In September, 1906, two years after the acute attack, he was seen by Dr. A. I. Simey, the medical registrar, who found signs of "typical phthisis" with tubercle bacilli in the sputum.

The case was originally regarded as one of pneumonia with delayed resolution, but when tubercle bacilli were discovered the diagnosis had to be reconsidered. Was it a case of lobar pneumonic tuberculosis from the first, or was it a case of lobar pneumonia associated with tuberculosis? The latter seems far more likely, for the lobar pneumonia form of tuberculosis is almost always progressive and a fatal issue usually reached in a few months at the latest. Whether tuberculosis was grafted on the pneumonia or whether tuberculosis was present though latent at the time that pneumonia developed admits of discussion, though I myself am in favour of the second view.

An Address

ON

THE MECHANISM OF INFECTION IN TICK FEVER AND ON THE HEREDITARY TRANSMISSION OF SPIROCHÆTA DUTTONI IN THE TICK.[1]

Delivered before the Society of Tropical Medicine and Hygiene on Dec. 17th, 1909,

BY SIR WILLIAM B. LEISHMAN,
M.B., C.M. GLASG.,

LIEUTENANT-COLONEL, R.A.M.C.; PROFESSOR OF PATHOLOGY,
ROYAL ARMY MEDICAL COLLEGE.

MR. PRESIDENT AND GENTLEMEN,—For some years past I have been greatly interested in spirochætæ, and have, among others, worked with pallida, vincenti, recurrentis and duttoni, both from the morphological and the biological sides, one of the principal objects of my investigations being the vexed question of their protozoal as against their bacterial nature. You are all aware of the opposing views which have been held on this point, and I must at once confess myself an advocate of the protozoal theory. I need hardly add that the solution of this point is of more than academic importance, and is intimately concerned with problems of immunity, and may possibly lead to successful prevention and treatment in the future.

The main facts in connexion with infection in tick fever are well established, and I will only say that I have confirmed, if further confirmation were needed, the fact of transmission of the disease to animals by the bite of ticks sent to me from Africa. The hereditary transmission of the disease to the second generation of ticks I have also confirmed, as nymphs which I have reared in the laboratory from the egg are infective for mice and monkeys. Moeller's observation of the further transmission of the virus to the third generation I am not yet in a position to confirm as my second generation has not attained sexual maturity. Hereditary transmission through the tick, then, being established beyond doubt, my first observations were directed towards the discovery of spirochætæ in the bodies of infected ticks, and long and carefully did I search those which I first received from Africa through the kindness of my friend Captain Hallam Hardy, R.A.M.C., whose sad death from sleeping sickness you may have heard of. My search was in vain, no trace of a spirochæta was found. As these ticks had failed to infect a monkey by their bites, I concluded that they themselves were not infected and asked for more, stipulating that on this occasion the ticks should, if possible, be collected from huts in which cases of tick fever had occurred. I need

---

[1] The expenses of this investigation were in part met by a grant from the Royal Society.

not trouble you with details of further failures, but I was in the end successful in infecting a monkey with tick fever by the bites of ornithodorus, collected in Nyassaland in infected huts. At the height of the fever, when the blood was rich in Spirochæta duttoni, I allowed a large number of my ticks to feed on the monkey, and was then in possession of material with which to carry out the researches I had in contemplation.

I mentioned just now that my first batches of ticks showed no spirochætæ in any portion of their anatomy; to my surprise I was equally unsuccessful in my search in the case of the batch which infected the monkey, and, I may add, in the case of other batches since received from different parts in Africa, which also proved infective. It is, of course, impossible to exclude the chance that some of the ticks which bit the monkeys in question did harbour spirochætæ. This fallacy is one which is always present in such work as that under consideration. For example, whatever conclusion one arrives at as to the condition of a given batch or brood of ticks must be founded on the examination of a sample of such batch. However large the sample, and there are obvious limits to this where it is desired to follow up the course of subsequent events in such a batch, any conclusion is open to the objection that a different condition existed in a member of the group which was allowed to survive. Conservative surgery in the case of a tick is unfortunately impossible. The number of my examinations, however, totalling many hundreds, of ticks in all stages of development enables me to say with a fair degree of certainty that no spirochætæ were present in the tissues or body fluids.

Turning now to the hereditary transmission of infectivity to the second generation of ticks, which, as I have mentioned, I have personally confirmed, this confirmation was made with the progeny of those ticks which, if infected, brought their infectivity with them from Africa and had only fed on normal blood since their arrival in England. Here, again, no spirochætæ could be found, either in the very youngest eggs which it was possible to dissect out of the ovary, in eggs at various stages of incubation, or in the larvæ and nymphs hatched from such eggs. I may at this point remind you that the persistence of spirochætæ in the tick, their presence in the ovaries, and their presence in the eggs and in young hatched from these eggs has been observed by Koch and, in part, confirmed by Carter, the former working in German East Africa and the latter at the Liverpool School of Tropical Medicine. The negative results which I obtained were very puzzling in view of these positive ones, but I think now that they are reconcileable in the light of the subsequent experiments and observations which I shall mention.

I next turned my attention to a study of the fate of spirochætæ ingested by ticks, dissecting a tick of each batch every day for a fortnight; in every instance the following were examined: the cœlomic fluid, the gut contents, the walls of the intestinal sac and portions of its diverticula, the genital organs, the salivary glands, the coxal glands, Gené's organ, the Malpighian tubes and Malpighian secretion. The result may be stated briefly: no recognisable spirochætæ could be detected later than the tenth day. The changes which the spirochætæ underwent in the intestinal sac were found to be very interesting, but would take too long to describe in detail. Dutton and Todd have described many of these changes, as well as others which were not encountered in my specimens. The principal features were the extrusion of lateral, more rarely terminal, swellings, which contained one or more particles of chromatin, and the breaking up of the chromatin core of the spirochæta into numerous fragments of coccoid or bacillary shape. In a few instances these small chromatin particles have been observed free in great numbers in the gut contents. Long before this I had observed in the Malpighian tubes of almost every tick dissected aggregations of curious clumps of chromatin granules, often in such numbers as to mask the cellular structure of the tube. These granular clumps I subsequently encountered in all stages of the tick's life, from the microscopical ovum up to the adult. Dutton and Todd have also noted granules in the Malpighian tubes of ticks recently fed on spirochæta blood which they considered to be derived from the spirochætæ, but I am in some doubt as to their identity with those in question, since Dr. Todd, to whom I had the pleasure of showing some of my specimens, informed me that he had not observed this condition in the tubes of young nymphs. I may say at once that I consider these chromatin granules to be derived from spirochætæ, and, further, to be connected with them biogenetically. The situations in which they are encountered are the following. First, the Malpighian tubes, in which their distribution may be very irregular, some portions being distended by them, while none may be found in a long tract of the same tube. This irregular distribution may possibly be explained by the granules having escaped from the thin-walled intestinal sac into the tubes only in those situations in which the two structures happen to be in close contact. Secondly, in the ovary, where they are often encountered in great numbers and where, at times, a few clumps may be detected lying within the immature ova. Thirdly, they are sometimes found in small numbers in the walls of the intestinal sac. Finally, as a very rare occurrence, similar clumps of granules have been seen in the cells of the salivary glands.

From the time I first observed these granules, more than three years ago, I was suspicious of their possible protozoal nature, as they failed in many points to fit what appeared to me to be the only alternative explanations as to their nature —viz., first, artefacts resulting from the staining method employed; secondly, granulations connected with the cellular cytoplasm; and thirdly, bacteria. They appear to consist almost entirely of chromatin, although at times a faint blue-staining fragment has been seen attached to the granules or rods of chromatin. The tendency to adhere loosely in the form of little clumps or aggregations of a number of granules is very marked, both in those stained in the unruptured tissues and in such as have been liberated by the laceration or division of such tissues.

During the prolonged search for spirochætæ in the eggs, larvæ, and nymphs of infected ticks the same clumps of chromatin granules were almost invariably detected. From the youngest eggs recognisable under a high power in the teased-out ovarian tissue, up to the young nymph hatched out from the egg of an infected mother, granules have been observed at all stages. Only a small proportion, however, of the microscopic eggs showed granule clumps, and, as a rule, only one or two clumps were observed, with one exception, where a large number of clumps were seen, filling up the egg case. In larger eggs, which it was possible to dissect out from the ovary with fine needles under the microscope, the clumps were more abundant, while in mature eggs laid under natural conditions they were rarely absent and often numerous. The subsequent fate of these granules was studied from day to day after the eggs had been laid, and it was seen that, very soon after the first recognisable embryonal cells made their appearance, the granular clumps were found in the protoplasm of some of these cells. At a still later stage small masses of cells were seen, obviously in rapid growth, in which the clumps were once more found. From this point all the granule clumps seen were intracellular, never free unless such cells had been ruptured. Subsequent close investigation showed that such cell aggregations were the primitive commencements of the Malpighian tubes of the young tick, every intermediate stage being seen up to such fully formed tubes as could be recognised without doubt, many of which, even at this early stage, showed the characteristic crystals of the Malpighian secretion in their lumen. From this point up to the formation of the larva and the final emergence of the octopod nymph from the egg the granules were only to be encountered in the Malpighian tubules and only free when such tubules had been torn in the act of making the slide preparations.

Assuming their spirochæte origin, it is obvious that these granules are not mere "resting forms," as they multiply in the egg and in the young tick, the few clumps seen in the most minute egg giving rise to the thousands found at a later stage in the Malpighian tubes. In all the subsequent stages of the growth of the nymph, at any rate up to the sixth moult, which is as far as I have followed the generation bred in the laboratory, they are constantly present in the tubes, though their numbers show great variations and the irregularity of their distribution in such tubes is sometimes very marked. Contrasting nymphs hatched from females which had been known to feed on spirochæte blood with others hatched from females fed in the laboratory only on normal blood there was no doubt that the granules were much more abundant in the case of the former; at the same time, the latter nymphs almost always showed the same granules, though in smaller numbers, while in a few instances I have been unable to detect any in the pieces of tube which were examined.

I may now proceed to describe some experiments aiming at the determination of the nature of these granules. Cultivation under very varying conditions gave nothing but negative results. Inoculations of mice, however, proved more successful. For this purpose various organs of ticks were carefully dissected out, washed in many changes of sterile salt solution, and, finally, broken up as far as possible by grinding in salt solution, the resulting emulsion being injected hypodermically into white mice. The presence or absence of spirochætæ or granule clumps was noted by staining and prolonged microscopic search. In a certain number of cases positive results were obtained with emulsions of Malpighian tubules, of ovarian tissue, and of the white secretion of the Malpighian tubes, never, so far, with emulsions made from the salivary glands. The mice in these cases, after an incubation period of seven to ten days, corresponding with the usual incubation period after natural infection by tick bite, developed tick fever and showed abundant spirochætæ in their blood. In all cases in which infection occurred the granules were proved to have been plentiful in the fluid or tissue inoculated, while no spirochætæ could be found. As already mentioned, the failure to find spirochætæ does not definitely prove their absence, but my search has been so close that I feel fairly confident that they were absent in the cases mentioned. Positive results from the inoculation of emulsions containing such granules were not, however, obtained in all cases, and the material which produced spirochæte infection was, in the majority of instances, derived from ticks which had been kept at a temperature of from 34° to 37° C. for a day or two before dissection. (Except where otherwise noted all the ticks were kept at a temperature of 22° to 24° C.) Subsequent work leads me to think that the higher temperature has the effect of inducing changes in the granules which are an essential preliminary to their ultimate development into spirochæte form. This point will be mentioned again in discussing the effects of heat upon ticks recently infected with spirochæte blood.

A few words may now be said upon the method of natural infection by tick bite. It has, I think, been generally assumed, if not actually asserted, that this occurs by means of the injection of spirochætæ through the biting parts of the tick, such spirochætæ having previously harboured in the salivary glands. My persistent failure to find a single spirochæta in the salivary glands of a tick, even in such as I had infected by allowing them to feed on heavily infected blood, appeared to me to throw some doubt upon the correctness of this view. At the same time, the inoculation of granules through the medium of the salivary secretion also appeared improbable in view of the extreme rarity with which I have encountered them in the salivary glands. An alternative method appeared to me as possible and was submitted to experimental test in the following way. Nine ticks which I had infected some months before were allowed to bite a monkey. After they had fixed and commenced to feed they were gently removed and placed on another monkey, on whom they were allowed to gorge. The fact of their all having bitten the first monkey was verified by observing the punctures and small ecchymoses which surrounded the bites. As is well known, when these ticks commence to swell they pass a large quantity of clear fluid from the coxal glands (whose anti-coagulating properties I have been able to determine), and some, in addition, pass the white secretion of their Malpighian tubes. These fluids, therefore, bathe the skin of the monkey and almost certainly may penetrate into the subcutaneous tissues through the punctures left when the tick has loosened its hold on its host. The two monkeys, then, although bitten by the same ticks, differed in the following respect: on the first none of this fluid had been passed, while on the other the wounds were bathed in it. Some of the fluid passed on the second monkey was also collected and inoculated hypodermically into a mouse. Careful search of this fluid showed neither spirochætæ nor granules; the latter, however, are so minute that they might readily be missed. The result of this experiment was interesting and suggestive; the first monkey was not infected, while the second monkey and also the mouse developed tick fever, which ran a typical course.

It would appear, therefore, from this experiment, and others of similar nature, that a possible method of infection, perhaps the common one, is through the medium of the secretions voided by the tick in the act of gorging and not, as usually supposed, by the direct inoculation of spirochætæ in the veneno-salivary secretions. This problem of the method of infection, however, appears to me to be still far from clear. Those who are familiar with the recorded experiments on tick transmission will recall that, in almost every instance, a number of ticks have been employed and not a single individual. I, too, have found that one cannot be certain of infecting an animal by the bite of a single tick, even when such tick is known to be one which is heavily infected. It is obvious therefore that other factors must come into play. One of these factors, though in my opinion by no means the only one, is undoubtedly the temperature at which the ticks have been kept prior to their being allowed to feed. In Africa it has been shown that to secure the infection of animals it was necessary to bring the ticks down from the high and comparatively cool country and conduct the experiments in the warmer low ground. Again, most workers before allowing ticks to feed keep them for some hours, or for one or two days, at a temperature approximating blood heat, although the reason for this is usually held to be simply that it renders the ticks more active and more inclined to feed. To my mind this preliminary heating has a different significance—namely, that it has the effect of inducing certain changes in the granules which may be held as heralding their transformation into spirochæta form. It is hardly necessary to add that I do not make such a suggestion as a mere hypothesis, but as the result of many months' labour in the study of infected ticks kept under varying conditions of temperature. It would occupy far too much time to describe these experiments in detail, and I shall confine myself to a brief summary of the results of the more important.

1. In nymphs of various ages and adults, which have been kept for a week or ten days at a temperature of 34° C., spirochætæ have, in some instances, been seen to reappear in various situations, chiefly in the Malpighian tubes and in the walls, not the lumen, of the intestinal sac and diverticula. These spirochætæ, however, did not resemble Spirochæta duttoni as encountered in the blood; they were shorter, more homogeneous, and less regularly curved; they occurred, too, as far as could be observed, not in the fluids, but actually in the cytoplasm of the cells lining the tubules and the intestinal diverticula.

2. The above change is preceded or accompanied by an alteration in the character of the granules so constantly found in the Malpighian tubes; these become more coccoid or spherical in form, and many are enlarged beyond the usual limits of size.

3. Control material in the shape of ticks of the same batches, which had always been fed at the same time and on the same animal, but which had been kept at a temperature of 24° C., showed on dissection no trace of spirochætæ, but only granules of the usual types and in the usual situations.

4. Spirochætæ which have reappeared in ticks under the above conditions of temperature, &c., may persist in such ticks for some months after they have been replaced at the lower temperature and are found in the same situations, though in smaller numbers.

5. Young nymphs newly hatched from infected parents, when kept at a high temperature, show the same changes in characters of the granules as older ticks and adults, but spirochætæ have never been noticed. This would suggest that a feed of blood may be another factor in inducing the change into spirochæte form.

6. A comparative study has been made of newly hatched nymphs whose first meal consisted of spirochæte blood and which were subsequently divided into three lots and kept respectively at 24°, 34°, and 37° C. Several nymphs of each group were examined daily up to three or four weeks after feeding. (*a*) In nymphs kept at the lower temperature of 24° C. the ingested spirochætæ were found to undergo speedy segmentation of the chromatin, and, after a period of 10 or 12 days, were found to have disappeared completely from the stomach; later than this no spirochætæ could be detected in any situation in the nymph's body. An increase in the number of granules in the Malpighian tubes appeared

to coincide with the disappearance of the spirochætæ from the gut, but this point was difficult to verify in view of the constant presence of the granules in almost all ticks and the variable numbers encountered in different individuals. (*b*) Nymphs kept at a temperature of 34° C. showed similar changes in the ingested spirochætæ, but such changes and the disappearance of the spirochætæ from the gut occurred more rapidly than in those kept at 24° C. A few days after the spirochætæ had disappeared they *re*appeared in the tissues and fluids of the lymph, but in greatly altered form, most being very much shorter than any of the forms usually seen in the blood, while many were little larger than cholera vibrios. The smallest forms of duttoni as seen in the blood are about 16μ to 19μ in length, Dutton and Todd mention one of 13μ, but many of these "young" forms, as I may call them, are no more than 8μ to 9μ. These young spirochætæ persisted as long as the ticks were kept at this temperature, but rapidly disappeared when they were replaced at 24° C. In some situations it was apparently possible to trace the origin of the young spirochætæ out of the granules. (*c*) Nymphs kept at a temperature of 37° C. showed a similar condition as regards the spirochætæ to those kept at 34° C., the young spirochætæ appearing after the ingested ones had disappeared from the gut, but in this case they were not so abundant, doubtless on account of the impaired vitality of the ticks, which, at this temperature, will not moult, and eventually die in about three or four weeks.

7. Attempts made with a view to the detection of spirochætæ in the eggs laid by infected parents. Out of many hundred eggs examined it is only recently that spirochætæ have been encountered, and this in four eggs only. Two of these were eggs laid by a tick which had been heated for five days at 37° C. some months before, but which had subsequently been kept at 24° C. In this case the spirochætæ were scanty and of the usual adult form. The two remaining eggs were dissected out of the ovary of a tick which, after feeding on normal blood, had been placed at 34° C., and kept at this temperature for nearly four weeks before dissection. In this instance the spirochætæ were extraordinarily abundant; they occurred in great tangles, and many of them appeared to be in process of development out of the granules.

With regard now to the influence of previous heating of the ticks in connexion with some of the experiments to which I have alluded. It is, of course, possible in cases in which infection of the animal resulted, whether through the agency of the bite of tick or through the inoculation of portions of tissues or secretions of ticks, that spirochætæ may have been present although they escaped observation. As I have already mentioned, it does not appear practicable in such experiments to exclude this possibility. At the same time, the most arduous and prolonged research of the material inoculated, or of the tissues of these ticks dissected after they had fed, has in many instances resulted only in the demonstration of the granules. In some cases in which infection was successful the ticks employed had been heated for from one to four days at 37° C. As already recorded, prolonged heating at this temperature has, in some instances, resulted in the reappearance of what I have called young spirochætæ. The question arises, therefore, whether infection in these cases may have been due to the inoculation of such spirochætæ, and not, as I have suggested, to the inoculation of the granules. I do not feel able at the present moment to speak with confidence on this point, and will only say that the general analysis of my results leaves me with the impression that inoculation of the granules alone may cause infection, but that it appears probable that previous heating of the tick is an essential preliminary, inasmuch as it induces changes in the granules which are the initial stage of their conversion once more into spirochætæ. I may add, in connexion with this question, that a considerable number of mice inoculated with material containing granules only, although not becoming infected, died in from 24 to 48 hours, although but a small dose was inoculated, and this subcutaneously. A bacterial septicæmia was excluded in these cases by the post-mortem examination.

Two further observations made in the course of these investigations appear worthy of record before I proceed to my concluding remarks. First, the development of immunity in the case of the monkey. One of the monkeys infected by tick bite recovered, an exceptional experience, after the third relapse. Infected ticks were allowed to feed on this monkey four weeks after recovery and infection again resulted; but in this instance there was no relapse. Five months later the bites of another batch of infected ticks resulted in the appearance of very rare spirochætæ on the eighth and twelfth days only, while a fourth feeding, one month later, demonstrated at last an apparently substantial immunity since no spirochætæ were subsequently found. Secondly, on two occasions I have observed clumps of the granules in spermatozoa found in the oviduct of an infected female. It appeared to me in these cases that there was no doubt as to the actual inclusion of the granules in the spermatozoon, as opposed to possible superposition. If this was the case, and if my views as to the nature of these granules prove correct, this suggests an interesting possibility as to the method by which the young intra-ovarian egg becomes infected, while it would not be unreasonable, on grounds of analogy, to suspect that a similar procedure might occur in the case of the hereditary transmission of the Treponema pallidum.

I shall resist the temptation to theorise upon the manner in which this view of the life-history of Spirochæta duttoni fits in with the facts known as regards other spirochæte infections, and will only point out that such a cycle of development would, in my opinion, afford a more satisfactory explanation of the mechanism of the relapse than some of the others which have been put forward.

In conclusion, gentlemen, you will realise that experiments such as I have described are inevitably long-drawn-out, and from their nature exceptionally difficult of interpretation. It is also inevitable that the necessary confirmation, if such be forthcoming, cannot be rapid. I may mention, however, the few pieces of confirmatory evidence which have come to my knowledge since the publication of my preliminary note.

First, Professor G. H. F. Nuttall was good enough to confirm my observations as to the presence of these granules in the eggs and ticks which I sent to him, and also to inform me that he had failed to find them in similar situations in some other Argassine ticks.

Secondly, Dr. A. Balfour, on searching the Argas persicus, which transmits the extremely interesting fowl spirochætosis of the Soudan which he has described, encountered similar granules in infected ticks, and was also able to confirm some of my experiments by injecting emulsions of tissues containing these granules, but no spirochætæ, with the result that the chick injected contracted spirochætosis.

Thirdly, I have recently been informed by Dr. S. T. Darling that he has found granular forms in the tissues of animals infected with the spirochæta of the relapsing fever which occurs in the Isthmus of Panama, which granules he, also, suspects to be biogenetically connected with the spirochætæ, and that inoculation of such tissue, apparently completely free from spirochætæ, was followed by infection.

These observations are naturally encouraging, but I should like it clearly to be understood that no one realises better than myself how far some of my results are removed from absolute proof and how much they stand in need of control and confirmation.

Presentation to a Medical Man.—At the Eversfield Chest Hospital, St. Leonards, on Dec. 16th last, Dr. Thomas Gambier was presented with an oil-painting of himself in his study, handsomely mounted and inscribed, as a token of the affectionate regard in which he is held by old friends and patients and as a testimonial to his indomitable zeal and persistent labours. Dr. Gambier founded the hospital 25 years ago at Friedenfels, St. Leonards, but the growth of the work necessitated the erection of more commodious premises. It is now proposed further to extend the hospital. The purchase of land opposite the existing building is nearly completed, and on that site it is hoped to erect a nurses' home, an out-patients' department, and a laboratory. Further, it is proposed to extend the verandahs in order to permit of more patients sleeping in the open air. Since its foundation some 5561 patients have passed through the hospital—268 during the year 1909—the majority of the cases coming from London and Birmingham.

REMARKS ON THE TREATMENT OF WOUNDS IN CONNEXION WITH THE RECENT RESULTS OBTAINED AT ST. GEORGE'S HOSPITAL.[1]

By Sir W. WATSON CHEYNE, Bart., F.R.S., F.R.C.S. Eng.,
SENIOR SURGEON TO KING'S COLLEGE HOSPITAL, ETC.

About a year ago in the Bradshaw lecture I went into the subject of the treatment of wounds, and pointed out what I considered to be the essential factors to be attended to in trying to obtain an aseptic result. I also ventured to criticise some of the details of the methods which are so generally employed by surgeons at the present time, and which seemed to me to be imperfect from a bacteriological point of view, and thus were apt to lead to failure in securing the desired result.

It is most unfortunate that the idea seems to have grown up that the success or non-success of the treatment of wounds depends to a large extent on the materials used, and on the method by which the sterilisation of these materials is effected.

The result of this idea is that the failures in avoiding suppuration are apt to be attributed to the use of this or that material or of this or that method of sterilisation rather than to the true reason—namely, failure on the part of the surgeon to meet the bacteriological requirements of the case. Hence we have the extraordinary craze at the present time to banish the use of antiseptics, the failures being attributed to their employment and not to the real cause—namely, faulty manipulations on the part of the surgeon. As a matter of fact, efficient sterilisation of the instruments, materials, &c., can be brought about in various ways, but the asepticity of the results depends essentially on the care that is taken to prevent re-infection of the hands of the operator and his assistants, the instruments, materials, &c., during the course of the operation, for if these become infected again, sepsis in the wound may very readily follow.

The discussion which is going on about what is falsely called aseptic treatment as against the use of antiseptics is utterly unscientific and misses the real point at issue. It reminds one of the early objections raised against Lister's work. Many, under the impression that the essence of it was the use of carbolic acid, began washing their wounds with carbolic acid, and naturally failed to get the desired results. They accordingly wrote and spoke against the method, but they failed to recognise that the essence of the matter was not the use of carbolic acid, but the way in which it was used. So at the present time the stress which is laid on the fittings of operating theatres, the use of masks, rubber gloves, dry swabs, and all the other paraphernalia which are the fashion just now, is apt to overshadow the real point in obtaining an aseptic result—viz., what the surgeon is doing with his hands. It is in the manipulations carried out by the surgeon that the real essence of the matter lies, not in these various fanciful surroundings. The personal equation of the operator has more to do with the result than anything else.

There are certainly two schools at the present time, but the essential point of difference is not whether use should be made of antiseptics in the course of an operation or not. The essence of the question at issue is whether the treatment of wounds shall be looked on as a bacteriological problem or not. On the one hand we have those, among whom I may include myself, who look on the treatment of a wound as a bacteriological problem of a complex character and who take advantage of anything which aids in fulfilling the bacteriological requirements of the case, not forgetting, of course, that the tissues themselves have to play an important but secondary part. The other school looks on the action of the tissues as the essential element and the bacteriological question as of secondary importance. They try, therefore, to irritate the tissues as little as possible, and sacrifice various things which would be of value if the case were regarded as a bacteriological problem. In doing so they are apt to be led away by the non-essential surroundings, and forget what an element the personal equation plays in the result. It is, I fear, too often a case of keeping the outside of the cup and platter clean. In my opinion, this view is a very serious fallacy, and the essential point is what the surgeon does with his hands during the operation, and not the surroundings in which he operates.

I have felt certain for a long time that the results obtained by those who endeavour to do away with the use of antiseptics, and who rigidly employ what is falsely called the aseptic method, cannot be compared with those which are got when the treatment of a wound is looked on as a problem in bacteriological work and when the surgeon acts accordingly. Till recently, however, I had no actual statistics at hand as regards the frequency of suppuration in wounds treated by the recent methods, and consequently I have always felt that though I was right my argument was not altogether convincing, seeing that I could only speak generally. This difficulty has, however, been remedied by the publication in The Lancet of Nov. 27th, 1909, of the results of the so-called aseptic method which have been obtained at St. George's Hospital.

Before, however, I go on to refer to these results I may mention a few of the points on which my conclusions adverse to this method were founded. In the first place, this so-called aseptic method, with its sterilisers, boiled water, heated towels, dry swabs, dry dressings, saline solutions, masks, &c., is full of loopholes, and does not in any way meet the bacteriological requirements of the case. To wash the skin with soap and water, even though the water is boiled, and then rub it over with a 1 in 500 solution of biniodide of mercury and spirit, is not in any way a reliable method of sterilising the field of operation. To lay instruments on a dry sterilised towel, and to work with them for perhaps half an hour, or an hour or more, without re-sterilising either them or the hands of the surgeon or his assistants is utterly opposed to any real attempt at keeping wounds aseptic. To wear the same overall during a whole afternoon's operations, even though it was sterilised in an autoclave in the first instance, is hardly consistent with asepsis. To put on this sterilised overall after the hands have been washed but before they have been disinfected, as is so often done, is to infect it at once, still more so to put it on and then subsequently arrange blankets, &c. What bacteriologist would ever dream of carrying out his work under such conditions? No doubt the answer is that the tissues themselves have a great power of dealing with organisms which come in contact with them, provided that the latter are not too numerous or too virulent, and provided that the tissues themselves are very tenderly dealt with, so as not to impair seriously their power of resistance. This is, no doubt, to a certain extent true, and very fortunately so, but one must not try the tissues too far, or place too much reliance on their action. The less the tissues have to do in the way of destroying bacteria the greater the probability, and, I may even say, the certainty of securing an aseptic result.

As regards the imperfections of these methods I also judge by the way in which many nurses who have been trained in hospitals where these plans are carried out act at an operation as indicating the training which they have received and the ideas which they have gathered from it. Nurses are always using the terms "sterilised" and "aseptic," but the majority of those whom one comes across in private practice have no real conception of their meaning. Ask a nurse who is wearing rubber gloves which have been well boiled, and who has perhaps been washing sponges in sublimate solution, and whose gloves are thus perfectly aseptic, to come and hold a retractor. What is the first thing that she does? Instead of coming promptly she rushes off to a tap or basin of water and carefully rinses off the antiseptic and soils her gloves, and then comes beaming with satisfaction at having demonstrated how thoroughly aseptic she is. Her annoyance when I decline her assistance after this performance cannot be concealed, and she evidently regards me as an extreme faddist and quite behind the times. Only quite recently I had two "aseptic" nurses to assist at an operation, who, having by my direction boiled some towels to surround the area of the operation, and not having a basin at hand, placed them in the commode till they were required! I could fill pages with the absurd errors which I have seen and which would be highly amusing if they did not imperil the well-being of the patient. One would have expected that, coming from a hospital where these difficult aseptic methods are employed, the nurses would have been especially thoroughly drilled in the extreme care that it is necessary to exercise in every direction during an operation if there is to be any certainty of success as regards the occurrence of sepsis. But, on the contrary, I find that so long as the instruments or materials have been immersed in boiling water, for however short a time, or heated in one of the imperfect sterilisers which are on the market, everything is all right whatever may have happened to these things since they were prepared.

---

[1] See paper on a Comparison between the Antiseptic and Aseptic Methods of Operation, with Special Reference to the Occurrence of Suppuration, based upon the results obtained at St. George's Hospital during the years 1906 and 1908 respectively, by H. S. Pendlebury, F.R.C.S. Eng., and Ivor Back, F.R.C.S. Eng. The Lancet, Nov. 27th, 1909, p. 1578.

Further, I frequently hear the experience of medical men who have been visiting hospitals abroad and at home where this treatment is carried out, and their reports of the aseptic results as obtained by the modern methods are not particularly favourable, and they constantly express themselves puzzled as to how we obtain the results which we do at King's College Hospital, where our operating theatre cannot be said to be in any way a model of a modern operating theatre.

I have also been very much impressed by what one hears of the difficulty of sterilising ligatures, skin, &c., and of the frequency of stitch abscesses (I have known a large collection of pus in the pelvis after a clean ovariotomy spoken of as a stitch abscess), things which very seldom come under our notice, and I have been especially struck by the incredulity which is evident when, in discussing these matters, I have said that I have had little or no experience of them. The conversation is at once dropped, evidently from a desire not to lead me to imperil my immortal soul by further perjury. As an example of this point and the results generally obtained in Germany, I was very much interested, in reading Bier's "Text-book on Hyperæmia," to come across the following remarks on p. 287 in the English translation. In speaking of the treatment of infected wounds he says:—

> Not infrequently laparotomies which cannot be executed aseptically and even radical operations for hernia, are followed by a mild small infection leading to the formation of sinuses.

And again, on p. 334, in the course of some remarks on the prophylactic treatment of wounds suspected of infection, he says:—

> In connexion with this experience [the failure of the hyperæmic treatment in some cases] are experiments which I have undertaken with a view to change the aseptic treatment of wounds. It would be incredibly foolish for a surgeon to question its brilliant accomplishments. But in spite of asepsis, we have not yet progressed so far that we can guarantee with certainty the healing by first intention of all wounds adapted to suture. How often, for example, does it occur that silk threads are expelled, or that a wound which on the whole has healed by first intention shows small defects, (stitch abscesses, sinuses)!

These are to me astonishing statements and what astonishes me most is the matter-of-fact way in which these failures are spoken of, as if they were every-day occurrences. If I had a "small defect" in a wound I should be very seriously unhappy, and should not rest till I had tried to find out what was the error which I had committed.

The result of these experiences is manifested in various ways. Thus we have many surgeons objecting to buried sutures for the reason that they are very apt to be extruded. We have, again, various devices for bringing together the edges of the skin so as to avoid if possible the occurrence of stitch abscesses. We have the abandonment by surgeons of many useful materials, such as catgut, marine sponges, &c., on account of the supposed difficulty in disinfecting them, the idea being that nothing but heat is a trustworthy disinfecting agent. To show how this fear of the danger of infection, which can only be inspired by experience, affects the conduct of an operation, I may mention that I have more than once had remarks made to me by distinguished visitors as to the mode in which I deal with the sac in performing radical cure of hernia. In the great majority of cases, for reasons which I need not go into here, I twist the sac and push it upwards under the abdominal wall, and the objection that is made is that in leaving a sac so tightly twisted as I do I am leaving a piece of dead tissue which will lead to suppuration. I can only say that in my experience this has not occurred, and that even if it were dead, which I doubt, to leave a piece of dead tissue, provided that it is aseptic, is a matter of little or no consequence from the point of view of infection, provided the measures employed for keeping out bacteria are really efficient.

In yet another direction I notice the way in which the experience of those who employ this aseptic treatment affects their practice—viz., that they hesitate in doing things which can readily be done safely and which ought to be done. For example, quite recently a distinguished orthopædic surgeon, in speaking of "tuberculous abscesses," stated that "numbers of children die in consequence of the routine opening of tuberculous abscesses," and he holds that better results are obtained if these abscesses are not, as a rule, dealt with at an early period. This is quite contrary to our experience, and is, to my mind, only another example of the failure of the so-called aseptic methods. That these methods should fail in such a condition as a psoas abscess is only what one would expect, because there we are dealing not with an opening in the tissues, lined by healthy tissue with its strong anti-bacterial powers, but with a cavity containing putrescent material, the walls of which are themselves composed in great part of degenerated devitalised tissues. That is just the sort of case where we would expect failure and it is evident from the passage I have quoted that this expectation is correct. On the contrary, the success obtained by dealing early with psoas abscesses was one of the points of which Lord Lister was always most proud, and we, who have been his immediate pupils, find that this success can still be obtained even to a larger extent than formerly.

I have referred to the results obtained at St. George's Hospital, as published in THE LANCET of Nov. 27th, and I may now make a few remarks with regard to them. In the first place, it seems to me that the gentlemen who collected the results are quite satisfied with them, and in fact they end their paper by saying that "We hope that these statistics will prove useful and of interest to the practitioner, and help him to give a patient a fair idea of the average chance of aseptic healing in the commoner operations." The main object of the paper appears to be to contrast the results which they obtained at St. George's Hospital in the first place when they employed antiseptics, in what way is not exactly stated, and in the second place since some alteration was made in regard to the use of antiseptics. It is not really clear from the paper what the alterations were, but in any case the results as obtained in 1906 by the methods then employed, which they speak of as antiseptic methods, were 13·6 per cent. of septic cases, falling in 1908 under improved methods to a percentage of 7·2 of septic cases. As the details of the two plans are not fully given I cannot criticise them, but it strikes me that probably the whole difference in the results is accounted for by the fact that in the second period nearly all the surgeons used rubber gloves; in the earlier period this was apparently not the case. There is no doubt that boiled rubber gloves are of the greatest value where the methods of disinfection of the skin and especially of the hands, are faulty, and I believe that this point forms practically the essential cause of the difference between the results in the two years which are contrasted, and not the question of the use or disuse of antiseptics.

The authors, in addition to mentioning the total cases, refer especially to five groups, and these show very interesting results. Taking the 1908 statistics, the class of cases in which the best results are noted was apparently operations for quiescent appendicitis where the percentage of septic cases is only 3·3 per cent. This agrees with what we are now thoroughly familiar—namely, that the peritoneum has a power of dealing with bacteria which may come in contact with it in a way which is not equalled by any other tissue of the body. The opposite extreme is given by the operations on the breast, where the percentage of septic cases reaches the large amount of 12·2. This result is exactly what I should have expected. Operations for cancer of the breast are extensive operations and take a very considerable amount of time, and thus on the one hand ample opportunity is afforded for infection of the wound where no sterilisation of instruments or hands, &c., takes place during the course of the operation, while the tissues which are dealt with have not nearly the efficacy as bactericidal agents which the peritoneum has.

I think that Mr. Pendlebury and Mr. Back are to be congratulated on the very careful way in which they have gone into the hospital records and on the very fair way in which they have stated the results which have been obtained. In my opinion, however, if these are the best results that can be got by the recent aseptic methods the sooner they are abandoned and their place taken by a line of treatment in which the main attention is paid to the bacteriological problem the better for the well-being of the patient and the ease of mind of the surgeon.

I may say that the paper to which I am referring has created a great deal of interest and excitement among the junior staff (house surgeons, &c.) at King's College Hospital, and I was very much gratified to find that on their own initiative, and without any suggestion on my part, they had gone into the results which have been obtained in my wards since the beginning of 1901, and to my surprise and pleasure I have received from them complete and very carefully worked out statistics of all the clean cases on which I have operated during that period, the results of which I have verified and shall now produce. I may say that these statistics have been put together on the same lines as the statistics at St. George's Hospital, which I consider to be the correct ones—that is to say, they are only statistics of clean cases; in other words, of cases where the surgeon had unbroken skin to start with and where in the course of the operation he did not have to open any mucous cavity, nor did he come into contact with any focus which was the seat of septic infection. For example, intestinal resections, gastro-enterostomies, operations on the gall-bladder and bile ducts, renal calculus, &c., are excluded, and of course all operations on the rectum, bladder, urethra, mouth, throat, abscesses, septic sinuses, &c. I am very much struck by the large proportion of these cases as contrasted with "clean" cases which occur in one's hospital work.

The numbers work out at a total of 1028 clean cases operated on during the eight years, and of these 19 are classed as becoming infected. It is, however, very doubtful whether several of these 19 cases should be included as I shall mention immediately.

Dividing the cases into classes as in the St. George's Hospital statistics, the numbers come out as follows :—

—	Cases.	Infected.	Percentage of infection.	Percentage of infection in the St. George's Hospital cases in 1908.
Radical cure of hernia	235	4	1·7	9·6
Excision of the breast	112	2	1·8	12·2
Operations on the thyroid gland	28	0	*Nil.*	6·2
Operations on the male genital organs	51	2	4	6·5
Operations for quiescent appendicitis ...	89	1	1·1	3·3
Miscellaneous	513	10	1·9	6·3
Total	1028	19	1·8	7·2

The miscellaneous cases include, for example, 91 operations on bones (recent fractures, ununited fractures, deformities, tumours such as exostoses, &c.), 17 operations for tuberculous disease of bone where there was no external opening, 31 operations on joints (chiefly displaced or loose cartilage), 17 operations on tuberculous joints (arthrectomy, excision, &c.), 32 clean laparotomies (ovarian tumours, enteroptosis, explorations, adhesions, &c.), 14 amputations (excluding amputations for gangrene), 73 operations for tuberculous glands (all very extensive and prolonged operations), 22 operations for malignant glands, 20 operations on the kidney (nephropexy and nephrectomy), 17 cases of spinal abscess, 80 operations for varicose veins (usually five or six wounds in each case), and a variety of other cases.

From the above figures it will be seen that there is a very marked difference between our results and those obtained at St. George's Hospital. Had the results been the same as in that hospital, instead of 19 septic cases we should, according to their 1906 statistics, have had 140 septic cases, or, according to the improved results of 1908, the numbers ought to have been 74.

Apart from mere numbers, it is interesting to note why and when the cases became septic. I shall therefore run over the various cases.

Hernia (4 Cases).

1. Case of large ventral hernia in a very fat woman; a drainage-tube was inserted at the time of the operation. In this case there was no sign of infection till the ninth day. No doubt the infection in this instance entered through the drainage-tube subsequent to the operation.

2. Case of large ventral hernia in a woman. Here the course at first was quite aseptic. The wound was dressed and the stitches removed at the end of a week; on the sixteenth day the dressing was again changed and a collection of serum was seen to be present. A tube was therefore inserted. Three days later the fluid coming from the tube was somewhat turbid. No doubt infection through the tube.

3. A little child, 2 years old, with strangulated hernia and muddy fluid in the sac. He also fouled his dressings. Slight suppuration. It is a question whether this case should be included among clean cases, as we know that in a very short time after strangulation the fluid in the sac contains bacteria.

4. Also a child and also soiling of dressings. In this case I had to remove the deep stitches before healing occurred.

Male Genital Cases (2 Cases).

5. Case of boy with undescended testicle, in which I brought down the testicle and secured it to a wire cage by a stitch passing through the lower end of the scrotum, in the manner which I described some years ago. When this stitch was removed 10 days later there was a drop of pus at the point of exit. Immediate healing.

6. Hydrocele and hernia. Sac of hydrocele dissected out and radical cure for hernia. Drainage tube put into the lower end of the scrotum, but in spite of that a considerable hæmatoma formed. Drainage tube left out after eight days. At the end of 14 days blood-clots with which some pus was mingled were squeezed out. Here sepsis through drainage-tube subsequent to the operation. It is very difficult to prevent infection when a tube has to be kept in the scrotum for several days.

Quiescent Appendicitis (1 Case).

7. Operation three weeks after a severe attack of appendicitis. First dressing and stitches removed on the tenth day, when some accumulation was found in the wound which necessitated daily dressings for about ten days. The registrar's notes state that it was septic.

Excision of the Breast for Cancer (2 Cases).

8. The operation was performed on Nov. 22nd. First dressing and tube left out on 24th. Next dressing and stitches removed on Dec. 1st, when the wound was healed and everything looked healthy. On Dec. 7th some purulent discharge was noticed coming from the wound which on examination was found to contain staphylococci. Probably a collection of serum in the wound which had become infected through a stitch track.

9. Here the tube was left out on the second day. At the second dressing on the sixth day some pus was found and the tube was reinserted. The sepsis was quite mild, the temperature only once reaching 100·4°.

Miscellaneous Cases (10 Cases).

10. Intermittent hydronephrosis, in which I performed the plastic operation on the pelvis of the kidney, described by me in THE LANCET in 1907. The wound healed well, and we were about to discharge the patient, when, 25 days after the operation, he was jumping about in bed (it was Christmas time) and suddenly felt severe pain in the loin. This was followed by fever and the formation of a swelling, which, when opened, was found to contain urine and pus. It quickly healed with drainage. I think that during his violent movements some point in the line of union of the pelvis of the kidney gave way and urine was extravasated. I doubt, however, whether this case should come among clean cases. The urine was not examined bacteriologically before the operation, but we know that in many of these cases bacteria are present in the urine.

11. Bad club-feet in a child. The astragalus on each foot was removed. Both sides healed by first intention, but on one side a little point in the scar broke down on the twelfth day, and was some days in healing. At this point the skin had been a good deal bruised by the retractor, and if organisms were really at work in causing the breaking down (there was no suppuration) they probably entered through the injured skin rather than at the time of the operation;

indeed, it is doubtful if this case should be included among the septic cases.

12 and 13. Two cases of tuberculous glands in the neck. One of these cases had acute tonsillitis at the time of the operation, and there is a note by the registrar that the glands when removed were infected. There were also difficulties with the anæsthetic, and the administrator's fingers and the saliva were dangerously near the wound. In the other case infection must have occurred at the operation as pus containing streptococci was evacuated on the second day.

14 and 15. Two cases of operation for un-united fracture of the femur. In both cases drainage tubes were used. In one the wound went on quite well till the tenth day, when the dressings were soiled with an enema and fæces, and this fact was not at once reported. Suppuration, though limited in amount, occurred. In the other case the right femur had been fractured about its middle on three different occasions and there were great deformity, stiffness of the knee, and a large swelling at the seat of fracture. The operation was very extensive and was accompanied with a good deal of bleeding. Two deep-seated vessels could not be tied readily and it did not seem advisable to prolong the operation. Hence Spencer Wells forceps were left on the bleeding points for two days, the wound remaining open at that part. Suppuration was evident on the fifth day. Considering all the difficulties of the case this result is not surprising.

16. Excision of the elbow-joint for ankylosis after acute osteomyelitis of the humerus 5 years previously. For 3½ years sinuses had remained open and various operations had been performed for the removal of dead bone. These sinuses had, however, healed 18 months before the present operation. Suppuration was evident on the fifth day.

17. Excision of hip. This was a case of excision in a man who had a most remarkable series of deformities in the way of stiff and distorted joints after an acute illness. There were numerous pustules on the skin and it was very difficult to keep him clean; in fact, the operation was delayed so as to let the pustules heal. The hip was excised so as to give him movement in one joint and a drainage-tube was inserted, but the wound suppurated.

18. Tuberculous deposit in lower end of the tibia. This was the case of a tuberculous deposit in the lower end of the tibia, which was thoroughly cleared out, and the large cavity in the bone was filled up with pieces of decalcified bone. These were supplied by the instrument maker in alcohol and were used as delivered. Sepsis at once occurred, but the wound healed rapidly after removal of the decalcified bone.

19. Stitch abscess after nephropexy. Wound closed without drainage. Stitches removed on ninth day; there was pus along the middle stitch tracks.

Analysing these cases, we may note in the first place that it is very doubtful whether two (Nos. 3 and 10) really come under the category of clean cases; however, as they have been given to me, I put them in. In one (No. 11) the sepsis was doubtful. In No. 12 the glands were probably infected at the time of the operation. In three of the cases sepsis followed soiling of the dressings with fæces and urine (Nos. 3, 4, and 14). Further, it may be noted that in many of the cases the sepsis was very slight, and in none did it lead to any serious consequences; in fact, I may say that none of the 1028 clean cases died.

A point of importance is that in seven of the cases (Nos. 1, 2, 8, 9, 14, 15, 17) drainage tubes were inserted at the time of the operation. In very fat people (e.g., the ventral hernia cases) and in very large wounds (e.g., breast cases) I think it is advisable to introduce a drainage tube for a few days so as to prevent the collection of serum which is otherwise apt to form. This, however, increases the septic risk because it means several dressings, and at each of them septic infection of the tube may occur unless the dresser is very careful. In our list there were seven cases in which infection showed itself late, and in six of these it in all probability entered through the drainage opening and not at the time of the operation.

Cases of sepsis after wounds fall under two heads—viz., those where infection takes place at the time of the operation and those where it occurs afterwards. In the above list the cases where the infection almost certainly occurred during the operation were six in number—viz., 7, 12, 13, 16, 17, and 18). This gives an operation sepsis of 0·6 per cent.

A most important point to be noted is the conditions under which these results were obtained. In the first place we have only one operating theatre, used by all the surgeons and for all cases, septic or otherwise, and also used for lectures. Our theatre is very much as it was built and fitted out some 60 years ago. With the exception of a tesselated floor we have none of the modern arrangements; in fact, I expect it is the worst operating theatre in any of the large London hospitals.

Another and very important point is that the after-dressing of the cases is left to the house surgeon; indeed, in most cases, if I have a very full afternoon, I leave the stitching up of the skin wound to the house surgeon while I get on with the next case. Of course, a house surgeon, however excellent, is only a beginner, and to him the precautions necessary to procure an aseptic result are not yet automatic; he has constantly to think what he is about from an aseptic point of view, and I think it is very remarkable that the number of septic cases has been so few when we remember that the men change every six months, and that during these eight years there have been 17 house surgeons and sets of dressers. Fortunately there is a very healthy spirit of rivalry among our house surgeons. We have three house surgeons, one for each full surgeon, and they are very strong partisans, each trying to show better results than the others. When a house surgeon takes up his appointment he sets two chief aims before him. The first is to put a larger number of cases through his wards than the others, and the second to show better results, more especially as regards asepsis. With the first aim I have no sympathy whatever. I do not see why I should be overworked simply in order that my staff may crow over the others. The second aim, on the contrary, I encourage in every way. It means that the men take their work more seriously: it develops habits of care and thoughtfulness, and it trains them to regard the aseptic treatment of wounds as a matter of paramount importance. Each faction watches the others most closely, and if suppuration, however slight, occurs in any case we very soon hear of it. I venture to think that this is a spirit which should be very carefully fostered. Without it, indeed, I could not leave the after-treatment of the wounds to the house surgeon with any degree of comfort.

I may also draw attention to one point which shows very convincingly to what an extent the asepticity of the results depends on the personal equation. The cases were given to me arranged in years, and I find that in four of these years there was 1 septic case each year, in two years there were 3 septic cases each year; in one year there were 4 septic cases, and in one there were 5. These two years in which 9 septic cases occurred, nearly half the total, were consecutive years, and for a time I was puzzled to account for this large proportion of failures. It occurred to me, however, to note the dates of admission of these 9 cases, and I then found that 7 out of the 9 occurred under the care of one house surgeon. As I had 17 house surgeons during these eight years this leaves 12 septic cases to be distributed among 16 men. As a matter of fact, several house surgeons had no septic case during their term of office, some had one case, and some had two.

I do not put these results forward as an example of the best that can be obtained; in these cases much has been left to beginners, and I think they are to be congratulated on the careful way in which they have done their work. But as experience and skill increase the precautions necessary to secure an aseptic result become more or less automatic; one feels instinctively if anything is wrong, and failures become more and more only the result of accidents.

One other point is shown by these facts—viz., that the extravagant amounts which are sometimes expended on operating theatres, fittings, &c., are to a large extent unnecessary. I have no objection to a nice well-fitted operating theatre at all, but things are sometimes carried to an extreme, and the operating theatre is apt to assume an undue importance in the eyes of those using it. Our operating theatre and arrangements cannot compare for a moment with those at St. George's Hospital, and yet they get four times as much sepsis as we do.

I think that the above facts show that there is a great deal more in the treatment of wounds than simple cleanliness and the avoidance of irritation. I do not believe that a surgeon will get the best results unless he takes the view that suppuration in clean wounds is avoidable, and that the way to avoid it is to look on the treatment of a wound as a bacteriological problem, and to act accordingly.

Harley-street, W.

A CASE OF POSTURAL ALBUMINURIA IN A BOY THE SUBJECT OF CHOREA.

BY JUDSON S. BURY, M.D. LOND., F.R.C.P.,
PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY;
AND
J. F. WARD, M.B., CH.B. VICT.,
HOUSE PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY.

A COPIOUS literature has gathered round the subject of postural albuminuria, a designation first proposed by Dr. A. W. Stirling to indicate that the most constant factor to be observed in cases of albuminuria in apparently healthy persons is the assumption of an upright position; in other words, the presence of albumin is determined by the erect posture of the body and independently of food and all other conditions. As a more correct designation for this variety of albuminuria Heubner suggested the word "orthostatic," a term which at the present time is most commonly used by continental writers.

Two years ago it was pointed out by Jehle that the presence of albumin is not directly due to a change of the trunk from a horizontal to an erect posture, but to lordosis of the lumbar spine, and he suggested that the term *albuminurie lordotique* should be substituted for that of *albuminurie orthostatique.* He showed that the usual relation of albuminuria to posture could be reversed by altering the curvature of the lumbar spine. Thus, if the urine of a patient when lying in bed contained no albumin, the presence of this body could be determined by producing lordosis by means of a cushion placed for a few minutes under the lumbar spine. Conversely the occurrence of albumin in the urine voided when the patient was out of bed could be prevented by getting him to lean forwards whilst standing or walking, thus producing a kyphosis in place of the lordosis natural to the erect posture. Jehle attributes the albuminuria to pressure on the inferior vena cava which leads to a venous stasis in the kidneys. He believes that the erect posture has a bearing on the production of albuminuria only in so far as it leads to venous stasis, and that in normal individuals this stasis is too slight to cause albuminuria. But both Bruck and Schmiedicke claim to have produced it in perfectly healthy adults by means of factitious lordosis.

Nothmann examined the dead body with a view to investigate the influence of lordosis on the position of the kidneys. Sections were made of the body, fixed by freezing in a position of lordosis. He found that the projecting bodies of the lumbar vertebræ caused a separation of the kidneys and a slight rotation on their vertical axes, so that their median sides were pushed forwards, thus stretching the renal vessels. Such changes in position if they occurred during life would tend to retard the circulation of blood through the kidneys. This view is corroborated by similar experiments made by Turrettini. Nothmann, who has studied the influence of lordosis in children suffering from scarlatinal nephritis, finds that the quantity of albumin varies to some extent with the degree of curvature imposed upon the lumbar spine.

It is stated that in postural albuminuria the erect attitude also determines a considerable diminution in the quantity of the urine. Turrettini found a difference of nearly a half between the amount of urine passed during 12 hours in a horizontal and during 12 hours in a vertical position; and the result was the same whether the patient passed the day or the night in bed. Thus if he stayed in bed during the day and was up and about during the night there was nocturnal instead of diurnal oliguria.

Orthostatic albuminuria is chiefly met with in children between 10 and 13 years of age, a period at which growth is proceeding rapidly, and which is likely to be attended by weakness of the muscular system and undue flexibility of the spinal column, both of which conditions would tend to exaggeration of lordosis in the erect posture. Many authorities, however, attach less importance than Jehle and others to the mechanical interpretation of orthostatic albuminuria. They admit that venous stasis is the cause, but attribute this rather to a general lowering of arterial tension than to the results of local spinal pressure. They point out that the subjects of orthostatic albuminuria are usually anæmic, easily fatigued, and possess susceptible vaso-motor systems. Hence in them there is a greater disproportion than in normal persons between the blood pressure of the erect and that of the horizontal posture. It is also stated that the albuminuria of interstitial nephritis with cardiac hypertrophy and increased arterial tension is not influenced by posture, whereas that of parenchymatous nephritis in cases where the arterial tension is lowered may vary with changes in the position of the body.

The question of the relationship of orthostatic and other forms of cyclic albuminuria to nephritis has been much discussed. By most authorities two classes are recognised. In the one class there is no evidence either of a past or a present renal lesion. In the other class there is evidence that the postural albuminuria is symptomatic of an infectious nephritis. It is admittedly difficult to draw a sharp clinical boundary between the two classes. Aubertin believes that the more carefully the subject is studied the closer appears the connexion between orthostatic albuminuria and nephritis.

The opposite view is strongly held by Teissier, who says that true orthostatic albuminuria, although rare, constitutes a distinct type which clinically presents marked differences from the symptomatic form. He believes that the true form is related to an incomplete development of the glomerular apparatus and may be compared to the albuminuria sometimes met with in young infants, which was attributed by Virchow to a late or insufficient development of the glomeruli. Teissier says that it occurs in children with perfectly healthy kidneys, in whom diet or fatigue has no influence in producing albuminuria, this being entirely dependent on a passage from the horizontal to the vertical posture. He says that the urine is pale and shows an abundant deposit of mucus; no renal elements can be detected. The albumin is almost entirely serum albumin; if any other proteid is present it is nucleo-albumin, and only very rarely is there a small quantity of globulin. According to Teissier, one of the most characteristic features of this idiopathic type is the perfect permeability and functional activity of the kidney as shown by the phloridzin test, a hypodermic injection of this substance being constantly followed by an adequate degree of glycosuria. On assuming the erect posture this serum albuminuria appears within ten minutes, and on returning to the horizontal position the quantity of albumin gradually diminishes, and in 45 to 50 minutes the urine is quite normal. Standing still has more influence in producing albuminuria than walking about, and violent exercise often leads to its disappearance, whereas in the symptomatic type exercise and fatigue cause an increase in the amount of albumin. The subjects of true orthostatic albuminuria are frail, light in weight, and show neuropathic tendencies; their arterial tension is low, and they are liable to catarrhs and to cold, bluish extremities.

Teissier's arguments, based mainly on the peculiarities just enumerated, do not appear to us very convincing. Serum albumin is the chief constituent of the albumin due to nephritis. The phloridzin test has given a positive result in some cases of nephritis, as in that following scarlet fever. But even if the features mentioned by Teissier are not pathognomonic it is impossible to deny that occasionally a true orthostatic albuminuria occurs when not even a suspicion of nephritis can be entertained; witness, for example, a case observed by Dixon Mann and recorded by him in his book on "The Physiology and Pathology of the Urine."

Furthermore, the important researches of A. E. Wright and G. W. Ross have shown the possibility of discriminating the albuminuria which occurs independently of renal disease from that which is due to such disease. For the technique of their methods we must refer to their original paper. They took as their criterion (1) the percentage of salts in the urine, and (2) the excretory quotient. By the latter is meant "the expression for the efficacy of the kidney, which is obtained by dividing the salt content of a patient's blood into the salt content of his urine," the formula being: minimum dilution of the urine which effects complete hæmolysis, divided by minimum dilution of the serum which effects complete hæmolysis. In physiological albuminuria they found that the percentage of NaCl in the urine and the excretory quotient were fully equal to those obtained upon healthy persons, contrasting markedly with the results obtained in connexion with renal disease. They also found that the administration of calcium lactate increased the coagulability of the blood in both varieties of albuminuria, but whereas it caused a disappearance of albumin in cases of physiological albuminuria it did not diminish the output of albumin in cases of albuminuria dependent on renal disease.

In the following case recently under our care there was no direct evidence of nephritis, although the possibility of its existence was difficult to exclude.

A boy, aged 12 years, was admitted to the Manchester Royal Infirmary on Sept. 6th, 1909, suffering from chorea. At the age of six years he had an attack of "diphtheria"; this was followed by weakness of the legs, which was made worse by an attack of "influenza" a year ago. Last June his face began to twitch and two months later his arms and legs were also affected with choreic movements. On admission these movements were observed in the face and in the hands and feet; they were slight in degree. The strength of the arms was good, that of the legs at hip, knee, and ankle was reduced; the weakness was general, no group of muscles being specially affected. The knee-jerk was normal. The boy was thin and his face was pale and somewhat puffy. His heart was normal; there were no signs of rheumatism. He was put on "ordinary diet" and given a mixture containing iron and arsenic. In a few days the choreic movements ceased and about ten days after admission he was allowed to get up. It was then noticed that his urine, which previously had been normal, contained a trace of albumin. He was put back to bed and given milk only, when the albumin disappeared. After being in bed for two days he was allowed to get up for four hours, when the first urine he passed contained albumin. The next day he remained in bed, and the urine was free from albumin. He remained in bed the three following days and took "ordinary diet," and on one of these days two eggs. Still his urine, repeatedly examined, contained no albumin. Subsequently the experiment of keeping him in bed for a day, and then allowing him to get up and walk about the ward, was repeated very frequently for some time. The result was always the same. When he was in bed the urine voided contained no albumin; after he had assumed the erect posture a trace of albumin was always found. The amount of albumin varied from the slightest haze to a distinct trace; nothing abnormal was seen under the microscope; there were no casts and no crystals.

On Oct. 25th, the patient being in bed, artificial lordosis was produced by placing a doubled-up pillow under his loins and removing the pillows from beneath his head. This posture was maintained for ten minutes, then the boy passed urine; this showed a trace of albumin, although that voided before the experiment was free from albumin. The experiment was repeated on several occasions but the results were not constant, sometimes the factitious lordosis was followed by albuminuria, sometimes no albumin could be detected. On Oct. 25th the blood pressure was taken by means of a Riva-Rocci sphygmometer and found to be 95; on Oct. 27th it was 100. A blood count was as follows: red cells, 4,624,000; white cells, 8000; hæmoglobin index, 0·9. Blood films showed nothing abnormal. On the same day the coagulation time was kindly estimated by Dr. G. E. Loveday and found to be slightly prolonged; at 37·5° C. the blood clotted within $2\frac{3}{4}$ minutes, the normal time being about 2 minutes.

Treatment by arsenic and iron and the application of massage and electricity to the legs was continued till Nov. 4th, when the boy left the hospital greatly improved in health; his face was still pale, but he was fatter and could walk much better.

In the above case there were no grounds for believing that the association of chorea with albuminuria was other than accidental. With regard to the possibility of nephritis, the only evidence was the pale puffy face, together with a history of diphtheria and influenza. The urine, apart from orthostatic albuminuria, was perfectly normal.

Bibliography.—Aubertin: Semaine Médicale, 1906. Bruck: Verein der Südwestdeutschen Kinderärzte, 1908. Heubner: Berliner Medicinische Gesellschaft, 1906. Jehle: Münchener Medicinische Wochenschrift, 1906; also Thesis Wien, 1909. Nothmann: Archiv für Kinderheilkunde. 1909. Schmiedicke: Münchener Medicinische Wochenschrift. 1908. Stirling. A. W.: THE LANCET, 1887, vol. ii., p. 1157. Teissier: Revue de Médecine, 1905. Turrettini: Ibid., 1909. Wright, A. E., and Ross, G. W.: THE LANCET, 1905, vol. ii., p. 1164.

THE DIAGNOSIS AND TREATMENT OF DUODENAL ULCER.[1]

BY B. G. A. MOYNIHAN, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE LEEDS GENERAL INFIRMARY; PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF LEEDS.

CHRONIC DUODENAL ULCER.

THERE are few diseases the symptoms of which appear in such a definite and well-ordered sequence as is observed in duodenal ulcer. It is true that there are cases, of which fuller details must presently be given, in which the regular appearance of the symptoms is absent, or in which one symptom is so exaggerated as to dwarf, or even destroy, the value of others. But these exceptions are few, and they do not belittle the value of the general statement that the symptoms of duodenal ulcer are definite and not easily to be mistaken, and that they appear in an order and with a precision which are indeed remarkable.

The patient may date his complaint from an early period in his life. It is not very uncommon for a man, in answer to the question as to how long he has suffered, to reply, "All my life." A man, aged 61 years, upon whom I operated had first experienced symptoms at the age of 19; others had symptoms "as long as they could remember." This goes to show that the ulceration may begin at an early period in life, and the symptoms may, with periods of repose, continue up to middle age or even to advanced years. As a rule the patient is in middle age, from 25 to 45, and males are more frequently affected than females. If the earlier history is well remembered the patient will say that insidiously, almost imperceptibly, he began to suffer from a sense of weight, oppression, or distension in the epigastrium after meals. At the first the discomfort may apparently be capricious, but it is not long before notice is taken of the fact that it comes usually two hours or a little more after food has been taken. Immediately after a meal there is ease; if pain or discomfort were present before, the meal relieves them and banishes them completely for a time. Then, again, the pain is felt in two hours, three hours, four hours, or sometimes even six hours later. As a rule the pain comes gradually, and gradually increases, becoming more severe and being accompanied by a sense of fulness, distension, a "blown out" feeling; there is an eructation of bitter fluid or of gas, which affords relief. The interval between the taking of food and the onset of the pain is very remarkable; it is constant from day to day if the character and quantity of the food remain the same. If the food is entirely liquid the pain comes rather earlier; if it is heavy, solid, "indigestible," the pain comes later; with an ordinary meal, of liquid and solid, the pain very rarely appears in less than two hours.

Many patients will volunteer the statement that the pain commences "when they are beginning to feel hungry," and I therefore suggested in one of my early papers the term "hunger pain" as descriptive of this particular symptom. The pain as a rule is noticed at first only or chiefly after the heaviest meal of the day. If dinner is taken between 1 and 2 P.M. the pain will come with unvarying regularity at, or near, 4 P.M. For a long period this may be the only time of day when discomfort is felt, but later in the attack, or in subsequent attacks, it is noticed that after every meal the pain comes at its characteristic interval, that by every meal the pain is relieved, only to return in due time. When inquiry is made from a patient as to whether food causes the pain he will not seldom answer "Oh! no, food always makes the pain better; the pain comes when I am beginning to feel hungry." It is a very characteristic feature of the pain that it wakes the patient in the night, and constantly the time of the waking is said to be 2 o'clock. The relief of the pain by food, quickly realised by patients themselves, leads to the practice of keeping near at hand a biscuit or some other food or drink which can be taken at once. Many patients carry a biscuit in the pocket or have a glass of milk and a piece of bread and butter ready at certain times to be taken at the moment of the onset of pain. It is a common experience to find that patients place by their bedsides some food to be taken in the early hours of the morning when the pain awakens them. The regular appearance of the pain after definite intervals from the taking of food is remarkable and is consistent.

---

[1] A paper read at the Royal Society of Medicine on Dec. 14th, 1909, opening a joint debate in the Surgical Section

The pain is often preceded or accompanied by a sensation of weight or of fulness and distension in the epigastrium ; it is described as "boring," "gnawing," "burning." It may be relieved by belching, and constant efforts are often made to bring about the eructation of gas, which is followed by momentary relief. Sometimes there may be a slight regurgitation of food and the patient complains that the taste of this is bitter or acid ; the throat then feels hot or as if scalded, and the teeth are said to feel as if made of chalk. A few patients complain that when the pain is beginning to develop a free gush of saliva may occur. The swallowing of this may give temporary relief to the pain. In some cases the flow of saliva may be copious and distressing.

For long periods, sometimes throughout the history of the case, the pain remains confined to the epigastrium, but it may strike through to the back or pass round the right side. When the pain is severe relief is often gained by pressure, and I have known patients, wakened in the night, to hug a pillow to the abdomen to obtain relief in this way. On some occasions, though this is infrequent, the pain is said to be "cramp-like" in character, a sort of spasm is felt with exacerbations and remissions, as in all forms of "colic." It is very probable that a spasm of the pylorus, protective, no doubt, in its character, is actually present ; for such a condition may, as I pointed out several years ago, be witnessed during the conduct of an operation. The pyloric muscle hardens by degrees until a state of firm contraction is reached, when a solid cylindrical whitish mass forms, which imparts a feeling similar to that experienced when the normal uterus is handled. The spasm slowly passes away and the stomach assumes its normal appearance. This sensation of cramp is often accompanied by a feeling of great epigastric distension. I have twice seen this cramp well marked in patients who were operated upon under local anæsthesia only ; they both described their sensations at the moment as one of "bursting" and "distension." [2]

Throughout the whole period during which the pain is felt the appetite remains good. In many cases the patient volunteers the statement that he feels a keen relish for his food, takes it with good appetite, and enjoys it. Frequently he eats less than he feels he would enjoy because experience has taught him that excess, or even satisfaction, is apt to be followed by an increase of pain, or pain of a more enduring character. Fluid food when taken to the exclusion of all solids often causes the pain to come earlier after food and to last longer than when the ordinary meals are taken. A patient will often say that he feels worse when he is strictly dieted in this way ; but, as a rule, persistence in liquid diet, especially during the earlier stages of the disease, will bring relief after a time. Vomiting is very infrequent ; it is rarely present until stenosis develops ; and stenosis appears only in the later periods when the ulcer or ulcers are healed. The majority of the patients upon whom I have operated have never vomited.

These are the characteristic symptoms described by the patient in the anamnesis. Upon them alone a confident diagnosis of duodenal ulcer may be made. Perhaps the most characteristic feature of duodenal ulcer is the periodicity of the symptoms and their recurrence from time to time in "attacks," their complete abeyance in the intervals. A patient who has suffered for years will say that an "attack" comes on as a result of exposure to cold, or getting the feet wet, or a hasty or "indigestible" meal, or worry, or overwork. A cause can almost always be assigned for the onset of symptoms ; a recurrence of the cause is always followed by a reappearance of the symptoms. The most common of all these causes is "getting cold" ; in consequence the great majority of the patients will say that the attacks are especially prone to come in the winter months—December, January, or February. In the summer the symptoms are almost always absent. One patient of mine was perfectly well for three years when in India. He returned to England in November and within a fortnight had "caught a chill" and all the symptoms returned.

The "attacks" vary in length from two to three weeks up to several months. It is remarkable that an attack may frequently be cut short by a few days' rest in the country or at the seaside. Two of my patients, medical men, told me that a "long week-end" at the sea, with plenty of open-air exercise, free from the anxieties of practice, would always cut short an attack in the earlier years of their trouble. In the end the pain may become a matter of daily experience, but it still retains its characters as I have described them. In the intervals between the attacks there is complete immunity from suffering, food is taken with full enjoyment and with keen zest ; there is no discomfort of any kind ; weight is gained and mental and bodily vigour are at their highest. So complete may the recovery be that the very suggestion that the former attacks have been due to organic disease may be scouted or received with the tolerant smile of disbelief. The explanation is given that there has been "hyperchlorhydria" or that the case is one of "acid dyspepsia" or possibly of "neurosis." The idea is deep-rooted that the symptoms are due to an excessive acidity in the gastric juice, but as I shall presently show there is no foundation in fact for this venerable fallacy.

These symptoms, so perfectly characteristic of duodenal ulcer, may be present for years without producing any physical signs. It is therefore not necessary to the attaining of an accurate diagnosis that any examination of the patient be made. The anamnesis is everything, the physical examination is nothing. There is, in the stage when the presence of the ulcer should be recognised, no single physical sign indicating the presence of organic disease. Signs which confirm the accuracy of the diagnosis may appear later, but there is no need to await their arrival before making, as we can make with the utmost confidence, an exact diagnosis.

In a rather later stage dilatation of the stomach with motor incompetence may appear. The stomach, that is to say, is unable to empty itself completely within the normal period of time. What would be considered a "normal period" is not agreed upon by all writers. I have arbitrarily adopted the period of 12 hours. If a stomach is not able to empty its contents into the duodenum within 12 hours it is very probable that there is organic disease which prevents it doing so. Gastric stasis, then, may be found in cases of duodenal ulcer ; it is due always to the narrowing which occurs by reason of the healing, partial as a rule, but sometimes complete, of the ulcer or ulcers. I have never found that stasis of this degree was present as a result of pyloric spasm. It is possible that a spasm of the pylorus prevents the stomach from emptying as quickly as it otherwise would do, for the spasm no doubt exists because of the need for protection of the ulcer of the duodenum from the harm which contact with the acid chyme would inflict. The spasm is reflex and is protective, as was so beautifully shown by Cannon and Murphy.[3] But a spasmodic contraction of the muscle which guards the outlet does not prevent the stomach from emptying within the period of 12 hours. Its occurrence is probably protective also in the fact that it arouses symptoms the mere presence of which makes the patient less eager to take food in full quantities. Gastric stasis denotes, therefore, the existence of a narrowing in the duodenum due to organic disease. When this narrowing attains even a very moderate degree, a hypertrophy of the musculature of the stomach develops, as always happens in the alimentary canal ; and the evidence of this may be found in the peristaltic waves visible when the stomach is examined. If the stomach is empty or only partially filled these muscular contractions may not be seen, but the administration of the two halves of a seidlitz powder separately will soon excite them.

In all cases of duodenal ulcer, indeed, in all cases of intractable stomach disorder, a test-meal should be given. There are a number, by no means inconsiderable, of patients who have been referred to me as cases of "hyperacidity," "acid gastritis," upon whom I have operated and have demonstrated the existence of a duodenal ulcer. Recurrent severe "hyperchlorhydria" *is* duodenal ulcer. The symptoms of which the patient makes complaint are ascribed to hyperacidity, but it is extremely interesting to know that it is usual for the gastric juice in such cases to be normal ; there is no hyperacidity at all.

It is the rule in intractable cases of so-called "acid dyspepsia" for there to be no hyperacidity, and it is in my experience invariable to find duodenal ulcer in such cases No one is more sceptical than myself in interpreting the appearance of the stomach and duodenum during the course of an operation. I do not believe in the duodenal ulcer which I cannot demonstrate to the most sceptical assistant or onlooker. No "anæmic spots" or trivial, often imaginary, thickenings do I accept as being enough to account for protracted symptoms. The ulcer is always a visible, tangible, demonstrable lesion. And in a large experience I have never operated upon a case of protracted and recurrent "hyperchlorhydria" without finding a duodenal ulcer. In such cases it is rare to find any excess of acidity when a test-meal has been given.

---

[2] I have oftened wondered since this, whether the "colic" described by patients (hepatic colic, renal colic, intestinal colic) is due, as we have always supposed, to the contraction of unstriped muscular tissue ; it is possible that it is rather the result of the distension which occurs behind the segment in which the muscular spasm is occurring.

[3] Annals of Surgery, 1906, 43, 512.

A sign which sometimes appears early in the course of this disease, but which is more often a late symptom, is hæmorrhage. It is, of course, an evidence that the process of ulceration has extended to such a depth as to open up a large vessel, and so deep an invasion of the coats of the bowel is usually accomplished only after the lapse of months or of years. When bleeding occurs in quantity sufficient for it to be recognised as hæmatemesis it is evidence of the deep penetration of the walls of the duodenum by an ulcer whose existence should have been recognised long ago. Neither hæmatemesis nor melæna should be considered as among the usual signs of duodenal ulcer; they are both complications whose onset should have been forestalled; they are a witness to neglected opportunities.

The frequency with which bleeding occurs from a duodenal ulcer has been variously estimated by different authorities. Thus Kraus in the 70 cases collected by him found that in 20 free hæmorrhage had been observed. Oppenheimer in "over 100" cases found bleeding recorded in 34. In Perry and Shaw's series of 60 cases presenting symptoms in a total of 151 cases, hæmatemesis or melæna was present in 23. Nine patients had hæmatemesis, nine had melæna, and five had both hæmatemesis and melæna. In Nothnagel's Encyclopedia (p. 245) it is said that "severe hæmorrhage occurs in about one-third of cases." Fenwick estimates the frequency of hæmorrhage in acute cases at 26 per cent., or in chronic cases at 40 per cent.

All these figures seem to me to be valueless. They are compiled from statistics every item in which is open to disproof or doubt. The symptoms which characterise duodenal ulcer so unmistakeably were unknown to every one of these authorities; the frequency of the disease was therefore quite unappreciated. Only patients who suffered from such complications as stenosis, perforation, or hæmorrhage were known to suffer from an ulcer in the duodenum, and the verification of the diagnosis could only then be made upon the post-mortem table. In my own series of cases hæmorrhage has been noticed in over 30 per cent.

But with the new light which now has been shed upon this important subject by the work of the surgeon we have come to recognise that hæmorrhage is not a symptom but a late complication, that its onset is not to be awaited in order that a doubtful diagnosis may receive confirmation, but that its appearance is to be prevented by a timely recognition of the significance of the early symptoms. Hæmorrhage when it does occur may be manifest either as hæmatemesis or as melæna; the blood may be discharged in the vomit or in the fæces. Melæna may, and indeed usually does, exist without hæmatemesis, but when blood is vomited there is almost without exception some blood also in the stools.

I believe hæmorrhage from a duodenal ulcer to be a sign of grave significance of far more serious import than bleeding from a gastric ulcer. In the latter death very rarely occurs; in the former it is more frequent than is generally supposed. I have thrice had the experience of advising operation for duodenal ulcer in cases where hæmorrhage subsequently occurred and proved fatal before surgical help could be given. Hæmorrhage from a gastric ulcer is sometimes very copious and gives rise to great alarm, but when the bleeding ceases spontaneously the patient recovers quickly. In duodenal ulcer the bleeding causes faintness and anæmia, the exact origin of which may not be obvious till the bowels are moved. Then faintness and prostration come again and again, an abundance of blood, at first black, but later of a brighter hue, is passed, and the patient may rapidly become exsanguine and die.

The manner in which hæmorrhage appears varies much in different cases. As a rule, there is a considerable exacerbation in the symptoms before the bleeding comes; the "indigestion" is more acute, the feeling of distension or oppression after food is greater, and the patient himself does not feel so well. Then suddenly he feels weak and faint and breathless, the head feels light and swimming, and the sight seems quickly to grow dim. The patient looks white, his lips are bloodless, and sweat covers the brow; he asks constantly for air and is breathless; he displays, in brief, all the classical signs of an internal hæmorrhage. That this has occurred is presently made certain by the voiding of blood in the characteristic "tarry" motion or by the ejection of brighter blood in the vomit. In other cases the hæmorrhage may occur insidiously, without the patient having noticed it; he is aware only of a continuing weakness and frailty which he can hardly understand. A case in my own series was an exemplary instance of this. The man was sent to me because of a right inguinal hernia. As he entered my room I was struck with his blanched appearance, and my diagnosis of duodenal ulcer was made before he reached a chair. When I asked him to tell me his symptoms he had nothing to say but that he had a hernia. I asked if he had noticed any loss of blood; he replied in the negative. I inquired whether "indigestion" had been observed, and he said at once that he had "suffered from that for years" and that recently it had been very severe. I took the man into hospital, and found that he had melæna. I elicited then a perfectly clear history of duodenal ulcer. At the operation I found a large chronic ulcer for which I performed gastro-enterostomy. The case has been very successful.

It is probable that a certain degree of hæmorrhage occurs in many cases of duodenal ulcer without being recognised. The surface of the ulcer when fretted probably bleeds a little, and if the stools were carefully and regularly examined traces of occult blood would surely be found. I have in a few cases found this to be the case, but since I have realised how accurately the existence of an ulcer can be recognised from a study of the clinical symptoms alone I have not pursued this line of investigation closely. Occult blood, blood that is in quantities too small to be seen by the naked eye but capable of recognition by other tests, is therefore probably not very infrequent.

The vessels which are opened by the deep invasion of the walls of the bowel by the ulcer vary considerably in size; in proportion to their size the hæmorrhage is slight or abundant. The following are some of the larger vessels which have been eroded, with the result that fatal hæmorrhage has occurred: the aorta, the hepatic, gastro-duodenal, superior pancreatico-duodenal, right gastro-epiploic, and pyloric arteries; the portal and superior mesenteric veins. In a few cases hæmorrhage has been so sudden in onset and so profuse as to cause death which was almost sudden.

When the base of an ulcer from which fatal hæmorrhage has occurred comes to be examined the vessel involved is usually found to have thick and rigid walls. The opening from which the blood has come is at the side of the artery, which remains widely open. There is neither closure nor retraction of the vessel, whose walls, stiff as the stem of a clay pipe, seem incapable of contraction.

Such is a brief description of the characteristic symptoms of chronic duodenal ulcer. If a patient presents these symptoms the diagnosis of duodenal ulcer may confidently be entertained. There is no need for further evidence than that which is so afforded. I constantly operate upon the strength of the history alone, and as often do I demonstrate the existence of a chronic ulcer, a tangible and visible lesion, as the cause of the symptoms. Of nothing concerned with the relationship between altered structure and altered function am I so convinced as that symptoms such as I have portrayed owe their origin to, and are dependent for their perpetuation and their periodic repetition upon, a chronic duodenal ulcer.

Treatment.

In my opinion the treatment of a chronic duodenal ulcer should always be surgical. Chronicity in an ulcer is attested by the recurrence of attacks of a well-defined character. When a series of these attacks have occurred the ulcer is always to be plainly seen and demonstrated; and my experience in a long series of operations is that the conditions in the ulcer, as a rule, are such that nothing but surgical treatment could possibly avail. The ulcer is so large, or so indurated, or the ulcers are so numerous that even if the lesions were to cicatrise completely one of two things would result: either a hard fibrous surface, readily breaking down under provocation, would remain, or a stenosis of the bowel would inevitably follow.

But the question at once arises as to when the case is first to be recognised as surgical, as to when we are entitled to say that medical treatment will probably prove to be of little or no permanent value. What are the conditions present in the duodenum in the first of all the "attacks"? I have at present no adequate means of knowing. I have only once operated in or after a first attack, and so have little evidence upon the point. In this case the pathologist reported that a small fibrous scar was present in the small piece of the duodenum which I had excised. I was myself very doubtful whether an ulcer had been present. I have once operated at the close of a second attack, the patient being referred to me by my colleague, Dr. T. Wardrop Griffith. An ulcer about a quarter of an inch in diameter on the anterior surface of the duodenum was excised. The ulcer was clean, with terraced margins, indurated, and it had destroyed the whole of the muscular coat of the bowel. Though the attack had passed away completely the ulcer was still open and unhealed. In subsequent attacks the ulcer is always to be seen and possesses the characteristic appearance. An ulcer which has caused recurrent attacks has always involved the serous coat, and is accordingly easily to be seen from without.

It is only when attacks recur that a diagnosis of chronic duodenal ulcer can confidently be made; it is only when this diagnosis can be made that surgical treatment is necessary. In a first attack, or even in a second, medical treatment may be tried. But I believe it to be true to say that the significance of the symptoms in these attacks has never yet been fully recognised by the physician. It has not been realised that these symptoms are due to a structural lesion, and consequently (after a diagnosis of "acid gastritis" or "neurosis") treatment has been perfunctory and brief. Up to the present time it is, with the exception of the single case I have mentioned, only after repeated attacks, sustained often over a period of years, that the surgical needs of the case have been recognised. If the first of the attacks be due to a duodenal ulcer, then medical treatment of a sufficiently protracted and careful character should be tried. But when attacks occur in the typical manner I have described the lesion found is of such a nature that anything other than surgical treatment is not worth considering. It is safer, speedier, and more certain than any other mode of treatment.

The surgical treatment of duodenal ulcer may be carried out by (1) excision of the ulcer and restoration of the duodenal canal; (2) excision of a cylinder of the duodenum by closure of the distal end and union of the pyloric cut end with the side of the second portion of the duodenum; (3) partial resection of the duodenum, followed by closure of both cut ends, and gastro-enterostomy; and (4) gastro-enterostomy.

As the cases are seen now the performance of gastro-enterostomy is almost always necessary. The conditions of the ulcer are such that a restoration of the duodenum to its normal state is impossible, and all that can safely be done is to afford a new outlet from the stomach. It is now my invariable practice to infold the ulcer, in precisely the same manner as if a perforation had occurred. This allows the ulcer to heal more speedily, as it ensures that almost no food passes through the pylorus.

Leeds.

Worthing Hospital: New Ophthalmic Department.—The governors of Worthing Hospital at a meeting last month confirmed the recommendation of a subcommittee that an ophthalmic department should be established. No addition to the existing buildings will be needed, but a room is to be adapted for the work. A new rule was passed increasing the number of medical officers to eight, one to be specially appointed to attend to the work of the ophthalmic department. The need of such a department has been felt for a long time at Worthing, and the medical inspection of school children in the borough has assisted to bring about the consummation earlier perhaps than otherwise would have been the case. Urgent cases from Worthing have hitherto received treatment either at Brighton or Chichester.

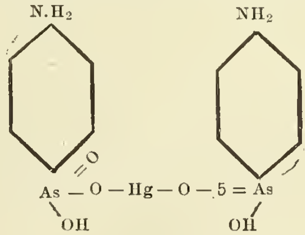
THE COMBINED MERCURIAL AND ARYLARSONATE TREATMENT OF SYPHILIS.

By F. J. LAMBKIN, L.R.C.P. & S. Irel.,
COLONEL, R.A.M.C.

Whatever the future may reveal as regards the specific effects of the arylarsonates in the later phases of syphilis, there can no longer be any doubt as to their value in the earlier stages of the disease, capable as they are of causing the spirochæta pallida to disappear and to delay, dissipate, and modify the early secondaries.

When these arsenical compounds were first introduced into the treatment of syphilis it was considered dangerous to give them simultaneously with mercury on the ground that the latter dissociated them, which would result in toxic effects being produced. At the Military Hospital, Rochester Row, our custom used to be to allow a period of at least a fortnight to elapse between the cessation of one and the beginning of the other; this was my teaching, which I stated in a paper on the subject read at the Sheffield meeting of the British Medical Association in 1908. The cases in which I first tried the combined treatment were some which, whilst resisting all treatment by either arsenic or mercury alone, rapidly responded when the two were employed together—i.e., the weekly injection of either metallic mercury or calomel being given at the same time as one of the arylarsonate compounds was being administered. In none of these cases did I find toxic effects, all syphilitic lesions clearing up rapidly under this system. So successful were these cases that I began to employ this method more freely, and it was not long before I saw that all cases of syphilis did better when the two drugs were employed simultaneously than when alone. This fact I stated in a paper which I read at the annual meeting at Belfast this year.

Since then I have become absolutely convinced of the benefit to be derived from this combination method. Instead of giving the ordinary mercurial injection I have been using a preparation of atoxyl and mercury made for me by Messrs. Greeff of Charlottenburg, Germany, the manufacturers of the original atoxyl; this they have named "atoxylate of mercury," and they describe it as being the acid mercury salt of atoxylic acid, and as having the following chemical constitution:—



It contains 23·7 per cent. arsenic and 31·8 per cent. mercury. It is a white powder, practically insoluble in water, which contains no water of crystallisation, and shows a slightly pinkish tinge when heated to 100° C. Its solutions do not precipitate albumin, as is usual with other mercury compounds.

I have been using this preparation very extensively since last July with much success, whilst Lessar reports very favourably on it in Germany. It is given intramuscularly and in suspension in either olive oil or liquid paraffin, or, better still, in the vehicle which I use in all my mercurial creams—creasote, camphoric acid, and palmitin. The dosage I have had to work out by observation. My custom now is to give of the following:—

Hydr. atoxyl, ʒi; vehicle, ʒix.

	1st injection,	♏vii. =	¾ grain.
After three days,	2nd ,,	♏vii. =	,, ,,
,, ,, ,,	3rd ,,	♏xii. =	1½ ,,
,, seven ,,	4th ,,	♏xii. =	,, ,,

And so on until eight injections have been given. One month's rest, and then repeat above course. Up to the present I have not had one case showing the slightest toxic effects, and all have benefited much from it. Under it all active symptoms clear up in a marvellous way, even more rapidly than when calomel is used.

The following are some of the cases treated by me at the Military Hospital, Rochester Row, by atoxylate of mercury. As will be seen, they were all well-marked cases of syphilis, mostly in the earlier stages. Case 28 was one of peculiar interest. The atoxylate of mercury is given by intramuscular injection, and should not be given subcutaneously.

Case 1.—Police-constable, Metropolitan Police. Oct. 10th, 1909: Admitted to-day; has been ill for three weeks. Sub-preputial hard chancre; deep glands in groin and neck indolently enlarged; papular eruption in back and thigh; ulcerated throat, anæmia, and cachectic; some pustules in back. Has had two injections at the Lock Hospital of gray oil. 15th: ¾ gr. of atoxylate of mercury. 20th: ¾ gr. of atoxylate; positive reaction. 22nd: 1½ grs. of atoxylate. Much improved, rash almost disappeared, pustules dried up. 29th: 1½ grs. of atoxylate. Wonderfully improved; gives positive reaction with Wassermann's test; rash almost disappeared, throat healed, pustules dried up. Nov. 5th: 1½ grs. of atoxylate of mercury. 12th: 1½ grs. of atoxylate. Induration at primary site nearly gone.

Case 2.—Private, 2nd Scots Guards. Oct. 21st, 1909: Weight, 11 stones 12 pounds. Placed on register on August 24th, 1909; treated mostly by orsudan and soamin. ¾ gr. of atoxylate of mercury. 19th: Positive reaction. 22nd: ¾ gr. of atoxylate. 29th: 1½ grs. of atoxylate. Nov. 6th: Weight, 12 stones 13 pounds. 1½ grs. of atoxylate. Discharged from hospital and proceeded to Windsor in apparently good health. 14th: 1½ grs. of atoxylate of mercury.

Case 3.—Private, 2nd Grenadier Guards. Oct. 1st, 1909: Weight, 11 stones. Indurated sore on penis, roseolar eruptions on back and chest, lymphatic glands in groin and neck enlarged, ulcerated throat; positive reaction with Wassermann's test. Has had 1½ grs. of atoxylate of mercury up to present; all active symptoms disappeared. 5th: Discharged from hospital to attend; 1½ grs. of atoxylate. 9th, 15th, 29th: On each date 1½ grs. of atoxylate. Nov. 6th: Weight, 11 stones 3 pounds. Completed course of atoxylate of mercury. One month's interval of rest from treatment.

Case 4.—Private, 2nd Coldstream Guards. Oct. 20th, 1909: Placed on register on the 1st. Indurated sore at urinary meatus; roseolar rash. Has had four atoxylate injections; both induration and rash have disappeared. 1st: Weight, 9 stones 13 pounds. Positive reaction with Wassermann's test. 5th: Weight, 9 stones 13 pounds. 1½ grs. of atoxylate of mercury. 9th: Weight, 10 stones. 1½ grs. of atoxylate. 22nd: Discharged from hospital to-day apparently well. 1½ grs. of atoxylate of mercury.

Case 5.—Private, 3rd Grenadier Guards. Spirochæta found in sore. Oct. 24th, 1909: Admitted to-day. Indurated sore on prepuce, papular eruption on scrotum and scalp, roseolar mottling all over trunk; lymphatic glands in groin and mastoid region enlarged; nocturnal headaches. ¾ gr. of atoxylate of mercury. 29th: ¾ gr. of atoxylate. 5th: 1½ grs.; rash disappeared. 17th: 1½ grs.; much better. 25th: 1½ grs.; all active symptoms disappeared.

Case 6.—Private, 2nd Scots Guards. Positive reaction with Wassermann's test. Sept. 16th, 1909: Weight, 11 stones 12 pounds. States contracted a sore on penis on Feb. 2nd, 1909, for which he had no treatment. Present condition: Scar (indurated) on prepuce; general glandular hardening; roseolar and macular eruption on body; alopecia. Has, he states, never been in hospital, nor has had any treatment up to date. Condylomata; some papules on back and chest. 17th: Weight, 11 stones 12 pounds. ¾ gr. of atoxylate of mercury. 22nd: Repeated atoxylate ¾ gr. 24th: 1½ grs. of atoxylate. All signs and symptoms disappeared. Discharged to attend weekly. Oct. 1st: Transferred to Windsor.

Case 7.—Private, 1st Irish Guards. Spirochæta pallida found in sore. Sept. 13th, 1909: Weight, 12 stones 9 pounds. Been under treatment in hospital for gonorrhœa and developed a sore on prepuce, which has become markedly indurated. Inguinal and cervical glands enlarged indolently; roseolar rash on back. Gave him ¾ gr. of atoxylate of mercury to-day. 17th: Repeated injection of ¾ gr. of atoxylate. 24th: 1½ grs. of atoxylate. Oct. 1st: Weight, 12 stones 7 pounds. No toxic signs; all symptoms disappeared; 1½ grs. of atoxylate to-day. 9th: Weight, 12 stones 13 pounds. 1½ grs. of atoxylate. Discharged from hospital for Aldershot apparently well.

Case 8.—Private, 1st Scots Guards. Spirochæta pallida found in sore. Sept. 13th, 1909: Weight, 11 stones 5 pounds. Well-marked indurated sore on prepuce; glands in groin and neck nodulated; dullish red rash scattered over trunk. Has had five injections of soamin (50 grs.). To-day received ¾ gr. of atoxylate of mercury. 17th: Repeated injection ¾ gr. of atoxylate. 24th: Gave 1½ grs. of atoxylate Oct. 1st: Weight, 11 stones 7 pounds. No toxic signs; all symptoms disappeared. 1½ grs. of atoxylate to-day. 2nd: Weight, 11 stones 7 pounds. Went to Aldershot for duty.

Case 9.—Private, 2nd Coldstream Guards. Spirochæta found; positive reaction to Wassermann's test. Sept. 13th, 1909: Weight, 12 stones. Has been in hospital for some time. Has two hard chancres at base of penis, and one on glans penis, general glandular adenitis, and is covered with a roseolar rash. Has had five injections of soamin (50 grs.). To-day gave him ¾ gr. of atoxylate of mercury by injection. 17th: Repeated injection ¾ gr. of atoxylate. 24th: Gave 1½ grs. of atoxylate. Oct. 1st: Weight, 11 stones 13 pounds. All signs disappeared; no toxic symptoms. 1½ grs. of atoxylate to-day. Discharged to Army Reserve.

Case 10.—Police constable, Metropolitan Police. Oct. 26th, 1909: Placed on register on August 18th, 1909, and had course of six injections of metallic mercury. Came for inspection to-day and found to be suffering from a deep ulcer of side of tongue. Gave him ¾ gr. of atoxylate of mercury. Nov. 6th: Ulcer of tongue and all active symptoms disappeared; discharged to attend. 1½ grs. of atoxylate. 12th: Received 1½ grs. of atoxylate. 18th: 1½ grs. of atoxylate.

Case 11.—Private, 2nd Scots Guards. Nov. 2nd, 1909: Weight, 12 stones. Two indurated sores on prepuce, papular eruption on body, lymphatic glands in groins and neck enlarged. ¾ gr. of atoxylate of mercury. 5th: ¾ gr. of atoxylate; sores healing, rash less. 12th: 1½ grs. of atoxylate. Primary induration healed, chancre healed, rash disappeared. 19th: 1½ grs. of atoxylate to-day. Discharged from hospital.

Case 12.—In the Grenadier Guards. Sept. 8th, 1909: Weight, 9 stones 6 pounds. Came sick to-day and admitted with hard sore under prepuce, general adenitis, and is covered in a roseolar rash. Received ¾ gr. of atoxylate of mercury to-day. 13th: Repeated injection. 17th: Has had no toxic signs. 1½ grs. of atoxylate. 24th: Gave 1½ grs. of atoxylate. Positive reaction to Wassermann's test. Oct. 1st: Weight, 9 stones 2 pounds. No positive symptoms, sore almost healed, rash disappeared. 1½ grs. of atoxylate. Discharged to duty. 8th, 15th, and 22nd: On each of these dates 1½ grs. of atoxylate. Finished first course; apparently quite well.

Case 13.—Private, 2nd Grenadier Guards. Sept. 9th, 1909: Weight, 10 stones 6 pounds. Had been in hospital for some three weeks and was operated on (circumcision). Developed induration round corona glandis, general adenitis, roseolar rash on body. ¾ gr. of atoxylate of mercury to-day. 10th: Had some diarrhœa yesterday, but is all right this morning. ¾ gr. of atoxylate of mercury. 13th: 1½ grs. of atoxylate. Rash fading fast, no toxic signs. 24th: Weight, 10 stones 7 pounds. Gave 1½ grs. of atoxylate of mercury. Oct. 1st: Weight, 10 stones 11 pounds. 1½ gr. atoxylate of mercury. No toxic symptoms, all syphilitic symptoms disappeared. Discharged from hospital to attend weekly. 8th, 15th, and 21st: On each date 1½ grs. of atoxylate. Finished first course.

Case 14.—Private, depôt Coldstream Guards. Sept. 8th, 1909: Weight, 10 stones 5 pounds. Admitted to-day from M.H., Caterham. Hard sore on prepuce, general adenitis, and is covered with macular rash. Began course of arylarsonate of mercury, giving ¾ gr. 10th: No toxic effects. Repeated injection of ¾ gr. of atoxylate of mercury. 17th: No toxic effects. 1½ gr. of atoxylate of mercury. 24th: Weight, 10 stones 6 pounds. Gave 1½ grs. of atoxylate of mercury. Discharged the army under three months' rule. Apparently quite well.

Case 15.—Patient in the 2nd Scots Guards. Discharged from Connaught Hospital, Aldershot, on August 29th, 1909, where he had been under treatment for three weeks for a soft chancre. Sept. 9th: Weight, 10 stones 10 pounds. Now has an indurated sore on prepuce; adenitis of glands in groin and neck, covered in roseolar eruption. To have course of atoxylate of mercury. Gave ¾ gr. to-day. 13th: Repeated injection of ¾ gr. 16th: No ill effects; much improved; rash faded. 1½ grs. of atoxylate of mercury. 24th: Gave 1½ grs. of atoxylate. Oct. 1st: Weight, 10 stones 11 pounds. Roseolar eruption disappeared. 1½ grs. of atoxylate: no toxic symptoms; positive reaction with Wassermann's test. 8th: 1½ grs. of atoxylate; much better. 15th: 1½ grs. of atoxylate; all symptoms disappeared. 20th: 1½ grs. of atoxylate. Discharged and proceeds to Windsor, apparently well.

Case 16.—Boy, 1st Norfolk Regiment. Positive reaction with Wassermann's test. Sept. 17th, 1909: Weight, 7 stones 10 pounds. Acquired a hard chancre about three months ago; has been under treatment more or less since then, first of all under soamin, of which he has had 100 grs. Then received four injections of metallic mercury. Present condition: scar of hard sore on prepuce. General glandular enlargements, large flat papules on chest, abdomen, and back, also on forehead. 20th: To-day got ¾ gr. of atoxylate of mercury. No toxic effects whatsoever. The papules decidedly fainter. Positive reaction to Wassermann's test. 24th: Weight, 7 stones 6 pounds. Improving fast. Gave 1½ grs. of atoxylate of mercury. Oct. 1st: Weight, 7 stones 6 pounds. No toxic signs, much improved. 1½ grs. of atoxylate to-day. 15th: Rash disappeared. 1½ grs. of atoxylate to-day. Some albumin in urine. 22nd: Albuminuria continues, consequently no injection to-day. All rash and other active symptoms subsided.

Case 17.—In the Army Service Corps. Sept. 20th, 1909: Weight, 11 stones 1 pound. Admitted on the 14th. Large induration under prepuce; enlargement of lymphatic ganglia in groins, neck, and on mastoid process; macular eruption on back and chest. Nocturnal headaches; hair of head shedding; cachexis. Had one ¾ gr. injection of calomel on Sept. 15th. To-day gave ¾ gr. injection of atoxylate of mercury. 24th: Induration much softer. Spirochæta pallida found. Gave injection of 1½ grs. Positive reaction to Wassermann's test. Oct. 1st: Weight, 11 stones. No toxic symptoms; rash entirely disappeared. 1½ grs. of atoxylate to-day. 8th, 15th, and 22nd: On each date 1½ grs. of atoxylate were given. Discharged to duty. Finished first course.

Case 18.—Patient in the 2nd Scots Guards. Sept. 22nd, 1909: Weight, 12 stones 1 pound. Positive reaction with Wassermann's test; has been on the syphilis register from Sept. 16th, 1908, and under treatment by metallic mercury injection. Present condition: Ulceration on top of tongue and lip. Got first injection of ¾ gr. of atoxylate of mercury on Sept. 17th, which was repeated on the 21st; marked improvement. 29th: Received 1½ grs. of atoxylate. All symptoms disappeared. Left London for Windsor. Oct. 5th: 1½ grs. atoxylate of mercury. 12th: 1½ grs. of atoxylate. Apparently well. Injections ceased owing to patient leaving London.

Case 19.—Private, 2nd Scots Guards. Sept. 22nd, 1909: Weight, 12 stones. Positive reaction with Wassermann's test. Been on syphilis register for past two years and under treatment by metallic mercury most of the time. Present condition: Ulcer on lip and mucous patches on tongue. Received first injection on Sept. 13th of ¾ gr. of atoxylate of mercury and repeated on 17th. No toxic symptoms and much improved. 28th: Weight, 12 stones. Gave 1½ grs. of atoxylate of mercury. Left London for Windsor. All signs gone. Oct. 5th: 1½ grs. of atoxylate of mercury. All signs of tongue lesion absolutely disappeared.

Case 20.—Private, 2nd Dragoon Guards. Sept. 22nd, 1909: Weight, 10 stones 7 pounds. Probable date of infection two weeks ago. Present condition: Hard subpreputial sore on penis; spirochæta pallida discovered in it; general glandular enlargements; maculo-papular eruption on chest, body, and limbs. Gave ¾ gr. of atoxylate of mercury. 24th: Repeated injection. Positive reaction to Wassermann's test. 28th: Weight, 10 stones 7 pounds. 1½ grs. atoxylate. Oct. 8th: 1½ grs. repeated. 15th: 1½ grs. All signs disappeared. 22nd: 1½ grs. Discharged from hospital to-day; finished course.

Case 21.—In the A. S. Corps. Positive reaction with Wassermann's test. Oct. 8th, 1909: admitted to-day. Hard chancre of penis; deep glands in groin; occiput and mastoid regions indolently enlarged, covered with roseolar rash; mucous tubercles on tongue, ulcerated throat, condylomata, alopecia, nocturnal headaches, anæmia and cachexia. Has evidently been concealing his disease, which is of at least six months' standing. Has had no specific treatment up to date. 11th: Received ¾ gr. of atoxylate of mercury to-day. 15th: 1½ grs. of atoxylate. Symptoms disappearing rapidly. 22nd: Weight, 8 stones 13 pounds. 1½ grs. of atoxylate. All induration disappeared; mucous patches on tongue and condylomata cleared up. Positive reaction to Wassermann's test. 29th: 1½ grs. of atoxylate. Nov. 3rd: Weight, 8 stones 12 pounds. Discharged from hospital; all active signs quite disappeared. To attend.

CASE 22.—Police constable, Metropolitan Police. Sept. 30th, 1909: Weight, 12 stones 3 pounds. Contracted sore on penis about five months ago. Has had a very doubtful course of specific treatment. Condition: Ganglia in groin and neck indolently enlarged, covered with papular eruption. Rupial ulcers in scalp, suppurating gland in side of neck. Positive reaction to Wassermann's test. Oct. 1st: Weight, 12 stones 3 pounds. ¾ gr. of atoxylate of mercury to-day. 6th: ¾ gr. of atoxylate. No toxic effects. 15th: 1½ grs.; much improved. 22nd: Weight, 12 stones 2 pounds. 1½ grs. of atoxylate; induration disappeared. Rupial sores on head entirely healed, suppurating gland in neck healed. Nov. 6th: Weight, 12 stones 3 pounds. Completed course. Discharged hospital; one month's rest.

CASE 23.—Police constable, Metropolitan Police. Oct. 2nd, 1909: Weight, 11 stones 11 pounds. Hard sore under prepuce, glands in groin and neck indolently enlarged, maculo-papular eruption profusely scattered over body, nocturnal headaches, roseola on muscles and calves. ¾ gr. of atoxylate of mercury. Positive reaction; spirochæta pallida found in primary sore. 5th: ¾ gr. of atoxylate to-day. For nocturnal headaches given 5 grs. of pot. iodi. t.d.s. 10th: 1½ grs. of atoxylate. Rash fading. 15th: 1½ grs. atoxylate. 22nd: Ditto. Rash fading. 29th: 1½ grs. of atoxylate. All active symptoms disappeared. Discharged from hospital. Nov. 5th: 1½ grs. of atoxylate of mercury. Finished course.

CASE 24.—Patient in the 2nd Coldstream Guards. Oct. 2nd, 1909: Weight, 11 stones 6 pounds. Hard sore on prepuce, other subpreputial, spirochæta pallida found. Glandular enlargements, roseolar rash over body. ¾ gr. of atoxylate to-day. Positive reaction. 5th: ¾ gr. of atoxylate to-day. 8th: 1½ grs. of atoxylate. 15th: Weight, 10 stones 10 pounds. 1½ grs. of atoxylate. Rash entirely disappeared. Sore almost healed, induration much less. 22nd: Weight, 11 stones 11 pounds. 1½ grs. of atoxylate. All active symptoms cleared up. Discharged from hospital. Oct. 29th: 1½ grs. of atoxylate of mercury. Nov. 5th: Ditto. Finished course.

CASE 25.—Private, 2nd Coldstream Guards. Positive reaction to Wassermann's test. Oct. 5th, 1909: Hard cicatrix on corona glandis; admitted having had a sore there about five weeks ago; deep inguinal glands enlarged, roseolar rash on back and chest, nocturnal headaches, and ulcerated throat. ¾ gr. of atoxylate of mercury to-day. 8th: ¾ gr. atoxylate. 15th: 1½ grs. of atoxylate. All symptoms cleared up. Discharged to attend. 22nd: 1½ grs. atoxylate. No active symptoms. Positive reaction. 29th: 1½ grs. of atoxylate of mercury. Nov. 5th: Ditto. 12th: Ditto. Finished course.

CASE 26.—Patient in the 2nd Scots Guards. Positive reaction to Wassermann's test. Oct. 6th, 1909: Weight, 10 stones 10 pounds. Transferred from Windsor with venereal sore. Large eroding ulcer on surface of prepuce, hard edges, spirochæta pallida found in sore. Deep glands in groin and neck enlarged; maculo-papular eruption in body. ¾ gr. of atoxylate of mercury. 9th: ¾ gr. repeated. Positive reaction. 15th: Weight, 10 stones 9 pounds. 1½ grs. of atoxylate. Much improved. 22nd: Weight, 10 stones 10 pounds. 1½ grs. of atoxylate. Gained 4 pounds in weight. 29th: 1½ grs. of atoxylate of mercury. All signs disappeared. Nov. 5th: 1½ grs. repeated. Discharged from hospital. 12th: 1½ grs. Finished course of atoxylate.

CASE 27.—Private, 2nd Scots Guards. Positive reaction to Wassermann's test. Oct. 6th, 1909: Weight, 13 stones. Transferred from Windsor. Superficial erosion on glans penis with hard edges; glands in neck and groins indolently enlarged, covered with roseolar eruption (erythema). ¾ gr. of atoxylate of mercury to-day. 9th: Weight, 12 stones 6 pounds. ¾ gr. of atoxylate. 15th: 1½ grs. of atoxylate; sore healed; rash disappeared. 22nd: 1½ grs. of atoxylate. 29th: 1½ grs. of atoxylate. All active symptoms disappeared. Discharged to Windsor.

CASE 28.—In the Grenadier Guards. Positive reaction to Wassermann's test. Oct. 7th, 1909: An old case of some eight years' standing, for the last five of which he has been much troubled with his tongue. Has had thorough antisyphilitic treatment both with mercury and soamin. Present condition: Tongue hard and thickened and there are deep cracks and jagged fissures on its surface; on the dorsum of the tongue and inside of cheeks are large patches of leucoplasia. Mucous membrane of larynx thickened and reddened; aphonia. Blood gives undoubted "positive reaction" with Wassermann's test. Had ¾ gr. of atoxylate of mercury to-day. 10th: Repeated ¾ gr. Slight improvement in tongue. 16th: 1½ grs. of atoxylate. Decided improvement. 23rd: 1½ grs. of atoxylate. 29th: Repeated 1½ grs. of atoxylate. Great improvement in condition of tongue, which has considerably softened; fissures healing. Nov. 5th: 1½ grs. of atoxylate of mercury. Marvellous progress; says the tongue is better than it has been for last five years. 12th: 1½ grs. atoxylate of mercury. Tongue almost normal; voice returned. 26th: 1½ grs. of atoxylate of mercury. Condition of tongue practically cured. Patches of leucoplasia disappeared. Finished first course. To have one month's rest from further injections.

CASE 29.—Private, 2nd Grenadier Guards. Positive reaction with Wassermann's test. Oct. 11th, 1909: Weight, 11 stones. On register since January, 1909. He has had six injections of metallic mercury. Saw him to-day; is suffering from sclerotic glossitis with deep fissures and cracks. Received ¾ gr. of atoxylate on Oct. 8th. 22nd: Since last injection his gums have been sore, so have not repeated it up to date. Nov. 2nd: Gums much better; has had copper sulphate applied to roots of teeth. Deferred further injection to Nov. 5th. 6th: ¾ gr. of atoxylate of mercury. 12th: 1½ grs. of atoxylate of mercury. Tongue wonderfully improved, all hardening disappeared, fissures healed. Discharged from hospital. 26th: 1½ grs. of atoxylate of mercury. Tongue quite healed.

CASE 30.—In the 2nd Coldstream Guards. Nov. 2nd, 1909: Weight, 11 stones 5 pounds. Hard sore on prepuce; roseolar rash all over body; lymphatic glands in groin, neck, and the mastoid enlarged. Received atoxylate of mercury ¾ gr. 5th: Atoxylate repeated. All active symptoms disappeared. Discharged to attend. 12th: 1½ grs. of atoxylate of mercury.

Military Hospital, Rochester Row.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CHRONIC SUPPURATIVE OTITIS MEDIA WITH LABYRINTHINE FISTULA AND SPONTANEOUS NYSTAGMUS.

By LINDLEY SEWELL, M.B., B.S. LOND., M.R.C.S. ENG.,
HONORARY ASSISTANT SURGEON TO THE MANCHESTER EAR HOSPITAL.

THE patient, a little girl, aged 6 years, was admitted into the Manchester Ear Hospital under my care with the history that she had had a discharging ear for four years dating from an attack of measles. Eight days before admission she began to suffer from headache, occasional vomiting, and dizziness. On examination a perforation, through which protruded a small amount of granulation tissue, was seen in the posterior superior quadrant of the right tympanic membrane; the pus in the meatus was very foul and mixed with a large amount of desquamated epithelium. There was no swelling or tenderness over the mastoid area. The child had an unsteady gait, stumbling to the right, although sometimes by over-correction she fell to the left. She was unable to stand upright with feet together and eyes closed; she invariably fell to the right. She had spontaneous horizontal nystagmus directed to the left, which was most marked on extreme deviation of the eyes to the left, and much less marked, although it did not quite disappear, on extreme deviation of the eyes to the right. On syringing out the right ear with cold water the nystagmus already present was much increased in intensity. By compression of the air in the meatus by means of a small Politzer's bag fitted to it a nystagmus was produced directed to the right side; by rarefaction there was no apparent increase in the left nystagmus which was already present. With the left ear stopped she heard the spoken voice at about 4 feet. It was difficult to draw any conclusions from tuning-fork tests, as the child's answers varied, but apparently there was little or no impairment in the auditory perceptive apparatus. There were no optic neuritis and no squint. The pulse was 84, and the temperature varied between 97° and 98·6° F.

A provisional diagnosis of labyrinthine fistula secondary to chronic suppurative otitis was made and a radical mastoid exenteration was performed without delay. A large part of the temporal bone was found to be destroyed and hollowed out and filled with a foul-smelling cholesteatoma. A tiny fistula, which was not curetted or enlarged, was seen leading into the external horizontal semicircular canal; the stapes was found to be *in situ* and was also left undisturbed. The patient made an uninterrupted recovery, vomiting ceased, the dizziness disappeared, and in three weeks she was able to walk steadily; the nystagmus diminished in intensity more slowly, and three months later was present to a slight degree on deviation of the eyes to the left.

The case is of interest in so far as it illustrates the practical value of Bárány's vestibular tests, as an aid to diagnosis. The active response to the caloric test (syringing with cold water) showed that the vestibular apparatus was still functional; an important point to determine, since in early cases of labyrinthitis the nystagmus is generally directed to the diseased side, and only as the vestibular apparatus becomes more and more destroyed changes its direction to the sound side. In this case the nystagmus was directed away from the diseased side. The active response of the "pressure test" pointed to a breach in the labyrinthine wall, and this fact, combined with a vestibular apparatus still functional, led to the diagnosis of "circumscribed labyrinthitis." With regard to the treatment of such a condition, I believe it is the best practice to be content at first with a wide radical mastoid operation, and then to keep the case under careful observation, and only interfere with the labyrinth if rapid improvement does not ensue.

Manchester.

CONGENITAL BLENNORRHŒA OF THE LACRYMAL SAC.

BY S. G. CORNER, M.A., M.B., CH.B. EDIN.,
LATE ASSISTANT HOUSE SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN, SOUTHWARK BRIDGE ROAD, LONDON, S.E.

A CASE of this somewhat rare condition, about which the text-books say so little, seems worthy of record. It occurred in a female child at whose birth I was present in November, 1909. The appearance the child presented immediately after birth was as if the bridge of the nose was sunken. On closer examination, however, it was seen that this was really due to swelling of both lacrymal sacs. On the second day the swellings increased. On the third day the sacs were considerably distended, the skin over them being of purplish hue. There was a discharge of muco-purulent material through the canaliculi into the eyes, but more so in the case of the left eye, where the swelling of the tear sac was more prominent. Pressure over the distended tear sacs produced increased regurgitation of muco-pus into the eyes. On the fifth day the left eye was constantly bathed in discharge, in spite of the fact that the nurse kept washing it away with boric lotion.

Fearing that the conjunctiva would suffer if matters were left alone, I decided to incise the sac of the left side. After spraying on ethyl chloride an incision was made over the most prominent part of the swelling and an ordinary probe was passed in, but not passed down the nasal duct. The discharge into the eye immediately ceased, and in two days, with the help of boric fomentations, the swelling had entirely subsided. As there was but little discharge into the right eye the nurse was directed to press the tumour on that side downwards in the direction of the nasal duct. This treatment was effective, for in three days the bulging of the right tear sac had disappeared.

This child is the second one the mother has given birth to; the eyes of the first-born, also a girl, had shown no abnormality at birth.

In a recent article on congenital blennorrhœa of the lacrymal sac Mr. J. R. Foster of Hartlepool states that he considers the condition to be due to obstruction of the nasal duct, "most probably where it opens into the inferior meatus of the nose." Writing about inflammation of the tear sac, Berry says that "as the mucous membrane of the sac swells its lower orifice or passage into the tear duct becomes narrowed or closed, partly by the approximation of the swollen folds of the membrane which are met with in this situation, and partly, no doubt, by the increased mucoid secretion from the swollen surface." Evidently Berry considers that the duct may be blocked by accumulation in the sac itself, which is the dilated upper end of the duct.

In the case above recorded there was evidently no stricture of the nasal duct at its lower end, because, in the case of the left eye, the condition was relieved at once by the incision into the sac and relief of tension, and in the case of the right sac pressure downwards in the direction of the nasal duct sufficed to empty the sac by expressing the contents into the nasal duct.

Coggeshall, Essex.

A NOTE ON A CASE OF MONGOLIAN IMBECILITY.

BY J. P. CULLEN, M.B. LOND., M.R.C.S. ENG., D.P.H.

THE following notes on a case of Mongolian imbecility recently under my observation may be of interest as exemplifying certain factors in the etiology of this affection.

The patient was a boy, aged 8 years. The family history was significant. The mother, aged 43 years, had been married for 20 years, and during that time had had seven children, two dying in early infancy, five being alive at the date of examination. In addition she had had four miscarriages, two of these between the third and fourth children, one between the fifth and sixth, and one prior to the birth of the patient, who was the seventh and last child of the series. No specific history was elicited from the mother, and no signs of congenital disease were observed on other members of the family. A history of alcohol was obtained from both the father and the mother.

The patient himself was a typical Mongol, showing a brachycephalic head with antero-posterior and transverse diameters both 12·5 inches, obliquely set eyes, depressed bridge of nose, furrowed tongue, and curvature of the little fingers of both hands. He was backward at school and could not learn, but exhibited none of the dull apathy of a cretin, his facial aspect being more alert.

The case lends support to the theory that such imbeciles are exhaustion products depending mainly on advanced maternal age and frequent child-bearing, but also due to other toxic influences of which alcohol may be one.

Plymouth.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Abdominal Hysterectomy.—Cyst of the Broad Ligament.

A MEETING of this section was held on Dec. 9th, 1909, Dr. H. MACNAUGHTON-JONES, the President, being in the chair.

Dr. PHILIP D. TURNER (Ryde) read a paper on Abdominal Hysterectomy 63 hours After Labour for a Necrosed and Suppurating Subperitoneal Fibroid. The patient was a nullipara, aged 32 years, and had been married 13 months. She consulted Dr. Turner on March 22nd, 1909, on account of a hard lump which she had noticed in the left side of her abdomen for about a fortnight. Her last menstrual period ended on Jan. 18th. A firm, elongated, freely moveable tumour was found lying on the left side of, and attached to, the uterus, which was about two months pregnant. He considered it to be a pedunculated fibroid, and took her into hospital with the intention of removing it. On April 8th he opened the abdomen, and found that the fibroid was attached to the uterus by a very broad base and could not be removed without terminating the pregnancy. He therefore decided to let the case go on to term and perform a myomectomy afterwards. Labour commenced on Oct. 26th, but full dilatation was only reached on the 29th. The second stage was short and, towards the end, precipitate. The child, a boy, was born with a very long cord three times round its neck. There was rather sharp post-partum hæmorrhage, and the placenta and membranes had to be stripped off. In doing this a very small intramural fibroid was felt in the anterior wall and a somewhat larger submucous one near the right cornu. On the morning of Nov. 1st (the third day) the patient was looking ill and anxious. The whole abdomen was somewhat tender, the temperature was 100·2° F., and the pulse-rate was 126. From the steady and progressive rise in the pulse-rate, combined with the increasing pain and tenderness over the tumour, it was concluded that the fibroid was sloughing, and immediate operation was advised. The uterus was accordingly removed by Doyen's method 63 hours after the birth of the child, three or four pints of saline solution being introduced into the abdomen while the wound was being closed. This caused the pulse, which had become imperceptible, to revive. The operation lasted nearly three-quarters of an hour. An hour later three pints of saline solution were introduced into the median basilic vein, with one drachm of adrenalin—1 in 1000—to each pint. The convalescence was without incident. The pulse-rate for five days did not fall below 120 and was at times as frequent as 140. The uterus contained a tumour which was of about the size of the head of a three months fœtus, was slightly ovoid in shape, and had grown from the left angle of the uterus in front of the broad ligament. On incising the tumour there was a gush of excessively foul and stinking pus. The tumour was almost entirely converted into an irregular cavity lined and trabeculated by yellowish grey opaque slough. This was bounded by a layer of apparently normal fibroid tissue, which on the side nearest to the uterus was three-quarters of an inch thick, while at one point of the incision it was less than one-tenth of an inch, so that the slough was covered by very little more than the peritoneum. The necrotic change must have gone on for a considerable time before labour, but, on the other hand, the fibroid was in a normal condition when the abdomen was opened in the third month of pregnancy. The patient began to feel pain in the tumour on exertion about the seventh month of pregnancy, and it was probable that the central necrosis of the fibroid took place about that time, or shortly before. With regard to the treatment pursued, the only alternative would have been to perform myomectomy or hysterectomy at the first operation. After labour the symptoms did not leave any alternative.—Dr. Lewers said that where acute symptoms arose after labour complicated by the presence of uterine fibroids, it was only in exceptional cases, such as the present, that hysterectomy was required.—Dr. Herbert R. Spencer said that to have removed the tumour during pregnancy would have entailed great risk of abortion, and would have left behind a submucous tumour much more likely to cause trouble than a subperitoneal growth, suppuration in which was a very rare occurrence.—The President said there were two important questions raised in this case. First, was the course pursued in the early period of the pregnancy the right one, and justified by the exploration of the tumour? Secondly, was the total hysterectomy called for under the conditions present after the labour? On both these points he was quite in accord with the treatment pursued.

Dr. Lewers read a paper on a case of Tumour of the Right Broad Ligament Springing from the Uterus and apparently Developed from Gärtner's Duct. The patient, who was a primipara, 47 years of age, was admitted into the London Hospital on March 24th, 1909. She then complained that for the last month there had been frequency of micturition during the day and that she had been unable to empty the bladder properly in the morning. For about the same time she had also noticed a swelling in the lower abdomen and had pain and flatulent distension after meals. A fluctuating tumour, fairly central in position, was felt rising from the pelvis to a height one inch above the umbilicus. On vaginal examination the vaginal portion of the cervix could only be reached with difficulty. It lay high up and to the left. A tense swelling, which seemed to be continuous with the tumour in the abdomen, was felt bulging down the vaginal roof and right lateral fornix. On the 26th the abdomen was opened in the usual way and the cyst, which was covered by the anterior layer of the right broad ligament and was of about the size of an adult head, came into view. It was punctured and about 2 pints of thick, chocolate-coloured, odourless fluid escaped. The partially collapsed cyst was found to lie in the right broad ligament. The right tube and ovary were normal and lay behind the cyst, the posterior peritoneal layer of the broad ligament intervening. Enucleation was easy in every direction till the right side of the uterus about the level of the internal os was reached. Here the cyst was firmly attached to the uterus by a pedicle of uterine tissue, about an inch in diameter, which was divided with scissors. The left uterine appendages showed signs of chronic inflammation and were removed. The uterus was retroverted, but was otherwise normal. The patient made an uninterrupted recovery. The microscopic examination supported the view that the tumour represented a collection of dilated ducts and cysts in the uterine wall, probably arising from the intra-uterine portion of the Gärtnerian duct.—Mr. Alban Doran referred to Unterberger's remarkable instance of a bilobed cyst of the right Gärtner's duct, in which there were apparently two cysts, and on pressure on the left tumour sanious watery fluid issued from the os externum.—Dr. R. Drummond Maxwell said that he had examined the tumour, which at first sight had appeared to be an intra-ligamentous fibroid undergoing cystic degeneration. The microscopic sections, however, warranted the view that it was of developmental origin, and arose in the intra-uterine portion of Gärtner's duct.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Chiltern Hills.—Atmospheric Electricity.

A meeting of this section was held on Dec. 8th, 1909, Dr. Leonard Williams, the President, being in the chair.

The President referred to the lamented death of Mr. C. R. B. Keetley, a former treasurer and Vice-President of the British Balneological and Climatological Society, and a vote of condolence with Mrs. Keetley was passed.

Dr. S. D. Clippingdale read a paper on the Chiltern Hills in Certain of their Natural and Medical Aspects. After dealing with the geology of the subject he mentioned amongst other interesting details that the inhabitants of the more remote parts were descendants of the aborigines, who were never displaced by invaders, either Roman, Saxon, or Danish. He then went on to describe the medical history of the places, extracted for the most part from the parish registers. In conclusion he reviewed the present state of health matters and described the suitability of the region as a health resort.

Mr. A. G. S. Mahomed (Bournemouth) read a paper on Atmospheric Electricity. He referred briefly to the early observations of Volta, Richmann, and Franklin, and said that methodical observations dated from Lord Kelvin's invention of the water-dropping apparatus. He exhibited on the screen a chart constructed by Dr. Chree from observations at Kew showing the diurnal variation for each month of the year. From this it appeared that there was a morning maximum between 8 and 10 A.M. and an evening maximum which occurred between 6 and 8 P.M. in the winter and between 8 and 10 P.M. in the summer months. The minima were at 4 A.M. and 2 P.M. There was a range of potential from 500 to 600 volts down to a negative reading, and this variation might take place within a few minutes under certain conditions. The relation, or rather want of relation, to other meteorological factors was referred to; suggestions were offered as to the cause of the electrification of the atmosphere; some account was given of the ionisation due to electric discharge, emanations from metals, irruption of gases, heating and cooling of earth's surfaces, and magnetic currents; and attention was drawn to the differences which might be expected to exist in the amount of potential registered at sites having permanent electrical values, such as a range of rocky hills on an elevated plateau, or a place by the sea-shore, or in a river valley, or near a pine forest. Mr. Mahomed also offered an ingenious hypothesis of the building up of completed electric molecules and what he called the existence of "positive bachelor companies." In the latter part of his paper he showed some observations which he had made with a portable apparatus he had devised; these showed the effect of altitude, the increase of potential near a river, and the immediate effect of some meteorological disturbance, such as sudden wind.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A clinical meeting of this society was held on Dec. 15th, 1909, a great many cases being shown, of which the following are a selection:—

Mr. Archibald McKendrick showed a case of Postparturient Paralysis which affected mainly the peroneal nerve of the left leg. The patient was aged 24 years, and had been confined of a stillborn child, whose head had presented transversely and to the left side. After delivery the left leg was completely paralysed, while two months later the paralysis was confined to the muscles in front of the leg, or to the group of muscles supplied by the peroneal nerve. The paralysis was probably caused by pressure on the sciatic nerve. A simple elastic apparatus had been applied, and with it the patient could walk and showed little sign of paralysis.

Dr. A. Dingwall Fordyce exhibited several infants who had been treated by Staphylococcic Vaccine on account of Multiple Boils or Abscesses. He had employed a stock vaccine containing staphylococcus aureus, albus, and citreus, which uniformly proved successful in from three to four days. The dose varied from 80,000,000 to 150,000,000 organisms.

Dr. Edwin Bramwell showed a man suffering from Traumatic Hysteria. There was no weakness in the muscles generally but the right arm hung limply. It was not a case of musculo-spiral paralysis because all the muscles of the extremity were affected and there was no electrical disturbance of the muscles. A condition of anæsthesia and analgesia existed over the whole of the right side of the body. The senses of smell, taste, and vision were all lessened in acuity on the right side. All the typical characteristics of functional hemianæsthesia were present and there was no evidence of organic disease. The patient was a miner, and on August 21st, 1908, he had been struck on the left side of the head and left shoulder by a fall of stone. The case was one which was being compensated for the injury and hence the stimulus to get well so as to earn a wage was wanting.

Dr. William Russell showed a woman suffering from well-marked Osteo-arthropathy. He said that the condition was often associated with chronic lung affections and was then known as pulmonary osteo-arthropathy, but in this case this association was not present. The symptoms included marked clubbing of the fingers and toes which were also elongated; some thickening of the lower ends of the bones of the forearm; stiffness at the elbow-, shoulder-, knee-, and hip-joints; marked loss of power in the hands with tremor; some atrophy of the muscles; and profuse sweating confined to the hands and feet. She had difficulty in rising from her chair and walked with difficulty. The appearance of the face suggested acromegaly. The X ray photograph showed that the thickening of the ends of the long bones was due to a subperiosteal deposit of bone. Systematic examination had failed to show the cause of the disease and no toxic condition was present. All kinds of treatment had been employed but with little benefit. Iodolysin, however, seemed to have caused some improvement and her general health and ability to walk were better since this drug had been employed.

Dr. Byrom Bramwell showed a case of Functional Spasmodic Contractures resembling Thomsen's Disease. The patient, who was aged 26 years, had been a miner, and was sent to Edinburgh from South Wales with a history of Thomsen's disease. As soon as muscular effort was tried spasmodic contraction of the muscles took place. The condition had existed six months and no hereditary history was present. The patient walked with extreme shaking and bending of the back; there were regular tonic contractions of the muscles of the lower limbs. The muscles were large and well developed. Anæsthesia and analgesia were present to a marked degree all over the body, and the field of vision was contracted to a great extent. The peculiarity of the gait, as well as the other symptoms, suggested its functional causation. The patient recovered in two weeks by the use of psycho-therapeutics and isolation.

Dr. Norman Walker showed several patients treated by the application of Carbonic Anhydride Snow. The snow was hammered into a compact mass and when applied by forceps to the diseased part the temperature was lowered to –118° F., and within 30 seconds the part became hard and frozen without pain. He showed several cases of lupus erythematosus which had been very obstinate to other treatment, but by freezing the parts round the margin the disease had improved greatly. One case of recurrence of rodent ulcer after removal had recovered after five applications and the resulting scar was astonishingly small, while another case recovered after four applications.

Professor F. M. Caird showed a patient after operation for Appendicitis, General Peritonitis, and Obstruction treated by Laparotomy and Intestinal Drainage. At the operation the appendix was found to be gangrenous and the bowels distended and paralysed. The bowels were opened in various situations and drainage-tubes were inserted. Each day the bowels were washed out betwen the tubes, the stomach was washed out, and saline infusions were made into the veins. As the patient was going from bad to worse and was becoming cyanotic the intestines were filled with peptonised milk and recovery commenced at once. Professor Caird had never seen so serious a case terminate in recovery, and thought that the fatal result was in many cases due to inanition.

Mr. J. M. Cotterill showed a young man who had suffered from Dislocation of the Cervical Vertebræ. The accident happened while he was playing football. The X rays showed that the uppermost cervical vertebra was distinctly dislocated forwards. Mr. Cotterill had tried forcible extension, but the dislocation could not be reduced. The neck was encased in plaster for some weeks, and the patient had now recovered except for some stiffness of the neck.

Professor H. Alexis Thomson showed a case in which, after resection of the stomach and transverse colon for Gastric Carcinoma and re-establishment of the intestinal tract by ileo-sigmoidostomy, it was found necessary at a later period, owing to painful attacks of distension of the ascending and hepatic flexure of the colon, to resect these also.

Mr. Charles W. Cathcart showed an Achondroplasic man, aged 23 years, after Excision of Carcinoma of the Descending Colon.

Mr. David Wallace exhibited a man, aged 22 years, who Fractured his Spine in the Lower Dorsal Region as the result of a fall 10 months ago. There was a marked prominence over the third, fourth, and fifth lumbar vertebræ. The hæmorrhage into the cauda equina had caused complete paralysis of the lower limbs. A pulmonary trouble supervened and for a time the prognosis was grave, but now he had practically completely recovered.

Mr. H. J. Stiles showed a man, aged 40 years, nine weeks after Excision of the Knee for Tuberculous Disease, to illustrate the advantage of nailing the bones. The limb was at present perfectly ankylosed.

Dr. A. Logan Turner showed a patient, aged 16 years, after recovery from Septic Meningitis which complicated Chronic Middle-ear Suppuration. On admission to hospital the symptoms included a temperature of 102° F., mastoid tenderness, fœtid discharge from the left ear, severe headache, mainly frontal, slight rigidity of the neck, double Kernig sign, and plantar flexion. The cerebro-spinal fluid was under tension and the microscope showed from 40 to 70 per cent. of polymorphonuclears. At a later stage streptococci and bacilli, probably proteus vulgaris, were found in the cerebro-spinal fluid. A radical mastoid operation was performed with repeated lumbar puncture and injection of antistreptococcic serum into the spinal canal. Dr. Turner said that of 23 cases of such meningitis with ear disease admitted during the past three years this case alone had recovered.

Other cases were shown by Dr. Francis D. Boyd, Mr. A. Scot Skirving, Mr. J. W. Dowden, and Mr. J. W. Struthers.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

Myoma of the Uterus.—Ovarian Pregnancy.—Painless Labour.

A meeting of this section was held on Dec. 3rd, 1909, Dr. Henry Jellett, the President, being in the chair.

Dr. M. J. Gibson exhibited a specimen of Myomatous Uterus with necrosis of one large tumour and carcinoma of the endometrium. The patient was over 60 years of age, and 12 years past the menopause. She knew that she had the tumour for many years, and had been given to understand that it would never do her any harm after the change of life. She had never been pregnant, and enjoyed good health up to four weeks before he saw her, when she suffered from a severe attack of uterine hæmorrhage. The removal of the uterus was easy, but scattered everywhere over the pelvis Dr. Gibson found nodules which were deposits of carcinoma. These and the condition of the uterus showed how far the disease had extended without any symptoms. The patient did very well.

Dr. E. Hastings Tweedy exhibited a specimen of Ovarian Pregnancy, probably the first exhibited in Ireland. The patient was 25 years of age. She had been married four years and had three children, the last one having been born in June, 1909, five and a half months ago. She had also had one abortion. She menstruated on Sept. 18th for the first and only time since delivery. On Nov. 5th she was seized with acute pain in the right lower abdomen, from which she almost fainted. When examined on the same day a very tender mass of the size of a hen's egg was found to the right side of the uterus which was retroverted. The left appendages were normal. The tumour on the right side could not be definitely localised to either the ovary or the tube. A diagnosis of extra-uterine pregnancy was made. On Nov. 16th right oöphorectomy was performed under ether. Both tubes and the left ovary were found microscopically to be perfectly normal. A blood-clot about three inches in diameter completely obscured the right ovary. This was clamped and removed, ovarian tissue being cut through in removal. The case had fulfilled all the conditions laid down for ovarian pregnancy. He thought that the specimen was worth public acknowledgment by the Section.—Dr. R. J. Rowlette said that in the specimen the corpus luteum was visible to the naked eye. A section taken through the corpus luteum and the edges of the blood-clot showed a proliferation of the cells of the corpus luteum and the mass of blood-clot, in which three or four villi were seen.

—Dr. GIBBON FITZGIBBON quoted a case reported in the November number of the *American Journal of Obstetrics*. On the day the woman expected to be delivered she complained of pains. These went off, and 12 days later she went into hospital. A tumour was found strongly resembling an ovarian cyst. On opening into it a fœtus was found. This was delivered and resuscitated. The child was up to term and free from deformities, and the patient made a complete recovery.—The PRESIDENT urged Dr. Tweedy to refer the specimen to a committee. His own opinion was that it was ovarian pregnancy.—The specimen was accordingly directed to be sent to the Reference Committee for report.

Mr. J. SPENCER SHEILL said that in order to relieve the usual suffering of women in labour he had used in his practice during the past year the scopolamine-morphine treatment on some 19 cases and gave his results, which he believed were the first of the kind published in Ireland. The many contradictory reports from users of it since Krönig's first paper on the subject seemed to be due to differences in the quality of the drugs employed. He quoted various authorities on chemistry who believed that scopolamine and hyoscine were exactly similar—among them Martindale, Binz, and even the British Pharmacopœia. This was not absolutely correct, because, although pure hyoscine and scopolamine were chemically similar, they existed in three stereo-isomeric forms—namely, dextro, lævo, and racemic modifications—and of these the "lævo" modification had much the strongest action on peripheral nerve-endings. He believed that some writers used the word scopolamine to denote this form and hyoscine to denote the other weaker forms. The processes of manufacture could change the stronger form into the weaker. Mr. Sheill said that Messrs. Burroughs and Wellcome had assured him that their tabloid hyoscine hydrobromide consisted only of the pure "lævo" form. Scopolamine, he stated, was also a respiratory and circulatory stimulant, and therefore counteracted some undesirable effects of morphine. The doses were from 1-200th to 1-100th grain of scopolamine and 1-8th to 1-6th grain of morphine. The scopolamine was sometimes repeated, but the morphine seldom or never. They were used in the first stage when the pains were becoming strong; quietness was then insisted upon and the room was darkened. The patient might sleep or get drowsy, but labour proceeded unaffected. Loss of memory for the time being was the principal after-effect which he had noted. He had also seen flushing of the face and quickened pulse. He had not observed asphyxia neonatorum or post-partum hæmorrhage, which had been recorded by some. Hard water must not be used in making the solution, as alkalies would precipitate the alkaloids and so reduce the dose given. He concluded by stating that scopolamine-morphine had many advantages, but doubted if these were not outweighed (except in a limited number of cases) by certain disadvantages.—Dr. J. R. FREELAND said that the use of scopolamine was commenced at the Rotunda Hospital in Dublin in September, 1908. They now gave 1-120th grain of scopolamine, with 1-6th grain of morphine, and repeated in 1-180th grain doses without the morphine. They had given it in about 40 cases. One infant was born slightly asphyxiated, but it breathed after a hot bath. The others were born perfectly normal. None of the women showed any abnormalities after labour, except one who got out of bed when not watched. There had been three absolutely painless deliveries.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Dec. 8th, 1909, Dr. F. W. N. Haultain, the President, being in the chair.—Dr. J. W. Ballantyne read a paper on the Rational Puerperium. He said that the term "rational" was a reasonable one. For the last ten years or more the question of the early resumption of the erect posture had been exercising the minds of obstetricians on the Continent; but British practitioners and teachers had scarcely considered the matter, and might not now be debating the subject had not Dr. Haultain forced it upon their notice by his experiment in the Edinburgh Royal Maternity Hospital last spring. The question presented itself 35 years ago when Dr. William Goodell of Philadelphia described the method of treating the puerperium at the Preston Retreat. He permitted the woman on the morning following the day of her labour to slip into a chair whilst her bed was being made, and each day once or twice till the fourth, when she was allowed to dress herself. No patient rose against her will, yet almost all availed themselves of the opportunity. He considered that the upright position excited the uterus to contract and lessened the amount and duration of the lochia, and that convalescence was more prompt and sure; he also kept in mind the fact that uterine disease was hardly known among uncivilised races whose women leave their beds early. Dr. Garrigues in 1880, criticising Dr. Goodell's paper, reasoned that although parturition was a physiological process, it was one in which a transition to the pathological was extremely common, and that the women of our time were no longer in the same physiological condition as in the infancy of mankind. Other observers had not found that the upright position lessened the amount or duration of the lochia. In 1899 Küstner raised the question at the German Society for Gynæcology in Berlin. He thought that women who had passed through a normal labour with no laceration or infection ought to rise on the third or fourth day or even the second day after delivery, and that prolonged rest was harmful, but in abnormal cases or after tedious labours longer rest in bed should be permitted. He stated that early rising did not cause suffering nor did the patients develop prolapse or retroversion of the uterus, that involution was not delayed but hastened, that the bowels acted better or naturally, that appetite was improved, and that there was no difficulty with micturition. Fears were expressed in the discussion by Olshausen and others lest involution of the supporting ligaments might be interfered with, lest the abdominal walls might remain relaxed, that thrombosis might be more frequent, and lest the pelvic musculature might suffer. Much has been written since on the subject by many authors, including E. Martin, von Winckel, Brisset, von Alvensleben, Hinchey, Gellhorn, Fromme, Hofmeier, Fehling, and Haultain. Most of the records have been favourable to the new departure and seem to show that after normal labours prolonged rest in the horizontal posture is unnecessary. But Gellhorn, from observations on 1000 women treated in this way in Berlin and discharged from the hospital in perfect condition, stated that many afterwards required weeks of treatment and rest for troubles which had occurred after returning home. He also referred to Wagner's observations on Javanese women who were compelled by an old law to get up immediately after confinement and walk about, but not to attend to their domestic duties; yet embolism and prolapsus uteri were frequent. Fromme had a death from embolism in a patient who was allowed to get up for one hour on the second day. Dr. Ballantyne made some observations during his recent term of duty at the Maternity. He only practised douching occasionally; delayed lochia he treated by raising the upper end of the bed, and in most cases he gave a puerperal pill, advocated by Dr. H. Oliphant Nicholson, of sulphate of quinine and extract of ergot, with occasionally the addition of digitalis folia. In reading the papers of Krönig, von Wild, and Schücking, he had been much impressed with the benefits obtained by gymnastic exercises in bed during the puerperium. He accordingly carried out Liegegymnastik on all cases which he considered suitable. The patients, covered with a blanket, lay flat on their backs, then rolled three times to each side, and thrice they drew up and extended the knees. Arm exercises were carried out in varied movements. These exercises in the majority of cases were begun on the day after labour, never later than on the fourth day. On the first day they lasted for 10 minutes, on the second for 20 minutes, and on the other days for 30 minutes. No compulsion was used, and no patient refused to carry out the exercises; the majority enjoyed them. In most cases the tone of the muscles was above the average when the patient left the hospital; the result was poorest in phlegmatic women or in those who had no enthusiasm for the exercises. No marked effect upon the action of the bowel could be traced. Of the patients who had performed the exercises 1 rose on the sixth day, 43 on the seventh day, 38 on the eighth, 19 on the ninth, 4 on the tenth, 1 on the eleventh, and 1 on the twelfth. The patients all felt better and stronger on getting up than after labour without the exercises. In conclusion, Dr. Ballantyne considered that the ordinary hospital patient after a normal labour should rise on the eighth or ninth day; that systematised exercises during the early days of the puerperium were helpful in keeping the muscles in good tone, and that when these exercises were carried out the patient might rise safely on the seventh day.—The discussion on this paper was postponed until the next meeting of the society on Jan. 12th.—Dr. B. P. Watson and Mr. Henry Wade contributed a paper on the Histological Changes associated with an Early Abortion and the Anatomy of the Ovum.

Nottingham Medico-Chirurgical Society.—A meeting of this society was held on Dec. 15th, 1909, Dr. Adam Fulton, the President, being in the chair.—A resolution of sympathy with Mrs. Ransom on the death of Dr. W. B. Ransom was proposed by the President, seconded by Dr. C. H. Cattle, and passed unanimously, the members rising in silence to signify their assent.—Dr. Cattle read a paper entitled "Milk—Sweet and Sour." He contrasted the various views as to whether man was morphologically a carnivorous or a herbivorous animal and summed up chiefly in favour of a lacto-vegetarian diet. He considered that too much meat was habitually eaten, and that many diseases, such as gout and arterio-sclerosis, were due to the use of food containing purin bases. Milk ought to form part of the ordinary dietary. A pint of milk had a heat-producing power equivalent to 325 calories; its chief constituents were proteids, fats, and carbohydrates, with practically no uric acid bases. An almost perfect diet was cheese with bread and milk. Owing to the presence of impurities milk should always be heated to at least 160° F. before use. On account of the putrefactive agents in the colon being more active in an alkaline medium it was a distinct advantage in a medical point of view that milk should be subjected to the process of souring and that it should reach the colon in an acid form. Souring was best brought about by adding Bulgarian bacilli to boiled milk and allowing it to incubate. Metchnikoff looked upon sour milk as an intestinal antiseptic. Dr. Cattle said that he was at present treating cases of typhoid fever by this method and the results were very gratifying.

Liverpool Medical Institution.—A pathological meeting of this society was held on Dec. 9th, 1909, Mr. T. H. Bickerton, the President, being in the chair.—Mr. R. J. Hamilton showed two Orbital Tumours removed by Krönlein's operation. One of them was a fibro-sarcoma which surrounded the outer two-thirds of the optic nerve, while the other was an endothelioma springing from the suture between the great wing of the sphenoid and orbital plate of the frontal bone.—Dr. G. G. Stopford Taylor and Dr. R. W. MacKenna showed under the microscope (1) a section of pityriasis rubra, and (2) a section of tuberculosis cutis, which clinically suggested blastomycetic dermatitis. They also showed the spirochæta pallida revealed by the Leitz dark ground illuminator; the organisms were present in large numbers, and their movements could be easily studied.—Dr. T. R. Bradshaw and Dr. Ernest E. Glynn showed a case of Latent Cancer of the Œsophagus. It was situated at the bifurcation of the trachea, infiltrating both bronchi; the left lung was emphysematous, the right lung collapsed.—Dr. R. J. M. Buchanan and Dr. Glynn showed a specimen of Acute Pneumonic Phthisis; the lower lobe of the right lung was in a condition of caseous pseudo-lobar pneumonia; there were no pneumococci in the lung tissue, but there were numbers of tubercle bacilli and staphylococci.—Mr. Keith W. Monsarrat read a note on Hypernephroma of the Kidney occurring in a man aged 27 years, who had suffered on two occasions from right renal colic associated with hæmaturia.—Professor B. Moore read a note on the Cardiac and Hæmolytic Action of the Sapo-glucosides.

Bradford Medico-Chirurgical Society and Bradford Division of the British Medical Association.—A joint meeting of the above societies was held at the Bradford Royal Infirmary on Dec. 14th, 1909, Dr. Ward Ward-Smith being in the chair.—The evening was devoted to the demonstration of clinical cases and pathological specimens, of which the following are a selection.—Dr. Adolph Bronner gave a demonstration on patients of Direct Laryngoscopy, Tracheoscopy, and Bronchoscopy by Killian's and Jackson's instruments; he also showed some cases of Deviation of the Nasal Septum treated by Killian's method of submucous resection.—Mr. J. Basil Hall showed (1) some Carcinomatous and Fibroid Uteri removed by abdominal hysterectomy and by Wertheim's operation; and (2) a Hat-pin removed from the Left Bronchus through a low tracheotomy opening.—Dr. T. Jason Wood showed a case after Laminectomy for Paraplegia due to Spinal Caries.—Dr. Andrew Little showed (1) Bifocal Spectacles; and (2) a case after operation for Double Mastoid Disease, Subdural Abscess, and Lateral Sinus Thrombosis.—Mr. Rawlinson showed a case of "Winged Scapula."—Mr. F. W. Goyder showed a case after Removal of the Nose, the Left Cheek, and Anterior Wall of the Antrum for Epithelioma secondary to Lupus.—Mr. W. G. S. Brown showed an Aortic Aneurysm which perforated the Sternum, and a Stomach after Gastro-enterostomy.—Mr. H. C. Ling showed a case exhibiting Spasm of the Muscles supplied by the Ulnar Nerve.—Other specimens were shown by Mr. James Phillips, Mr. W. H. Horrocks, and Dr. C. F. M. Althorp.

Reviews and Notices of Books.

Annals of Tropical Medicine and Parasitology. Liverpool: At the University Press; London: Archibald Constable and Co. Vol. II., No. 4. Illustrated. Pp. 66. Price 7*s.* 6*d.* net. Vol. II., No. 5. Illustrated. Pp. 60. Price 7*s.* 6*d.* net. Vol. III., No. 1. Pp. 256. Price 10*s.* 6*d.* net.

In No. 4, Vol. II., of the Annals Professor Benjamin Moore, Dr. M. Nierenstein, and Professor John L. Todd make a contribution Concerning the Treatment of Experimental Trypanosomiasis, Part II. This paper continues the work already published by these observers on the treatment of experimental trypanosomiasis. They point out that of the rats which were still alive at the date of the publication of their last paper those treated with atoxyl alone have all died from trypanosomiasis, while those treated with atoxyl followed by mercury survived until they died from pneumonia or were killed on account of skin diseases. An account is given of several drugs and combination of drugs which were tried without advantage upon rats infected with Trypanosoma brucei. Among these were various preparations of quinine, cinchonine, arrhenal, and potassium bichromate. Several aniline dyes were tried, but none of them were of much value. In the treatment of dogs, guinea-pigs, and mice the acetylated atoxyl followed by bichloride of mercury gave the best results. Those treated by acetylated atoxyl or atoxyl alone were not so satisfactory. None of these methods generally cure well-established infection in these animals. In the case of rabbits atoxyl followed by bichloride of mercury was found much better than atoxyl alone. Atoxyl and mercury combined are also distinctly superior to atoxyl alone in the treatment of donkeys, but neither method cures a well-established infection. The treatment of rats, infected with Trypanosoma brucei, by trypanroth followed by bichloride of mercury is superior to treatment by trypanroth alone, but inferior to the treatment with atoxyl and bichloride of mercury. Generally inoculations made from animals in whose blood trypanosomes could not be found were negative; a few, however, were positive. These cases are of considerable interest, for although the incubation period in them was considerably lengthened, once the parasites appeared in the blood the course of the disease was normal and the animals died in the usual time. Mr. R. W. Orpen describes an unusual case of Goundou. Mr. Henry Simms contributes a valuable article on Subdrainage as Applied to the Anti-malarial Campaign on the Isthmus of Panama. On the isthmus the rainfall is very heavy, averaging about 180 inches on the Atlantic coast and 80 inches on the Pacific coast. The rainy season lasts from May to December inclusive. With this long period of heavy rainfall open drains and the use of larvicides were practically impossible, for all the pools could not be covered with paraffin. The only practical method was to get rid of the water and not allow it to stand. Mr. Simms points out that on the isthmus Anophelines breed in clear running water during all months of the year, so that the annual expense of an open ditch system of drainage would be prohibitive. He then describes the method of subdrainage which was adopted. Porous unglazed tiles were used and the results have been of the most satisfactory nature. The article is of a very valuable and practical nature. A new culicid genus is described by Mr. F. E. Theobald, and Mr. Frank Jeans contributes an interesting article on Inflicted Talipes of the Chinese. In a previous number of the Annals (Vol. I., No. 4, 1908) Dr. A. Broden, director of the laboratory, and Dr. J. Rodhain, director of the hospital for the blacks at Leopoldville in the Belgian Congo, described some cases of natural infection with the parasite Porocephalus moniliformis. This linguatulid produces fatal results in the human subject, and no treatment is available. It also infects monkeys and other mammals, and snakes. The authors found several monkeys and snakes infected with the parasite, and in order to elucidate its life cycle infected various animals experimentally. As the result of their experiments they come to the conclusion that the larval form is found in the monkey, the adult form in snakes. Men and various mammals, such as monkeys, rats, and cats, become infected through swallowing the eggs of the parasite; they are the intermediate hosts. Snakes, particularly large snakes, become infected by swallowing the intermediate hosts; they are the true hosts of the parasite. A new species of porocephalus is described by Dr. Anton Breinl and Mr. Edward Hindle, and there are articles on Comparative Chemo-therapeutical Study of Atoxyl and Trypanocides and Chemical Notes on Atoxyl by Dr. Nierenstein.

The first contribution in No. 5, Vol. II. of the Annals, is on the Nomenclature of the Mammalian Trypanosomes Observed in North-Western Rhodesia, by R. Eustace Montgomery, M.R.C.V.S., and Dr. Allan Kinghorn. This is a plea for a classification of trypanosomes, for which the authors claim a practical value for members of expeditions working in foreign countries. They use the morphological characters which are obvious, even with the apparatus at the disposal of a traveller, combined with some very obvious clinical reactions in different species of trypanosomes which are morphologically similar. As a rough-and-ready method of classification this seems practical, although it may possibly lead to some confusion. Dr. Breinl contributes an article, Experiments on the Combined Atoxyl-Mercury Treatment in Monkeys Infected with Trypanosoma Gambiense. In five out of six cases he apparently obtained a complete cure by the administration of acetylated atoxyl and sublimate, or Donovan's solution. Mr. Prosper H. Marsden describes some new Drugs from the Congo, and Mr. E. H. Ross a Gregarine Parasitic in the Dog-Flea. Dr. Breinl and Dr. Nierenstein, in an article on the Action of Aryl-Stibinic Acids in Experimental Trypanosomiasis, describe the results of a number of experiments with organic antimony compounds. Plimmer and Thomson first described experiments upon the trypanocidal action of antimony, and their work was confirmed and enlarged by Mesnil and Brimont and other observers. The present authors find that the antimony compounds used by them gave very excellent results, although they claim that they are not so powerful as the potassium antimonyl tartrate used originally by Plimmer and Thomson. Dr. Breinl and Dr. H. E. Annett in a note on the Mechanism of Hæmolysis in Piroplasmosis Canis come to the conclusion that the hæmolysis and hæmoglobinuria in infections with Piroplasma canis are due to a disintegration of red blood corpuscles after the escape of the parasites from them.

The first number of Vol. III. consists of a lengthy description of an investigation into the mechanism of the production of blackwater fever, by Dr. J. O. Wakelin Barratt and Dr. Warrington Yorke. An enormous amount of valuable and detailed information is contained in this report, but it must be regarded rather as an exhaustive collection of facts than as affording any solution to the problem of the cure or prevention of the disease. The first section deals with the hæmolysis of red blood cells by quinine, and also by acids, alkalies, and urine. Quinine bihydrochloride and quinine in the alkaloid state produce hæmolysis of red blood cells, as do also hydrochloric acid and sodium hydrate. The authors show, however, that, owing to the toxicity of quinine, its concentration in the blood cannot reach an amount sufficient to allow of its hæmolytic action in cells taking place during life. The red blood cells during blackwater fever are not hæmolysed by quinine bihydrochloride more readily than they are in health. After dealing exhaustively with many observations regarding the mechanism of suppression of urine in blackwater fever, the authors come to the conclusion that it is of mechanical origin due to the blocking of the renal tubules. With regard to the mechanism of production of blackwater fever, the authors come to the following conclusions. In the urine in blackwater fever red cells may be found during hæmoglobinuria, usually in very small numbers. In blackwater fever the hæmoglobinuria which occurs is the result of an accompanying hæmoglobinæmia. Sufficient data are not available to determine the situation in which laking of the cells, leading to hæmoglobinæmia, occurs in blackwater fever. The details of a large number of cases of blackwater fever being given with exhaustive tables and charts make the article a complete account of the clinical features and pathology of blackwater fever.

These annals are of great use to all investigators.

The Apologia and Florida of Apuleius of Madaura. Translated by H. E. BUTLER, Fellow of New College. Oxford: At the Clarendon Press. 1909. Pp. 238. Price 3*s.* 6*d.* net.

APULEIUS of Madaura, a town in Numidia, is best known to modern readers as the author or preserver of the story of Cupid and Psyche, a tale embodied in his novel commonly called "The Golden Ass." Delightful as that novel is, with its tales of robbers and witches, there is a work of Apuleius of far more interest to medical readers—namely, the Apologia—and this treatise, together with another, the Florida, have recently been rendered accessible to English readers in the admirable translation of Mr. H. E. Butler. The style of Apuleius presents great difficulties to a translator. It is extremely bombastic and abounds with words which are hardly Latin. It may be compared to the English which we should expect from an educated foreigner who had saturated himself with the writings of Ouida and was well read in quack pamphlets. The occasion of the Apologia was a charge brought against Apuleius in the courts at Sabrata, now Zowâra, some 60 miles west of Oea, the modern Tripoli. He was accused of having won the love of a rich widow of Oea by magic, of having married her solely for her money, and of being a man of immoral life. The charges were so absurd, and the character of Rufinus—his principal accuser, though the case was not brought in his name—was so shady, that it cannot be doubted that Apuleius was acquitted, although we do not know that he was so. Scattered throughout the Apologia, the speech which he made in his defence, are a number of incidents having a medical or scientific bearing, some of which throw a curious light upon the social habits of a Roman town in North Africa in the second century A.D. For instance, one of the counts in the indictment was that Apuleius had written to a friend in verse sending him some tooth powder, as if, says Apuleius, sending a friend tooth powder was equivalent to sending him poison:—

> "...... ex Arabicis frugibus,
> Tenuem, candificum, nobilem pulvisculum."

Another count charged him with having a mirror: "habet speculum philosophus." So horrible was this considered that Pudens, counsel for the prosecution, nearly exploded as he declaimed against it, "pro rei atrocitate paene diruptus est Pudens clamitans." However, the charge was the occasion for Apuleius to give a display of his learning about mirrors and the physics of light, a discourse which, doubtless, edified the fashionable people who had come to hear the trial. More serious charges were that he had gone about asking the fishermen to get him curious "fish"—i.e., marine fauna in general—that he had actually dissected them, that he kept "something at home which he worshipped in secret" (this last charge he disposes of by saying that, even if he did, it was much better to worship something than nothing), and, worst of all, that a boy fell to the ground in his presence owing to his incantations. As regards this charge, Apuleius says that everybody knew that the boy in question was epileptic who had fits every three or four days without any incantations, "his face is ulcerous, his head bruised in front and behind, his eyes are dull, his nostrils distended, his feet stumbling," a very good picture of the confirmed epileptic. Further, says Apuleius, everyone knows that the boy is of revolting appearance and that his body is rotten with disease. Probably he was tuberculous in addition to being epileptic.

To return to the charge of the "fish," which the prosecution said was "a sea hare," Apuleius replies that it was not a sea hare but another kind of "fish" of which he did not yet know the name, "necdum etiam decerno quid vocem," but it was unique in one respect, so far as he knew, in having "twelve bones resembling the knuckle bones of a sucking pig, linked together like a chain in its belly." The sea hare (*Aplysia depilans*) is a mollusc and well known, so it is probable that the "fish" to which Apuleius refers was a mollusc also. It seems impossible to identify, and the only mollusc to which it might refer is *Scaphander lignarius*, which has three gizzard plates of a bony material, and the surfaces of two of these somewhat resemble the articular surfaces of small knuckle bone. It was perhaps fortunate for Apuleius that the animal was not a "sea hare," for that was a well known ingredient in magic concoctions and does secrete a poisonous substance, while it has a peculiarly offensive odour.

To pass to the Florida. This treatise is a collection of "elegant extracts" from the speeches of Apuleius, selected by himself or possibly by one of his admirers. Extract 19 is a story about Asclepiades, a famous physician who rescued a man from the jaws of death. Another extract is a glorification of Apuleius' own talents. The second extract is a remarkable passage on the eagle's power of flight and vision, and we quote a portion of it together with Mr. Butler's translation, a translation in which, knowingly or unknowingly, he has followed the style of Jeremy Taylor:—"Aquila enimvero cum se nubium tenus altissime sublimavit evecta alis, totum istud spatium, qua pluitur et ninguitur, ultra quod cacumen nec fulmini nec fulguri locus est, in ipso, ut ita dixerim, solo aetheris et fastigio hiemis: cum igitur eo sese aquila extulit, nutu clementi laevorsum vel dextrorsum tanta mole corporis labitur, velificatas alas quo libuit advertens modico caudae gubernaculo, inde cuncta despiciens eminus, inhibens pinnarum indefessa remigia ac paulisper cunctabundo volatu paene eodem loco pendula circumtuetur ...." ("The eagle, on the other hand, soars exceeding high in heaven to the very clouds ...... and having towered thus high, with gentle motion he turns his great body to glide to left or right, directing his wings, that are as sails, whither he will by the movement of his tail, which, small though it be, serves as a rudder. ...... ") This passage might well be a description of a modern aeroplane, and it is curious to note how much Apuleius, with all his florid style, was indebted in the passage quoted to the Æneid.

Mr. Butler is to be congratulated for the manner in which he has set forth the writings of a most interesting personality in an English dress.

Age Incidence, Sex, and Comparative Frequency in Disease. By JAMES GRANT ANDREW, M.B., C.M.Glasg., F.F.P.S.Glasg. London: Baillière, Tindall, and Cox. 1909. Pp. 439. Price 10*s.* 6*d.* net.

THE registration of sickness occurring in hospital practice is one of the pressing needs of modern medicine. It has repeatedly been protested that in this country the records of that important section of national sickness which is treated at the public expense has never been put to its full use. In the interests of vital statistics more especially, the continuance of this waste at the present day is greatly to be deplored, for it is obvious that the records of mortality alone can never supply that accurate knowledge of the local prevalence of sickness which is essential to the due protection of the people's health. We therefore gladly draw attention to a recent work by Dr. James Grant Andrew of Glasgow on the age and sex incidence of the principal diseases, and on the comparative frequency of their occurrence among patients admitted to the wards of a large public institution. For the purpose of this investigation access has been obtained to the clinical records of 42,603 cases under treatment during the last ten years in the Western Infirmary of Glasgow. Now although this number, in the aggregate, is considerable, it appears to us that when, as in the present case, the total is subdivided under numerous headings, the facts included in some of them must be too few for profitable statistical study; by extension of the inquiry to other hospitals a more adequate basis of observation might have been secured, with proportionately increasing value to the results. That the author virtually admits the force of this contention we gather from his intimation that, in some instances cited by him where the numbers of cases under examination were insufficient to establish a conclusion, he has not hesitated to compare his own experience with that of other observers, and to notify differences accordingly. He nevertheless inclines to the opinion that, for the objects he has now in view, satisfactory results have been achieved by limiting inquiry to the hospital here referred to. With the object of justifying the publication of a separate treatise on subjects that are already fully discussed in every modern text-book of medicine the author contends that in order to perfect the clinical classification of diseases and to aid in their diagnosis in hospital practice there is an actual need for such a work as the present. Although at present it would perhaps be Utopian to seek for an extension of the provisions of the Registration of Deaths Act so as to include the registration of non-fatal sickness as well as of mortality, yet this is the direction in which we are tending.

In order to augment the value of his work for diagnostic purposes, Dr. Andrew has undertaken the laborious task of classifying, by age as well as by sex, several thousand cases of disease, indicating in most instances the particular stage of life at which his experience shows each particular disease to have been most prevalent. He is fully aware of the fallacies which might, and which actually do, affect this method of disease classification. Among others there is the common fallacy that the cases, being hospital patients, are presumably above the pauper class, on the one hand, and for the most part below the self-supporting class, on the other. Moreover, the figures given relate, not to the date of attack by a given disease, but to the date of admission to hospital, and it is the unfortunate fact that these dates may be widely separated. The author is careful to point out that in considering the frequency of disease, as illustrated by the instances cited in his book, the records are those of a large general hospital. On this point he continues: "It might also be argued that these records deal with a severer type of disease than is met with in private practice, and that many of the purely functional disorders are never met with in hospital; but though this may be correct, a large majority of the cases were admitted, not for special medical or surgical treatment, but for special nursing, so that the disease, as found in hospital, is simply the disease of private practice writ large." Nevertheless, it appears to us clear that the cases dealt with in this book are essentially "selected cases," and that therefore the statistics respecting them are not properly comparable with those respecting the community in general.

Treating of the relation of sex and age to the chief forms of disease Dr. Andrew proceeds to show that, apart from affections of the generative organs, of which women are most frequently the victims, a large majority of diseases are more common in males than in females. Taking the entire series of 42,603 cases we read that not less than 61 per cent. of them were of the male sex. Among affections of the more important organs we learn that pulmonary diseases were more prevalent among males than among females in the ratio of three-fourths to one-fourth. Of pulmonary diseases generally, the cases among males predominated in various proportions. Thus of the cases of acute pneumonia 82 per cent. were males; of the cases of pulmonary tuberculosis, 67 per cent.; of the cases of bronchitis, 71 per cent.; and of the cases of pleurisy and empyema, 74 per cent. The only instance in which female cases preponderated was that of asthma, where the proportions were 64 per cent. for females and 36 per cent. for males. The age-period 20 to 30 years is that in which the largest number of pulmonary affections occurred. In this period the highest proportion of cases of acute pneumonia were observed, and the cases of acute pleurisy were then more frequent than in either the preceding or the succeeding decade. Tuberculous phthisis was also more common in this decade than in any of the others. Between the ages of 30 and 40 asthma was most common, the cases being then more numerous than in any other equal period. Between the ages of 40 and 50 chronic bronchitis became the prevailing type of lung disease; nor were the numbers greatly exceeded in either of the succeeding decades. The pulmonary affection most frequently observed was acute pneumonia. Up to 40 years of age cases of this affection were in excess at every decade, but after that age they gave place to chronic bronchitis. Tuberculous phthisis followed in order of frequency, and the cases of this disease among young adults were only less numerous than those of pneumonia. Next in frequency in this series came diseases of the stomach, which accounted for about 4 per cent. of the total. Taken together, the affections of this organ were more frequent in females than in males in the proportion of two-thirds to one-third. This is due to the exceptional liability of females to suffer from gastric ulcer, not less than 90 per cent. of the cases of which affection occurred in women. Nearly half the total cases of disease of the stomach were diagnosed as gastric ulcer, the largest proportion of which occurred at ages between 20 and 30. Respecting the relative frequency of the various affections of the stomach at later ages it may be said that between 30 and 40 years dilatation and simple stricture were the most frequent, while between 50 and 60 carcinoma was pre-eminent.

Taking together the 1474 recorded cases of disease of the heart we find that there was a greater frequency of disease among males than among females. This was accounted for by the larger number of cases of angina pectoris and of aortic disease in men. Other affections of the blood-vessels were also more frequent in the male sex; this was due to the large number of cases of aneurysm recorded, 87·6 per cent. of which were in men. Of the 1475 recorded cases of kidney diseases, 62·9 per cent. were in males. Abscess, calculus, Bright's disease, and paroxysmal hæmoglobinuria were more frequent in the male sex, whilst carcinoma and tuberculosis of kidney were commoner in the female.

A study of the relative frequency of disease helps to diagnosis in two ways: first, by making it possible to contrast the comparative frequency of different diseases of the same organ at all ages; and secondly, by enabling one to ascertain the ratio of frequency at different ages. To show how the relative frequency of disease might be used as an aid to diagnosis Dr. Andrew quotes from his returns the case of affections of the anus, among which the most common are hæmorrhoids. But hæmorrhoids are not the most frequent of these affections at every stage of life. Among his 42,603 cases not a single case of this affection occurred below the age of ten years. The most frequent anal trouble recorded during the first and second decades of life was fistula; in the third decade the cases of hæmorrhoids and of fistulæ were equal in number; but in the four subsequent decades the number of cases of hæmorrhoids exceeded that of any other condition. From these data Dr. Andrew concludes that, given an anal affection in a patient under 30 years of age, the probability is that the condition is one of fistula or of ischio-rectal abscess, and if the patient is over 30, and more particularly if he is over 40, years of age, the probability is that the condition is one of hæmorrhoids.

Enough has been said to induce others, we hope, to follow the example of Dr. Andrew and to establish where practicable a hospital register of disease.

LIBRARY TABLE.

Tuberculosis of the Nose and Throat. By LORENZO B. LOCKARD, M.D., Laryngologist and Rhinologist to the Jewish Consumptives Sanatorium, &c. With 85 illustrations, 64 being in colours. St. Louis: C. V. Mosby and Co. 1909. Pp. 384.—The first chapter consists of a historical survey of laryngeal tuberculosis commencing at 400 B.C. and going down to the year 1886, when what Dr. Lockard aptly terms the inauguration of a rational therapy occurred, the brilliant work of Heryng taking the medical profession by storm, though two decades have been required to establish the soundness of his views; in America especially there has been great opposition to surgical interference in laryngeal tuberculosis. The vexed question relative to the occurrence of primary infection of the larynx is investigated with care, the opinions of the most competent observers being given, and the deduction Dr. Lockard makes is practically that the existence of primary laryngeal tubercle is not proven. Chapter III. also deals with controversial matter—i.e., infection, endogenetic and exogenetic. Here, again, Dr. Lockard gives all the information he considers advisable, and expresses the opinion that both methods of infection exist. Under Pathology we find nothing new, but there is a useful *résumé* of our knowledge as it exists at the present day. We notice that Dr. Lockard is in agreement with those who deny the value of early laryngeal pallor as a diagnostic sign. The view taken as to the prognosis is that recoveries are met with in from 50 to 60 per cent. of the cases, not taking into consideration the ultimate fate of the individual. If this estimate is correct it speaks volumes for the modern treatment of this complication. All forms of treatment are ably set forth with general rules for their application. The latter portion of the book is devoted to nasal and oral lesions and adds materially to the usefulness of this monograph, which is the last work on the subject in our language. It is also exceedingly well illustrated and so will prove invaluable to those interested in the subject.

The Care of Children from Babyhood to Adolescence. By BERNARD MYERS, M.D. Edin., M.R.C.S. Eng. With a Preface by GEORGE F. STILL, M.D. Cantab., F.R.C.P. Lond. London: Henry Kimpton. Pp. 172. Price 1*s.* 6*d.*—This book is written for the use of mothers and nurses, and we quite agree with Dr. Still when he says in his preface that "the volume Dr. Myers has written is full of sound common-sense instruction upon just those points upon which mothers and nurses need information." The ideal nursery which Dr. Myers advocates is perhaps too ideal for any parent to have the means to carry out except a millionaire, but all the same it is the one to aim at. The directions as to feeding and the like are very plainly and simply written, so much so that we can hear many a mother or nurse saying, "Well, of course, I know that." But we recently heard, and heard definitely, of a well-to-do family in which an infant of six months old was brought down to dinner on Christmas Day and given crystallised fruits and port wine, so that instructions on elementary matters are not unnecessary.

The Pilgrim Fathers. By WINIFRED COCKSHOTT. London: Methuen and Co. Pp. 348. Price 7*s.* 6*d.* net.—The history of the Pilgrim Fathers must always be of interest to the inhabitants of this country, and of England in particular, for it shows our countrymen at their best and worst. At their best on account of the stern determination to obtain freedom of action and of religion for themselves, at their worst in that freedom of action for themselves came to mean no freedom for anyone else. As Miss Cockshott well puts it: "The future career of the Puritans both in England and Massachusetts showed plainly enough that it was not religious liberty that they claimed, but Puritan domination." It is not the province of this journal to discuss the various causes, religious and secular, which led to Separatism, and which led the Separatists first to settle in Leyden and finally in America in the district which is now Massachusetts. But there are sundry interesting medical points to which we may draw the attention of our readers; for instance, the Rev. John Smyth, who was a conforming cleric at Lincoln as late as 1605, was some four years later in Amsterdam as a member of the Separatist congregation which called itself the Ancient Church. About 1609, disgusted with the bitter Calvinism of this body, he started a congregation of his own, "the second English Church of the Separation." He died in 1612, and it is recorded of him that he had no salary from the church, "supporting himself as a doctor, and from the sick poor he took no fees, and from the richer sort only one-half as much as other doctors did." Whether he had had any medical education whatever Miss Cockshott does not mention. Owing to difficulties with the Dutch, and for various other causes, the members of the Separatist English congregations in Leyden determined to go to America, and they finally arrived in the *Mayflower* at Cape Cod on Nov. 21st, 1620, after having been 65 days at sea. Plymouth, where the colony was finally established, was on the western side of Cape Cod Bay. As might be expected, most of them were exceedingly sea-sick, and one of the sailors "would always be contemning the poor people in their sickness and cursing them daily with grievous execrations." He also was kind enough to say that he "hoped to cast half of them overboard before they came to their journey's end, and to make merry with what they had ...... but it plase GOD, before they came half the seas over, to smite this young man with a grievous disease, of which he died in a desperate manner, and so he was himself the first that was thrown overboard." Only one passenger died on the voyage, but the losses to the colonists during the first winter were appalling. Of 104 persons who landed—namely, 92 adults and 12 children—48 adults and 5 children died in the first year, and of 18 married women 14 died. Exposure, bad weather, and the anxiety natural to their position, with poor food, seem to have been the cause of the mortality; "coughs and colds, the weather proving suddenly cold and stormy, which afterwards turned to the scurvey whereof many died." Still they struggled on and the colony grew and prospered, entering into federation with the neighbouring colonies, while at the same time legislation grew more and more restrictive until practically no one could do anything without the consent of the Courts of Commissioners of the federated colonies. Some of the restrictions were of value; for instance, Francis Crooker wished to marry Mary Gaunt, and he was ordered by the court to get first a certificate "that the disease from which he is sometimes troubled is not the falling sickness." Plymouth ceased to be a separate colony in 1691, being then incorporated in Massachusetts. We have only space for one more delightful piece of information. The stoicism with which the Red Indian bears pain is well known, and it struck the Pilgrim Fathers with amazement. But it is cheering for us who suffer in these days to learn that "toothache is the onely paine that will force their stout hearts to cry." We are grateful to Miss Cockshott for a most interesting book.

Our National Drink Bill. By JOHN NEWTON. London: James Nisbet and Co., Limited. 1909. Pp. 155. Price 1*s.* net.—This little book is written for the National Commercial Temperance League, whose aim "is to spread the principles of total abstinence amongst commercial, professional, and business men." It marshals an array of facts and figures which are certainly imposing. It is evident, and no one will deny it, that we as a people spend a vast amount upon alcoholic drinks, no less, according to Mr. Newton, than (in 1907) £167,016,000, though he does not say how he arrives at these figures. Over-indulgence in alcohol is certainly a cause of disease, of crime, and of poverty; neither do medical men need a book to tell them this. But it must be remembered that the consumption of alcoholic drinks is steadily decreasing, and has been doing so for some years. Mr. Newton's last chapter demands a variety of impossible conditions, such as that no man should be allowed to go into a public-house under the age of 21. Also he asks that "Sundays, Christmas day, Good Friday, and bank holidays should be religiously shut out from facilities for drinking." We agree with Mr. Newton's contention that a good deal of the money spent on drink is wasted, but we cannot follow him in all his suggested remedies.

Where Knife is Driven: A Story. By MAX TROTTER, M.D. London: Arthur H. Stockwell. Pp. 80. Price 1*s.* net. —This is excellent fooling; it is a skit on the numerous and foolish stories describing hospital life and medical matters which appear from time to time in serial publications and in book form. Readers may recall a novel which had a great vogue in which a large dance was given to the nurses of a London hospital *in the operating theatre.* The incidents in the little book before us are as wildly improbable but more amusing. Dr. Trotter's pamphlet, for it is little more, would make an excellent Christmas card to send to house surgeons and nurses; the hilarity of all would be increased by its perusal. The frontispiece is very funny; it is a faked photograph of a very sentimental scene in which the representation of the heroine hardly tallies with her description in the text.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and figures in the text. New Series, No. 215 (Vol. LIV., Part 3). December, 1909. London: J. and A. Churchill. Price 10*s.* net.—This part of the *Quarterly Journal of Microscopical Science* contains four memoirs, of which the first is a detailed account of the Formation of the Layers in Amphioxus and its Bearing on the Interpretation of the Early Autogenetic Processes in Other Vertebrates, by E. W. MacBride, D.Sc., LL.D., F.R.S., Strathcona professor of zoology in McGill University, Montreal, with four plates and ten text figures. Dr. MacBride gives an historical *résumé* of the development of amphioxus in which he briefly sums up the statements of Kowalewsky, Hatschek, Lwoff, and others, as well as his own, which last were criticised in a hostile sense by Cerfontaine. The present memoir is an effort to establish and to extend his former statements. He describes the process of gastrulation in amphioxus as leading to the formation of a single layer of invaginated cells which appear to be uniform. The closure of the blastopore in amphioxus is due to the concrescence of the lateral lips of the blastopore and to the upgrowth of the ventral one. By these processes the ventral, not the dorsal, surface of the embryo is formed. The mesoderm owes its origin to the outgrowth of fine cœlomic pouches from the archenteron, as in balanoglossus. The formation of the layers in other vertebrata can be derived from that of amphioxus by allowing for the disturbing influence of food yolk in the ventral wall of the archenteron, and in mammalia for the disturbing effect of contact with the uterus. 2. The Structure, Development, and Bionomics of the House Fly, Musca Domestica, Linn., by C. Gordon Hewitt, D.Sc., late lecturer in economic zoology, University of Manchester, with a plate. This article is dealt with in an annotation on p. 42. 3. The Development of the Temnocephaleæ, by Professor W. A. Haswell, M.A., D.Sc., F.R.S., with three plates. The temnocephala is one of the plastode worms, with the rhabdocœls and heterocotyle as its allies. 4. Experimental Observations on the Organs of Circulation and the Powers of Locomotion in Pennatulids, by Edith M. Musgrave, D.Sc., late Honorary Research Fellow in the University of Manchester, with two plates. Mrs. Musgrave thinks that it is extremely probable that the main impetus of the circulating medium has its origin in the stalk, whilst spiral or twisting movements are due to the oblique musculature of the stalk.

Edinburgh Medical Journal.—In the December number Dr. James Ritchie deals with the influence of the tissues of the body on the incidence and the treatment of disease, emphasising the effect of temperament and the importance of considering the soil in which a germ grows as well as the germ itself. Professor Ed. Béraneck of Neuchâtel contributes a paper on the use of the form of tuberculin associated with his name, which has now gained a considerable degree of favour, and Dr. H. Torrance Thomson and Dr. Denis Cotterill write on the use of Scopolamine-morphine Narcosis, of which their experience is very satisfactory. A report on the Cytological Examination of the Discharge from a Suppurating Maxillary Sinus, by Mr. John W. Darling, tends to show that excess of lymphocytes is not necessarily here connected with chronicity of the inflammatory process, but that it is of bad prognosis for recovery without operative measures; the presence of streptococcus pyogenes is also unfavourable. Mr. J. W. Dowden records a case in which a glass tumbler was extracted from the rectum.

The Medical Chronicle.—An interesting paper by Dr. Judson S. Bury in the December issue of this review deals with the paralysis which may occur in chorea, and records a unique case in which the condition remained permanent. Dr. W. B. Warrington writes on some acute cerebral diseases, noting, among other things, a form of cerebral hæmorrhage met with in children and young persons as a complication of an insidious nephritis; and Dr. Thomas Milnes Bride compares the value of silver nitrate, protargol, and argyrol respectively in conjunctivitis, finding the first-mentioned drug the most effective, but advises previous trial of the others as being less painful.

L'Hygiène. Revue Mensuelle Illustrée. Vol. I., No. 1. Price 2fr. 50c.—This admirably got up review, which is published by Messrs. Goupil and Co. in Paris, and also at 25, Bedford-street, Strand, London, W.C., promises to be of great interest to the public as well as to all sanitarians, and if its production can be kept up to the level of the first number it will be a model of sumptuosity among periodicals. We are used to admirable illustrations of scientific subjects now and again in our monthly contemporaries, and, where the quality of paper allows it, many of them give us delightful reproductions in various forms of colour process also; but we know of no magazine appealing fairly directly to a scientific audience which sets such an example of artistic form, and we presume the intention is to persuade the public to be interested in matters which deeply concern the public. The editor-in-chief, Dr. Maurice de Fleury, has obviously laid down for himself no hard-and-fast rules as to how many illustrations he will provide, but in the first issue, at any rate, he seems to have determined to supply pictures with every article either of topical or historical interest. The contents of the first issue of *L'Hygiène* are varied, but the style of treatment is always simple. The editor writes a general introduction; Professor Landouzy follows with the arguments for a crusade against tuberculosis; Professor A. Gautier writes on alcohol; and Dr. Étienne Burnet on tobacco; Dr. Paul Strauss describes the wonderful work for the preservation of infant life done by the late Pierre Budin; Professor Chantemesse and Dr. F. Borel discuss cholera; Professor Bouchard writes on *arthritisme* as a definite diathesis; and the closing pages are largely devoted to gastronomics. To the medical man, however, the most interesting article will probably be one on insanitary houses, by M. Paul Juillerat, chief of the Hygienic Bureau of the city of Paris; and if the beautiful *format* of the magazine carries it into many homes we can imagine that Paris at large, as well as Parisian sanitarians, may benefit greatly by reading this essay. It is a quietly written but tremendous indictment of certain nests of insanitary buildings, sunless and pestiferous, which breed tuberculosis in the very heart of Paris. Especially is M. Juillerat clear about the widespread evil done by that nest of vile and fascinating streets which lie behind the church of Saint-Merri. The Rue Quincampoix is signalled out for mention as being a hideous focus of disease, but in all probability the same conld be said of *les rues de* Venise, du Cloître Saint-Merri, Pierre-au-lard, Brise-Miche, and Taille-Pain—"un étrange lacis de ruelles baroques, sinueuses, étroites, calcinées comme par un incendie" (Georges Cain), which lie in immediate juxtaposition. M. Juillerat shows how this picturesque district is a regular breeding-ground of tuberculosis, and suggests forcibly by his revelations, if not in his actual words, that unless the city of Paris takes some large and concerted step—in other words, finds the money to compensate the owners and pulls the whole district down—matters will go from the extremely bad to an inconceivable worse. For there is no onus on the landlords of these sixteenth and seventeenth century slums to improve their property, while, paradoxical as it seems, the worse the condition of the houses the greater the revenue they bring from the gross overcrowding that goes on in them. The very poor and the criminal classes, whose contributions make in the aggregate an enormous rent, crush into any wretched corner in these scabrous old mansions, and contrive somehow to pay for the dangerous shelter which they afford. A good case in this way is made out for the demolition of the district, and we must not be found lamenting in The Lancet the approach of the day of destruction. None the less in these very streets Racine and Boileau took their *consommations*, Count Horn executed his famous assassination, the financier Law lived and ran the Mississippi scheme, and on all sides there is structural evidence remaining on the façades of many of the houses that they have sheltered in their day some of the best born of the French nation. All medical men must acquiesce in the necessity for pulling down a poisonous district, but, as the illustrations to M. Juillerat's article show, its demolition will deprive the artist of a vast number of ready-made pictures.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

OXYGENIA WATER.

(The Oxygenia Syndicate, 20, Lawrence-lane, Gresham-street, London, E.C.)

We have already recorded our analysis of this water when we gave it as our opinion that the amount of oxygen present was too small to be of any advantage. The most we found was 1·39 per cent. We have since received further samples which showed a decidedly higher percentage of oxygen gas. Thus in one experiment we found that the gas given off when the cork was withdrawn from the bottle contained 3 per cent. of oxygen. In another experiment the amount of oxygen found was 6 per cent. The water has a very pleasant fresh taste and contains small amounts of sodium carbonate and sodium chloride. We are not aware of any attention having been turned to the therapeutic effect, if any, of drinking water containing oxygen under slight pressure. It is probably harmless if it does not do good. Oxygen, at any rate, is a cleanly agent.

GLYCERINE EXTRACT OF RED BONE MARROW.

(Armour and Co., Atlantic House, Holborn Viaduct, London, E.C.)

It is not difficult to show that this preparation is as described, a combination of fresh raw marrow with glycerine. That being so, it, of course, contains hæmoglobin, marrow cells, nucleins, and other well-known restorative agents. The extract has been exhibited with excellent results in wasting diseases, in anæmia, and so forth, while it has been used also satisfactorily in cases of weakness due to hæmorrhage. The extract may be usefully combined with nux vomica or with arsenic or other well-known tonic principles. The extract contains about 88 per cent. of dry substances which include glycerine. The spectrum of hæmoglobin was easily recognised.

BREVON BREAD.

The Brevon Bread Co., 38 and 39, Edgecumbe-street, Stonehouse, Devon.)

We welcome the serious attention that is being given to the improvement of the quality of our daily bread. It is well known that in the past the demand for a loaf of an exceptionally white appearance has led to the supply of an impoverished flour. Brevon bread reaches a high nutritive standard, besides which it is of an easily digestible character, since 15·20 per cent. of it is soluble in cold water, part of the soluble matters consisting of proteins. The total proteins in the moist loaf amounted to 4·76 per cent. and the mineral matter to 0·83 per cent. The loaf had a good uniform texture and possessed an attractive flavour. We believe that particular regard is paid to the use of good materials in the making of Brevon bread.

SPADE COFFEE.

(Branson and Co., Limited, Chase Works, Clapham, London, S.W.)

Extract of coffee no doubt supplies a want, but it can rarely be compared favourably with the freshly made article. One difficulty in regard to the preparation of an "essence" is the preservation of the real coffee aroma which is due chiefly to oils. This difficulty has been satisfactorily met in the case of "spade" coffee, while evidence of its genuineness was found in the fact that there was present according to our analysis 0·41 per cent. of caffeine.

BUVO.

(Buvo, Limited, 26, Rosebery-avenue, London, E.C.)

Buvo is the name attached to a tablet which is said to contain beef extract combined with the antiscorbutic principles of vegetables. According to our analysis "buvo" contains 2·8 per cent. total nitrogen, but a very small proportion of this appears to exist in the form of protein. We regard the food value of "buvo," therefore, as, relatively speaking, small, on account of nitrogen, although in addition it contains about 7 per cent. of fat. The most important constituent present, because of its amount, is the mineral matter, which was as much as 67·74 per cent., consisting chiefly of common salt, with some phosphates.

PHOSPHATED PETROLEUM EMULSION (TIPPEE).

(Bash and Co., 35 and 36, Foley-street, Great Porter-street, W.)

This is a very well prepared emulsion containing, according to the statements of its makers, malt, iron, lime salts, glycerophosphates, and a small quantity of free iodine. Physicians will recognise the value of this formula in wasting diseases, particularly in phthisis and respiratory troubles. Owing also to the presence of well-known tonic constituents its use is suggested in anæmia, chlorosis, and nervous disorders. We proved the diastatic activity of malt extract and the presence of the constituents enumerated. Petroleum appears to be an excellent vehicle for these substances, but it has to be borne in mind that the hydrocarbon is not assimilated. It is stated that the petroleum used is of the highest quality having regard to the purpose for which it is intended.

ALL-MALT BEERS.

(Dymore Brown and Son, Limited, Royal Albert Brewery, Reading.)

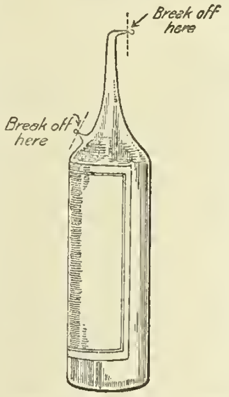
The fact that these beers are made from all malt and are satisfactory is an answer to the statement which is so often made that the use of substitutes, such as maize, rice, and sugar, is indispensable. The use of substitutes of course gives the beer permanent brilliancy, while when malt is exclusively used there is a tendency for the beer to become opalescent in the cold owing to the separation of proteins. Brightness, however, is usually recovered or maintained when the beer is kept at a normal temperature. The sample of ale sent to us by the above firm gave the following results of analysis: alcohol, by volume 5·78 per cent.; extract, 4·95 per cent.; mineral matter, 0·30 per cent.; and protein, 0·582 per cent. The stout proved to contain 7·40 per cent. malt extractives, including 0·66 per cent. of protein. These results are in perfect concordance with the statements of the brewers that these beers are prepared exclusively from malt. The amounts, in particular, of protein and phosphates support this claim. It is further stated that for bittering and preservative purposes only hops are used.

New Inventions.

DROPPER AMPOULES FOR THE ADMINISTRATION OF CHLOROFORM.

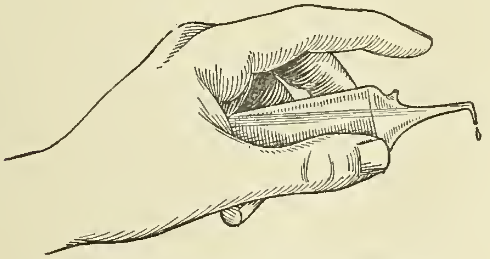
A RECENT addition to the numerous contrivances for the administration of chloroform has been made by Dr. F. H. McMechan, anæsthetist to St. Mary's Hospital in Cincinnati, Ohio, U.S.A. This appliance, which he calls a dropper ampoule, is a hermetically sealed glass vessel containing about 30 grammes of chloroform. As shown in the illustration, it is provided with two extremely slender necks, the tips of which are broken off before use. The terminal neck, which is bent at right angles on itself near the extremity, is for the delivery of minute droplets of chloroform—from 180 to 200 to the fluid drachm, while the lateral neck admits air. An aluminium file is supplied for the purpose of notching the glass before it is broken, but ordinary scissors will also answer the purpose. The anæsthetist can control the delivery partly by varying the inclination of the ampoule and partly by closing the lateral neck with the forefinger. Dr. McMechan informs us that narcosis induced by means of the ordinary Esmarch mask (about six thicknesses of gauze) and the dropper ampoule is both rapid and safe. In this mode of administration the consumption of chloroform is relatively small, and the sealing of the glass container prevents loss by evaporation in hot climates. It is also claimed for this method that the stage of excitement and struggling is minimised by supplying the anæsthetic in minute drops, and that no cases of post-operative vomiting or delayed chloroform poisoning have been observed.

FIG. 1.



Preparation of the ampoule as a dropper.

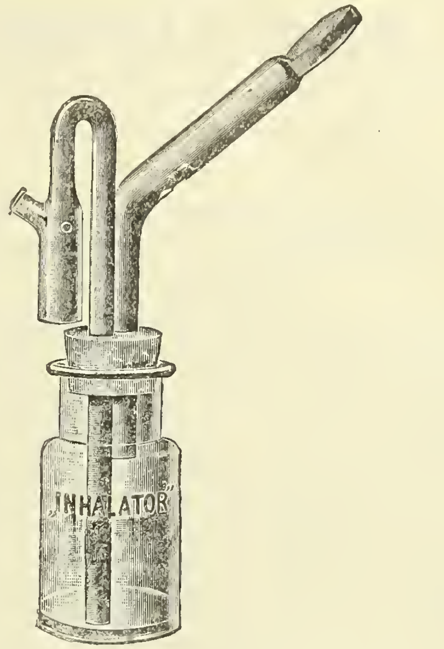
FIG. 2.



Method of regulating the drip of the anæsthetic.

A NEW CHLORIDE OF AMMONIUM INHALER.

THIS simple and effective inhaler was brought to our notice at the meeting of the British Medical Association in Belfast in July last year, where it attracted considerable attention owing to the very fine smoke of ammonium chloride which it produces. As will be seen from the illustration, it consists of (1) a bottle which contains water with a few drops of strong ammonia; (2) a bent glass tube for mouth-piece; and (3) a bent tube dipping below the water and terminating in an open elongated glass bulb, into which is placed 8 or 10 drops of hydrochloric acid. On drawing air through the apparatus a chloride of ammonium smoke indistinguishable in appearance from tobacco smoke, so fine is it, issues from the mouth-piece. It seems remarkable that the ammonium chloride formed does not dissolve in the water. Part undoubtedly does, but a good steady stream of ammonium chloride smoke may be obtained just as easily as smoke from a tobacco-pipe. In addition, medicaments such as menthol or eucalyptus oil can be used with the ammonium chloride, and recently "lignosulfite" has been suggested as giving relief in asthma. "Lignosulfite" gives off sulphurous acid gas. The inhaler was submitted to us by Messrs. Hertz and Co., of 9, Mincing-lane, London, E.C.



THE HEALTH OF HASTINGS.—The quarterly report of the medical officer of health of the borough of Hastings shows that the births registered during the three months ending Sept. 30th, 1909, were considerably below those recorded in the corresponding quarter of last year. The number of male births was 131 and of females 122, making a total of 253, or 17 below the number of births registered in the corresponding period of 1908 and 41 below that of 1907. The birth-rate of 14·7 per 1000 of estimated population was less than in any preceding third quarter, the lowest previously recorded having been 15·3 in 1906. The gross number of deaths registered was 180, as compared with 152 in 1908, 182 in 1907, and 225 in 1906. Among the deaths were those of 24 infants under one year of age, being 95 per 1000 of registered births and 137 per 1000 of total deaths.

THE CARE OF BRIGHTON CHILDREN.—It was announced in THE LANCET of July 31st last that the Brighton education authority had just adopted in principle the establishment of a school clinic in the town. Some time has been taken up in securing suitable premises, but they have now been obtained, and the choice of the committee was ratified by the education authority on Dec. 21st. The premises are to be used as offices for the school doctor, nurses, and lady clerk, and also as the school clinic. For some time past the Brighton education authority has been playing quite a conspicuous part in its efforts for the rising generation, of whom there are no fewer than 18,000 on the school registers. School canteens have been at work for two or three winters and have been inspected by deputations from education authorities from various parts of the country; the blind children are taken care of in a special home and the deaf and dumb receive a special education. There is a school especially for mentally defective children accommodating 40 children. These places could be filled twice over and the authority is considering how they can meet the demand. Nothing has yet been done in the direction of open-air schools, but the advantage of such schools, as shown by the experiments conducted in London in the summer, is not lost sight of, while also it is quite possible that school nurseries or municipal crèches will be established.

THE LANCET.

LONDON: SATURDAY, JANUARY 1, 1910.

The Organisation of the Medical Profession: Some Lessons from Abroad.

THE Battle of the Clubs, under which heading we have often described the struggles of English medical men to obtain a fair remuneration for the contract practice which so many of them are compelled to adopt as the only way of dealing with their poorer patients, is not waged in England alone, but throughout the continent of Europe the necessity for professional organisation has become apparent in order to resist the popular demand that highly-trained professional men should perform an enormous amount of harassing, responsible, and often hazardous, work at a wage altogether disproportionate to their services, or even to their necessary expenses of life. On the continent, however, the battle has been joined on grounds somewhat different from those underlying the troubles of our own medical clubs, for it has arisen out of the operation of the laws compelling insurance against sickness upon all men with incomes below a certain standard, laws which, *ipso facto*, create an organised system of contract practice on an extremely large scale, and a corresponding necessity for an increasingly general and loyal professional organisation to resist any unjust demands made by the community under the instigation of the law. It has been suggested in many quarters that in certain political contingencies we may yet see a similar system of State insurance for the working classes enforced in this country and a review of the conditions which it has forced upon our foreign brethren is not without significance to us at home, although, as Dr. Major Greenwood points out in another column, the fact that the medical men of another nation have devised a plan which at first trial seems satisfactory to themselves by no means ensures that a similar method of dealing with the sick poor would be desirable in our own country. The latest and worst example of the hardships with which European medical men are threatened comes from Austria, as anybody will remember who read our Vienna correspondent's recent account of the annual Aerztekammertag, or meeting of Medical Councils, held in that city at the end of last November. The meeting was chiefly concerned in discussing the scheme for general insurance against sickness which has been proposed by the Austrian Government, and which provides that every person earning less than 4800 kronen (£200) a year should be required to become a member of a Krankenkassa, or sick-club. Should this proposal be enacted, it is not hard to see that the incomes of private practitioners will suffer terrible encroachment, because not only will the clubs employ many fewer medical men to serve their members than now serve the same number of private patients, but they intend to pay totally inadequate salaries for the work which their officers will have to do. In fact, for a salary of from £100 to £200 a year the medical staff will be expected to look after the health of from 1000 to 5000 patients, a proposition which hardly requires comment. We hope our Austrian brethren will be able to bring enough pressure to bear on the Government to obtain the reduction of the wage limit for compulsory insurance to £100, the object at which they are aiming. If they are successful, they will keep at least 73,000 wage-earners and their families who would otherwise come under the new law as possible private patients. There are said to be 2000 medical men in Austria who cannot make a living, and it is small wonder that the need for effective organisation is urgently apparent to the medical profession in that country.

In Germany, no less than in Austria, the economic position of the general practitioner is becoming more and more difficult, so that very energetic action is needed to save a not inconsiderable number of medical men from actual starvation. Here action was initiated by Dr. Hartmann of Leipsic some eight years ago. He founded a fighting medical union entitled "Der Verband der Aerzte Deutschlands," but more familiarly known as the Leipziger Verband. The members pay annually £1, but they are raising a fund of £25,000. Not only have they organised many strikes and found the means of financially compensating the victims, but the pressure exercised has been great enough to effect an affiliation with the Deutscher Aerztevereinsbund, an older and more conservative federation. The greatest struggle has taken place at Cologne, and we sent our Special Commissioner to study the conditions on the spot. Under the compulsory insurance law the different trades form sick funds and each member pays 4*s*. to 5*s*. a year for medical aid. There are about 400 medical practitioners at Cologne, and about 80 of them were employed by the local sick funds to attend to 120,000 workmen and 20,000 families. At five members to a family this makes a population of about 220,000. The families pay 15*s*. per annum. On these terms 300 medical practitioners were willing to attend these people, and the law, which compels everyone with less than £100 a year to insure against sickness, leaves the patient free to select the medical adviser he may prefer. In 1904 a general medical strike was declared, and the 80 medical officers in the employ of the sick funds administration gave up their position so as to establish the principle of the free choice of medical adviser. The sick-clubs imported 32 to 35 other medical men, but the law stipulates that no medical officer shall have more than 2000 members of a sick-club on his list, so the clubs had to give way, a five years' agreement was signed with the local medical union, and the free choice of medical adviser established. But now the five years are terminated and the sick-clubs refuse to renew the agreement. The struggle has been renewed, and as the clubs have on this occasion imported over 60 medical men, it is likely to last a long time, while serious doubt is thrown on the possibility of the previous tactics being again employed with success.

In France also the struggle is on the same lines—the freedom of choice by the patient, as was explained in a recent article in our columns. Last year this was raised mainly in regard to accidents to workmen. The insurance companies sought to impose on the medical men they employed, and these were accused of minimising the cost and length of treatment. On the other hand, the practitioners chosen by the injured workmen were accused of exaggerating the harm done by the accident. The law and the medical unions, however, successfully maintained the right of free choice, while giving to the insurance companies and the responsible employers the right to appoint experts to see that there was no abuse. This year the struggle has been more especially devoted to the application of the law of 1893, which gives the poor the absolute right to free medical aid in case of sickness. The law, however, does not say how this relief is to be given, and leaves the local authorities to decide as to the best method of application. Fortunately, the medical profession, through its local unions or syndicates and its national federation of syndicates, has from the very first clearly stated how the medical poor relief should be organised. There should be a minimum poor-relief tariff, and the mayor of each district should be obliged to place on the list any fully qualified practitioner who is willing to attend on the poor on these conditions. The poor, on their side, would have the right to choose from this list whomsoever they might prefer. The payment, of course, would be made directly by the municipality to the medical practitioner. Out of the 86 departments or counties of France, 63 have accepted the principle of free choice of medical adviser, though the scale of payment varies somewhat. In a few districts the local authorities have attempted to establish a system like club practice in England. Instead of paying a fee for each time advice is given, the municipalities pay a small sum yearly for each person inscribed on a practitioner's list as entitled to free medical relief. This creates a staff of medical officers who thus become municipal functionaries. The medical unions strongly object to this tendency to convert medical men into State or municipal salaried employés. A medical practice should, they say, be created by the skill and attention of the practitioner, instead of being given to him as a reward for services rendered to the political party in office. If the principle advocated by the medical unions in France, and outlined briefly above, is firmly established the medical profession will no longer have to do the enormous amount of gratuitous work that now falls to its lot. All practitioners will then receive at least the minimum fee. If the medical attendant finds the patient cannot or will not pay, he may inscribe his name on the free list at the town hall and claim the money from the municipality. If the patient is not so very poor, then the local authority can recover the money in the same way as it collects the taxes. The money for this medical relief is provided out of the local revenue and the county revenue, supplemented by subventions from the State.

If we were to continue the discussion of the conditions of contract practice in other countries, in most of them—as regards Italy especially—we should have to tell the same tale of hard work and inadequate payment for the rank and file of the medical profession; but we have given sufficient instances to show that British medical men are not alone in their professional disabilities, and that their need of coöperation is no greater than is imposed upon their European brethren. Yet our readers know well enough that their own necessity for dignified organisation was never greater than in the present state of Poor-law upheaval and its possible revolutionary consequences to many thousands of medical practitioners.

◆

The Registrar-General's Report.

IMPORTANT changes have recently taken place in the *personnel* of the three General Register Offices of the United Kingdom. In the course of the year just closed a new Registrar-General and a new Superintendent of Statistics have been installed at Somerset House, whilst for Scotland and Ireland respectively new Registrars-General have entered upon their duties—the vacancy in the latter case having been filled by the appointment of a member of our own profession, Sir WILLIAM J. THOMPSON, physician-in-ordinary to the Lord-Lieutenant of Ireland. We are indebted to Mr. BERNARD MALLET for a copy of his first annual report as Registrar-General of England. This document, which bears the joint signatures of the Registrar-General and the Superintendent of Statistics, is the seventy-first of a remarkable series, the importance of which in relation to medical science generally, and as the basis for sanitary legislation and administration in particular, is universally recognised. We discuss now only a few of the more salient points of the report, as a detailed examination of its contents will be necessary, together with such comments on the incidence of mortality and its causes as will be helpful to those working in public medicine.

In the more noticeable features of the vital statistics of 1908 the Registrar-General takes occasion to foreshadow certain changes in form and method of presentation which he wishes to introduce. Among these he refers at length to some important modifications which have been urged on the department by persons engaged in public health administration, and which if adopted would greatly increase their value for sanitary purposes. Hitherto the official statistics of Somerset House have been limited to registration districts and sub-districts, the areas adopted in 1837 being those prescribed by the Act which authorised the partition of England into unions for Poor-law purposes. The Public Health Act of 1875 provided for a novel partition of the country into urban and rural administrative areas which, unfortunately, were seldom coterminous with the older union areas of the Poor-law, so that the statistics of births and deaths, which under existing arrangements are tabulated for the union areas alone, are practically useless for the administrative purposes of the public health areas. The assimilation of these areas is, as we have frequently urged in these columns, a consummation greatly to be desired; and we have no doubt that the sanitary authorities of the country will appreciate the endeavours which the Registrar-General is making with this purpose in view as far as statistics are concerned. Ever since the creation of sanitary administrative areas under the Public Health Act there has been a strong demand for detailed vital statistics relating to those areas in particular. In view of this demand the Registrar-General has now set forth the nature and extent of the obstacles standing in the way of making the areas for registration coterminous with those for administration, and he tells us that these are too serious to be overcome by anything short of a new Registration Act. Among these obstacles the financial difficulty stands out as of the first importance. In present circumstances the local Poor-law guardians pay the fees for registration of births and deaths. They receive the contributions of the registrars under the Poor-law Officers' Superannuation Act and are responsible for the payment of the pensions of registrars on their retirement. In any change of system it would be necessary to provide compensation for those registrars whose fees and prospective pensions were adversely affected thereby; and, further, it would be necessary to adjust the terms on which the financial responsibilities of the old authorities should be taken over by those who were in future to pay the fees and pensions. "But it does not follow," says the Registrar-General, "that because, short of such legislation, registration statistics must continue to be collected for registration and not for administrative areas, their publication need necessarily also retain this form." In other words, the area of collection does not necessarily govern that of presentation. Provisional investigation of the question from this point of view has led him to the conclusion that it may eventually be possible to redistribute the returns, collected as heretofore, according to administrative main areas, though it will hardly be practicable to publish separate statistics for the smaller ones. With respect to the general bearings of this question Mr. MALLET apparently harmonises in opinion with his predecessor, whose views thereupon we have recorded,[1] but he goes on to discuss the gravity of a new departure of this kind. Accordingly, he instances a difficulty which may not be apparent at first sight, but which becomes serious here because of the necessity of securing identity in the methods of compilation of statistics for national and for local use. There would obviously be grave objections to the publication of national and local statistics for the same areas but compiled by different methods and therefore presenting avoidable discrepancies. In order to secure the presentation of trustworthy rates of mortality, as well as the coördination of the national statistics with those locally compiled by medical officers of health under the direction of the Local Government Board, it would be necessary that deaths occurring in public institutions should be assigned to the place of previous residence, instead of being included, as at present, in the mortality of the district in which each institution is situate. The coördination of the national and local lists of causes of death and of the rules to be observed in the allocation of these causes is an important matter which is complementary to the rearrangement of recorded facts already alluded to, and is one that demands the serious consideration of all concerned.

For ourselves, we see no reason why, with a suitably increased staff at the central office, the local statistics of birth and mortality for at any rate the principal administrative areas of England should not be prepared and issued periodically to the local authorities from Somerset House. We have no doubt that such an arrangement would be welcomed by medical officers of health, especially in the rural districts, for the time of these officers would in this way be set free for inspectorial and other preventive work instead of being occupied unduly as at present in the preparation of local statistics, for the due correction of which they possess neither the appropriate means nor the necessary leisure. One last word. We have for many past years voiced the complaint of medical officers of health that the reports of the Registrar-General lose much of their interest, as well as of their value for administrative purposes, because of what appears to be avoidable delay in their publication. We therefore desire to congratulate Mr. MALLET on the circumstance that for the first time during the last 20 years the report of the Registrar-General has been presented within the year succeeding that to which the figures relate. As Mr. MALLET entered on his present duties only so recently as the middle of last year he justly attributes this result solely to the assiduity of the statistical staff of his department.

◆

Dermatology in Relation to General Medicine.

WE publish in another column a note from an esteemed correspondent in which he points out briefly that dermatology plays no recognised part in the education of the medical student. Now, it is a fact that, although ROBERT WILLAN, who first caused the subject of dermatology to have a separate existence, published his book on cutaneous diseases in 1809, dermatology as a special subject continues to hold a somewhat vague position. The study of diseases of the skin has advanced to a wonderful degree of completeness and extent, and the histology of these diseases has been very fully investigated, yet dermatology can hardly be looked upon as one of the compulsory subjects of the medical curriculum. On the other hand, cutaneous symptoms are often extremely important in the diagnosis of conditions with which every medical student is bound to be familiar. So far as we are aware, no British examining body insists on an attendance at a course of lectures on dermatology, or even on attendance in the out-patients' department devoted to this subject, and though a question on diseases of the skin may from time to time find its way into a medical or surgical examination paper, yet it usually appears to be out of its natural sphere, while its presence is generally resented by the candidates, who, not being required to be "signed up for dermatology," consider that it is hardly fair on the part of examiners to ask them questions on the subject. The only examining body as far as we know which has ever devoted any special attention to skin diseases is the University of London, for until recently candidates were shown six cases of diseases of the skin at the final examination for the degree of Bachelor of Medicine; these they were required to diagnose in writing. But now this recognition of the claims of dermatology has been removed, and the student is left to acquire as much or as little familiarity with skin diseases as he chooses without much risk of his examiners inquiring into his store of knowledge. The question naturally arises, therefore, which lies at the bottom of our correspondent's letter: Are diseases of the skin so important that they should form a compulsory part of the medical curriculum, and that students should produce evidence of having attended a dermatological clinic and lectures, and that examinations should be conducted in the subject?

---

[1] THE LANCET, Feb. 6th, 1909, p. 406.

Are there any reasons why a competent knowledge of dermatology should be required of all seeking to practise medicine? It is important in this connexion to bear in mind that affections of the skin may be divided into those such as ringworm, in which the skin and its appendages are primarily affected, and those in which changes occur in the skin as a result of pathological conditions elsewhere in the body. Therefore, this two-fold division of cutaneous manifestations makes it necessary that diseases of the skin should be looked at not only from a dermatological standpoint, but from the point of view of general medicine. The mistakes in the diagnosis of skin affections which occur in practice are indicative of the importance of this. We have heard of cases where a seborrhœic dermatitis in a child has been mistaken for a manifestation of congenital syphilis, and of another where anti-syphilitic treatment was prescribed for an early scarlatinal rash. Small-pox has been confounded with non-infective pustular disorders with unfortunate consequences. Similar errors of diagnosis are of not infrequent occurrence, and they suggest the desirability of more regular and systematic teaching of dermatology. The fact that attendance at a fever hospital is required of every medical student indicates that the authorities appreciate the need for a rapid recognition of the acute infectious diseases, but it must not be forgotten that many skin affections by their interference with school life and its work, and by the anxiety and worry which they produce, often lead to an amount of disturbance more distressing to the individual than is brought about by one of the infectious fevers, although these are more serious to the community. The recent appointment of school medical officers has done something to accentuate the recognition of the importance of a knowledge of diseases of the skin, and we believe that in the appointments made some attention has been paid to evidence of a special study of dermatology, but the fact that the inspecting nurses now at work in so many schools are credited with a power of diagnosing many cutaneous affections militates somewhat against the idea that those who are responsible for public education in London appreciate the importance of the problems before them. It is difficult, indeed, to overrate the value of a competent knowledge of dermatology. Though existing as a special department in most hospitals, it should be recognised that dermatology is merely a special study of skin manifestations, in some cases at least limited to the skin, but in more still associated also with some other important part of the body. In the epidemic of arsenical poisoning which occurred a few years ago from the accidental presence of arsenic in beer the attacks were supposed for long to be examples of alcoholic poisoning, and it was not until the pigmentation of the skin was recognised as symptomatic of arsenical poisoning that it was discovered that the whole epidemic was produced by arsenic. This is a striking instance, but many others of equal importance could be quoted to show the great value of the early recognition of skin changes. The prompt appreciation of a cutaneous manifestation may lead to the early diagnosis of some important affection of another organ, and may do much to enhance the probability of successful treatment, because the diagnosis can be made before serious pathological changes have occurred. The irritation produced by diabetes has many times led to a recognition of that disease when otherwise weeks or even months might have elapsed before this diagnosis was made. We do not labour this point, enough having been said to show that a working knowledge of dermatology will increase greatly the diagnostic power of every practising physician and surgeon.

What, then, should be done? It is not possible with the recent increase of the scope of the medical examinations instituted by most of the examining bodies to suggest that a special paper on dermatology should form a part of all qualifying examinations. But we are definitely of opinion that steps should be taken to require that every student should attend regularly in the out-patient department devoted to dermatology attached to his medical school, for in that way it should be possible for him to become well acquainted with all the commoner cutaneous manifestations and with many of those which are less frequently seen. The knowledge so gained should be tested at pass examinations at least so often that no student could present himself with a feeling of security unless he had some knowledge of this branch of pathology, and if he were required occasionally to diagnose a case or two of diseases of the skin so much the better. This could be easily managed by presenting to him cases in which the general surgical or medical state was testified to by the cutaneous lesions. We do not venture to urge any addition to the work of the over-burdened student of medicine, but the time has come when some more definite recognition should be made by the examiners of the claims of dermatology. Of all special departments in medicine it is perhaps the most general, and there is none the study of which would repay so well further notice in the curriculum of the student.

Annotations.

"Ne quid nimis."

THE PHYSICAL FITNESS OF LONDON COUNTY COUNCIL EMPLOYEES.

LARGE as is the staff of the London County Council, it might at first sight be thought that their physical condition was a matter of relatively parochial concern. But when regard be had to the fact that the efficiency of London's fire brigade is largely a question of the physical fitness of its *personnel*, and that the question of acuity of vision and absence of colour blindness amongst the tramcar drivers is a matter of great importance to a large section not only of the metropolitan but of the provincial population as well, the subject assumes another aspect, one indeed of national importance. The recently issued report of Dr. R. J. Collie, medical examiner to the London County Council, relates to the work of the five years ended July 31st, 1909, and consequently its figures have a higher value than would be the case if they related to one year only. At the general entrance examination as to physical condition, 10·56 per cent. of the candidates were rejected for one or another cause, and some of those who passed were allowed to do so "under special conditions"—i.e., they were admitted with some acknowledged defect on the distinct understanding that no superannuation money would be paid were they to leave the service on account of such defect. But the Workmen's Compensation Act, 1906, necessitated the discontinuance of these special circumstances. Of the candidates rejected, 53·81 per cent. were rejected owing to defects of vision; 11·21 per cent. because of the presence of albumin in the urine; nearly 8 per cent. for heart disease; and nearly 7 per cent. for hernia. Varicose veins and syphilis accounted for 4·71 per cent. and 2 per cent. respectively. Some interesting figures are furnished with regard to the eyesight of 2703 tramway drivers. Of these, 217 were rejected, 67·74 per cent. having defects of acuteness of vision; 29·96 were colour blind; and 2·30 per cent. suffered from squint. The examination of these candidates is rightly a very searching one, since in 1904 before the routine examinations were instituted, Dr. Collie was asked to examine 73 tramway drivers and of this number 13 were found to be wholly unfit for the service. Dr. Collie finds no difficulty as regards the question of wearing glasses. No objection is apparently raised with respect to persons engaged in sedentary occupations, but in the matter of firemen, captains of river steamers, deck hands, and tramway drivers aids to vision in this sense are not allowed. In all these cases the glasses might, Dr. Collie thinks, instantly become dimmed either by steam or rain. This is no doubt true, but we are wondering whether the German infantry, many of whom wear glasses, suffer much inconvenience from rain during the manœuvres. Obviously rejection of the German recruit for purely visual defects would materially reduce the numerical strength of the German army. In dealing with the question of accidents, Dr. Collie remarks that malingering is much more common in connexion with these conditions than with disease, probably, he thinks, because of the Council's legal liability. He points out, too, that the injury inflicted on real sufferers by shammers is so great that the malingerer deserves no mercy, and as an illustration of this vice, for such it is, he refers to the fact that no less than 7 of 22 cases of malingering occurred in one department about the time when that department was closed. Some instructive instances of malingering are provided by Dr. Collie, and it is clear that the decisive manner with which he deals with them is gradually reducing their number. In connexion with this question Dr. Collie pays an indirect and well-deserved tribute to the men of the London fire brigade, who, as he says, are constantly expected to risk their lives in the execution of their duty—and they do it. As an inducement and as a reward the firemen receive *full* wages and free medical treatment when ill from whatever cause, and they are entitled to a very substantial gratuity or pension if permanently incapacitated. It is, therefore, very creditable to these servants of the public that they do not tend to exaggerate the results of accidents, and during the period referred to in the report before us there were only two cases of malingering. Hernia is common amongst the fire brigade men, a fact which Dr. Collie attributes to fatty degeneration of the abdominal muscles owing to the long periods of inactivity between the fires. The firemen have, it appears, too little systematic exercise, and Dr. Collie suggests the provision of gymnasia for them. With reference to the subject of illness other than that caused by accidents, it is noticeable that amongst the men who work in the sewers there were but two cases of enteric fever, and that amongst the employees generally there is very little alcoholism. There were 23 cases of tuberculosis or pleurisy amongst the employees in the parks and six in the main drainage service, and as regards the former Dr. Collie observes that the healthy life of the parks does not appear to avail the employees since their return for phthisis is comparatively the highest. He wonders whether the tubercle bacillus is deposited in the parks by the phthisical patients of the metropolis, and in this fashion finds its way as dust to the lungs of the park-keepers. This appears to us to be somewhat improbable. Were it otherwise, places such as Davos and St. Moritz would be decimated with the disease, and the employees in consumption hospitals would but rarely escape. As a matter of fact, neither of these things occurs and pulmonary tuberculosis under the conditions which obtain in the parks must surely be regarded as practically a non-communicable malady. Nervous diseases, and especially what is termed neurasthenia, appear very common amongst the employees, and Dr. Collie thinks that the subject requires further investigation. It is due, in his opinion, partly to overwork and stress of competition, and in his view overtime and overwork should be discouraged in the service generally.

THE BIONOMICS OF A HOUSE-FLY.

AN interesting article on the structure, development, and bionomics of the house-fly is contributed by Dr. C. Gordon Hewitt, late lecturer on economic zoology in the University of Manchester, to the December number of the *Quarterly Journal of Microscopical Science.* The fly with which our readers are most familiar is the Musca domestica of Linnæus. This species is most common in a warm room in which are scattered the remains of food, but its place is taken in other rooms of houses by the small house-fly (Homalomyia canicularis), which may even predominate over the Musca domestica, but belongs to a different group of calypterate Muscidæ, the Anthomyidæ. In country houses a third fly, the Stomoxys calcitrans, is not infrequent, and there are yet others. Dr. Gordon Hewitt found that out of a total of 3856 flies caught in different situations, such as restaurants, kitchens, stables, bedrooms, and hotels, 87·5 per cent. were Musca domestica, 11·5 per cent. were Homalomyia canicularis and the rest were other species, such as Stomoxys calcitrans (which is not properly a house-fly), Muscina stabulans, Calliphora erythrocephala, and Anthomya radicans. In India a fly closely resembling the M. domestica exists in enormous numbers. The method of disposal of the night-soil in India is to bury it in trenches about one foot or less in depth; and from one-sixth of a cubic foot of soil taken from a trench at Meerut and placed in a cage 4042 flies were hatched. There are two species of blow-fly in this country, one of which is the Calliphora erythrocephala, the other, which is less common, is Calliphora (Musca) vomitoria; the females of the former deposit their eggs, which may number 600 from a single female, on any fresh, even living, flesh or decaying meat. Dr. Gordon Hewitt found that at 23° C. (73·5° F.) the eggs hatched in from 10 to 20 hours after deposition. The larvæ underwent the first ecdysis from 18 to 24 hours after hatching; the second moult took place 24 hours later; the third larval stage lasted six days, the whole larva life being passed in from seven and a half to eight days. Fourteen days were spent in the pupal state and development was completed in 22. It was found that abundance of appropriate food hastened the development of the larvæ, and Dr. Gordon Hewitt quotes observations showing that the adult Musca domestica can withstand a temperature of – 10° C. The ova are deposited in dark crevices and they develop more quickly under blue or violet glass than under other colours. During the winter months the adults become torpid and a large proportion are attacked by a fungus, the Empusa muscæ. Dr. Gordon Hewitt found them from one and a half to two miles from any house or likely breeding place and has captured them at a height of 80 feet above ground. The Musca domestica does not appear to be able to regenerate a broken or lost leg or wing unless it has very recently been pupated. Besides the Empusa fungus, spiders and other arachnids, wasps, and predatory beetles account for much thinning of the multitudinous ranks of flies. In regard to the agency of the house-fly as a disseminator of pathogenic organisms, though it has no instrument that is capable of perforating the skin and effecting the inoculation or direct introduction of germs, nevertheless its habits render it a very potent factor in the dissemination of disease by the mechanical transference of the disease germs. As human excreta contain the bacilli of typhoid fever, and at the same time attract flies which, after settling upon such material, alight upon articles of food and even upon the lips of man, it is easy to see how flies can contribute, in camps especially, to the propagation of this form of disease. Dr. Hewitt quotes from Howard (1900), who, referring to an American camp where no effort was made to cover the fæces in the latrines, says: "The camp contained about 1200 men, and flies were extremely numerous in and around the sinks. Eggs of Musca domestica were seen in large clusters on the fæces and in some instances the patches were two inches wide and half an inch in depth, resembling little patches of lime." Striking evidence of the part played by flies is afforded by the fact that in the officers' quarters, which were screened off, the cases of typhoid fever were much less numerous than in the tents of the rank and file, and also by the fact that the number of cases was reduced when attention was paid to cleanliness. What holds good of typhoid dissemination by flies applies also to other conditions.

FOOTBALL IN THE UNITED STATES.

"STATISTICS were compiled a short time ago showing that football had been responsible for 30 deaths and for 216 cases of serious injury during the season up to date." Thus writes an American correspondent, but as he does not give the date we do not know exactly over how long a period this list of casualties is spread. But however long it may be it seems to us to be appalling. In 1901 statistics in regard to accidents at football in the United States were first gathered and the casualty list quoted above is the largest since the collection of statistics and most probably the largest ever known. Of the 30 killed, 8 were college students, 20 were pupils of high schools, and 2 were members of athletic clubs. Of those injured, the list included 25 injured internally, 19 cases of concussion of the brain, 19 cases of broken ribs, and the same number of dislocated ankles. 15 legs and 9 arms were broken, while there was a long and formidable list of less grave injuries. When the fact is taken into consideration that the length of the football season in the United States is not two months and that the game is only played by the universities, colleges, and some of the schools, the figures denoting the accidents during the past season will take on an even more serious aspect. The general public of the United States is aroused at the recent fatalities and demands have come from all parts of the country that the game as now played be either abolished or reformed in such a manner that serious accidents be rendered if not impossible at all events of rare occurrence. A few universities have given up the game, Columbia University, New York, has done so, and the Board of Education of New York has prohibited the playing of American football in the schools under its control. The *New York Medical Record*, referring to the matter in an editorial, Dec. 4th, 1909, recognises that public sentiment is strongly against a continuance of the game in its present form, but also recognises the difficulty of making changes which, while preserving the salient features of the game, will rob it of its most dangerous points. A few years ago alterations were introduced which it was thought would have the desired effect. After the introduction of these reforms for two or three seasons there were fewer accidents, but as coaches and players learned methods of avoiding the new rules fatalities became more frequent than before, until in the past season they have reached their climax. A proposition has been advanced that a rule be adopted to enable the referee to order from the field any man whom he deems to be physically incompetent. The American game of football is so different from the games played in Great Britain that there are scarcely any points of comparison, and therefore it is very difficult for English readers to comprehend the numerous obstacles in the way of a radical and an effective reform. While American football is strenuous and even brutal, it is more seriously strategic than British football. Football in Great Britain is a game, and nothing more, leaving out the wage question; football in America is a game to a certain extent, but it more closely resembles a stern fight, in which both sides leave no stone unturned to win, and if the object can only be attained by putting opponents out of action by rendering them *hors de combat*, then this course is pursued. However, the general public in the United States appears resolved to insist upon changes in the game tending to make it less dangerous to life and limb, and as many of the heads and professors of universities and colleges are of the same mind there is little doubt that reforms will be introduced.

SYMPTOMS RESEMBLING "THE SERUM ILLNESS" FOLLOWING PARACENTESIS THORACIS.

THE injection of the serum of another animal into man, as in the antitoxin treatment of diphtheria, is liable to be followed by certain toxic symptoms—an erythematous or urticarial rash, arthritis, and pyrexia. They have been termed "the serum illness" and by foreign writers the "maladie du sérum" and "serumkrankheit." At a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 29th M. F. Besançon and M. S. L. de Jong reported a case of paracentesis thoracis which was followed by similar symptoms, apparently due to absorption of the patient's own serous fluid. A man, aged 29 years, was admitted into hospital on March 25th, 1909, complaining that he had been attacked four days previously with rigors, fever, and a painful cough. He had been losing flesh for a month. At the base of the left lung there was dulness, and slight pleural friction was heard. Exploratory puncture yielded lemon-coloured fluid. Cytological examination of this fluid showed a predominance of lymphocytes, with a few polynuclears. The temperature oscillated about 100·4° F. On April 3rd the effusion was very great, and the dulness extended all over the left chest. Paracentesis was performed and yielded a litre of lemon-coloured fluid. It contained lymphocytes, and on direct examination showed no bacilli. Ten cubic centimetres of the fluid were injected subcutaneously into two guinea-pigs and caused death in three days. The patient was relieved by the paracentesis, and subcrepitant râles rapidly appeared at the left base. But on the 15th new symptoms developed: he complained of pains in the joints and peri-articular tendinous attachments of the lower limbs. There was also a little albumin in the urine. On the following days the pains and albuminuria increased. On May 9th there were œdema of the face and lower limbs, pains in the lumbar region, and albuminuria. The wrist- and ankle-joints were painful and slightly swollen. At the site of the effusion "signs of pleuro-pulmonary congestion persisted." On May 13th the articular pains began to diminish. At the apex of the right lung slight dulness, harsh respiration, and some subcrepitant râles were found. The albuminuria gradually disappeared and the patient was discharged on July 12th with only a trace of the disease at the base of the left lung—diminished vesicular murmur and slight dulness. During the period of the symptoms following the paracentesis the blood showed transitory but marked leucopenia and eosinophilia, and the temperature was about the same as before the paracentesis (100·4°). What was the nature of the symptoms following the paracentesis? It might be suggested that they were due to an attack of acute rheumatism. But the absence of any rise of temperature and the leucopenia exclude this hypothesis. Acute rheumatism is attended by a leucocytosis of from 10,000 to 15,000. The symptoms remarkably resemble those of the "maladie du sérum." In this condition the onset on the twelfth day after injection, the arthralgia, œdema, albuminuria, and leucopenia are all described. Only the eruption was wanting, but this may also be absent in the "maladie du sérum." Evidently the symptoms were due to absorption of toxins contained in the pleural effusion which acted like a heterogenous serum. Its toxicity was shown by the fatal effect produced by the injection into guinea-pigs.

MICHAEL SERVETUS.[1]

An address, which Professor Osler confesses has already done double duty, once as given at the Johns Hopkins Medical School Historical Club and once as an extension lecture at Oxford, has just appeared in pamphlet form. The story of Servetus is one of the most tragic in the history of so-called religious controversy. A heretic himself, holding views similar to those of Nestorius, he was burned alive in Geneva, that home of free thought and liberal opinions. The death, though not the manner of it, was with the consent, if not at the instance of, Calvin, whose plea for freedom of conscience did not, as was customary in the sixteenth century, extend to other people's conscience. But the great fact in the life of Servetus, which makes him so interesting a figure to medical men, is his recognition or discovery of the pulmonary circulation. His account of this did not appear in a medical work but in his theological treatise, "Christianismi Restitutio," and he used it in discussing the nature of the Holy Ghost. In his description, which is quoted at length, we find, says Professor Osler, first, the clear statement of the function of the pulmonary artery; secondly, the transmission of the impure or venous blood through the lungs from the right side of the heart to the left; thirdly, the recognition of an elaboration or transformation in the lungs, so that with the freeing of the blood of "fuliginous vapours" there was at the same time a change to the crimson colour of the arterial blood; and fourthly, the direct denial of a communication between the two bloods by means of orifices in the septum between the ventricles. The date of the appearance of the "Restitutio" was 1553, but Servetus had been engaged on the work for some years previously. Despite his ideas on the pulmonary circulation, Servetus still believed the left heart and the arteries to be the seat of the vital blood and spirits. Professor Osler's paper is worthy of study by all those who take an interest in the history of medicine, and it is made the more valuable by a reproduction of pages from the "Restitutio," of title-pages of various books written or edited by Servetus, and by other illustrations dealing with him.

HOUSING IN WALES.

In The Lancet of Dec. 11th our Wales correspondent referred to an association recently formed to promote the healthy housing of the Welsh people. We have since been given further information concerning the Welsh Housing Association, the offices of which are at 9, Temple-chambers, London, E.C. The functions of this association appear to be investigation of the state of housing in Wales and its borders and the collection of observations on kindred matters, and action through other existing bodies by means of lectures and federated local associations, with the view of securing healthy homes and corporate amenities for the improvement of the physical, moral, and economic well-being of the inhabitants of Wales. With the Chancellor of the Exchequer and the Bishops of Bangor and St. Asaph as members both political and sectarian questions are excluded, and the circular before us fittingly concludes thus—"To that great end, then—an efficient nation—do we desire that Wales should set her house in order, and give her humdrum, as well as her brilliant, sons and daughters those moral, social, and physical advantages that accompany the properly directed *home* life of all peoples. Greece was great when well housed, and Wales will be great when, all else being equal, her people of all ranks can say: Behold, we have habitations whose foundations, if not of precious stones, are laid on approved sanitary principles: we have waters which, if not of crystal, are pure and plentiful: we have streets, if not of gold, yet are free from defilement, and which make our hamlets and towns to appear illumined by the light of science, and where no fell disease can dim their lustre or sadden their homes." Amongst the medical men prominently associated with the movement are Mr. Evan Jones, D.P.H., Mr. D. L. Thomas, and Dr. Owen Pritchard, and the list includes men of considerable eminence in other professions. We are in sympathy with any movement for the improvement of the housing of the people, and we wish this public-spirited association all success in its endeavours.

THE DIAGNOSTIC SIGNIFICANCE OF ALLOCHIRIA.

In a recent review[1] there appeared a suggestive contribution from Dr. Ernest Jones of Toronto to the difficult subject of allochiria. By this term neurologists have commonly understood the false reference of a point stimulated to a corresponding spot on the opposite side of the body. Aided, however, by an exhaustive analysis of certain clinical examples which have come under his observation, Dr. Jones has made out a clear case for the revision of an inadequate nomenclature. It would appear that under the name of allochiria two fundamentally different conditions have hitherto been confounded. A patient may be unable to determine the side of a given cutaneous stimulus because of a general defect in localisation—alloæsthesia—or because of a specific defect which is independent of any error in localisation, and this condition should be called dyschiria. It may be defined as a state in which there is constantly either ignorance or error in the patient's mind as to the side of given stimuli, quite independent of any defect in sensorial acuity or in the power of localisation. Dyschiria, further, may be divided into three stages: achiria, in which the patient has no knowledge of the side of the stimulus; allochiria, in which he refers the stimulus to the corresponding point on the opposite side;

---

[1] Michael Servetus. By William Osler, M.D., F.R.S., Regius Professor of Medicine, University of Oxford. London: Henry Frowde, Oxford University Press. Pp. 35. Price 1s. net.

[1] The Review of Neurology and Psychiatry, August and September, 1909.

and synchiria, in which he refers it to both sides. According to Dr. Jones, allochiria is the only stable variety of dyschiria, achiria and synchiria being temporary and transitional stages. He considers allochiria, or rather dyschiria, to be entirely characteristic of hysteria, and to be explicable more easily from this than from any other point of view. The anatomical hypotheses concerning allochiria are contradicted by all the facts bearing on the subject and should be discarded. In dyschiria we are dealing with a form of psychical dissociation or disaggregation such as lies at the basis of hysteria according to Freud, Janet, and others. The feeling of "sidedness" is dissociated from other psychical groups in which are stored our memories of cutaneous stimuli of differing sorts. If there is a complete separation of this association we have achiria; if an abnormal association is formed between these mental processes, these "images" of the different parts of our body arising from a complex of memories and the complemental feeling of sidedness (called by Dr. Jones the "chirognostic feeling"), then we have allochiria. In a word, allochiria occurs as the result of the cleavage of certain normally associated mental processes, and this cleavage is characteristic of hysteria *par excellence*. To those who are unfamiliar with the subject some of the clinical illustrations furnished in the paper may seem almost incredible. Thus one of the patients, a typical case of hysteria, with pronounced allochiria, his right side being for him non-existent, was given a screwdriver and asked to insert a screw with his right hand. At once he took the screwdriver with his left hand and used it quite dexterously and naturally. When, on the contrary, he was asked to use it with the left hand—the patient being righthanded—he again took the tool with the left hand, but this time he was practically unable to use it, merely fumbling with it in the clumsiest way. If the screwdriver was put into the right hand it was not used at all, because the patient seemed to have forgotten how to use it; if it was put into the left hand it was employed properly as long as the patient thought he was engaged with the right hand. The change that took place when he was told to use the left was astonishing. These and many similar illustrations will well repay a perusal of the original communication, although the explanations of the author may not always commend themselves to the critical reader.

A SMALL-POX HOSPITAL AS A SANATORIUM FOR CONSUMPTIVES.

THE South Staffordshire Joint Small-pox Hospital Board has been in communication with the Local Government Board concerning the use of its hospital as a sanatorium. Since the erection of the hospital several years ago no patients had been admitted. The Local Government Board has replied that it did not consider that the joint small-pox board could itself undertake the treatment of phthisis in its hospital. At the same time, the principle to utilise the hospital for cases of phthisis when the accommodation was not required for cases of small-pox was not one to which the Local Government Board would raise objections on medical grounds, assuming that there was efficient disinfection between its use for the two diseases, and that the consumptive patients could at once be removed in the event of cases of small-pox being notified. If it were proposed to let the hospital to a hospital committee of the Staffordshire county council for the use of consumptive patients, and a Provisional Order were needed to enable the proposal to be carried into effect, the Board would be willing to consider an application for such an Order. At a subsequent interview with the Assistant Secretary of the Local Government Board, it was suggested that the county council should pass a resolution authorising the addition of phthisis to the list of notifiable infectious diseases, and that it should subsequently appoint a committee under the Isolation Hospitals Act, to include members of the Wolverhampton council. The county council should then agree with the Small-pox Hospital Board for the temporary use of the hospital, it being understood that if an epidemic of small-pox occurred the phthisis cases should be instantly removed. As Wolverhampton was a county borough and outside the Isolation Hospitals Act, it was suggested that the Wolverhampton corporation should agree with the county council for so many beds or patients from Wolverhampton. By those measures the Assistant Secretary thought the matter might be carried out, but he was very much averse from anything like a permanent arrangement, as the Board anticipated, having regard to the long period which had elapsed since the last small-pox epidemic, it was safe to predict that sooner or later another would occur.

A NEW INTERNATIONAL JOURNAL FOR DISEASES OF NUTRITION, METABOLISM, AND DIGESTION.

THE present tendency towards specialisation in medicine, surgery, and the related sciences is reflected in the ever-increasing number of journals and periodical publications devoted to special subjects. The activity of the workers in different countries is now so great that some such means of collating the results of research and rendering them more accessible becomes almost a necessity. We have received a copy of the first number of a new publication entitled *Internationale Beiträge zur Pathologie und Therapie der Ernährungsstörungen, Stoffwechsell, und Verdauungskrankheiten.* It is edited by Professor Adolf Bickel of Berlin, with the collaboration of distinguished workers in almost all countries, including Dr. A. E. Garrod, Dr. W. Hale White, and Professor Bayliss in this country, and it is published in Berlin by August Hirschwald. Papers intended for publication may be sent in the German, English, French, or Italian languages, but to each must be appended a *résumé* in German. It is to appear in parts, four of which will constitute a volume, and the parts will be published at intervals when the editor has sufficient material for the purpose. Professor Bickel in his introductory notice expresses the hope that in addition to purely scientific investigations the results of practical methods of treatment will be published in the *Beiträge*, thus affording help to the practitioner. He also believes that the international character of the publication will serve to give a wide currency to the papers published. The first number contains some valuable papers and augurs well for the success of the new publication. Dr. G. v. Benczúr of Budapest contributes a paper on the peristalsis of the small intestine; Dr. G. di Gristina of Naples discusses the respiratory changes in fowls rendered gouty by feeding on substances rich in nucleins, such as liver; Dr. Th. Borodenko of Charkow describes some experiments concerning the nervous regulation of the secretion of gastric juice, and especially concerning the regulating centre in the pyloric region. He finds that every part of the stomach cut off from this centre shows a continuous secretion. Dr. M. Rheinboldt of Kissingen describes the course of secretion in an isolated part of the stomach divested of its nerve-supply. An interesting review of the medical treatment of simple ulcer of the stomach in France is contributed by MM. Mathieu and François Moutier of Paris. They point out that at the present time the treatment is essentially eclectic, and that the work of Lenhartz has received favourable recognition in France, so that more early feeding is now adopted after hæmorrhage and after severe attacks of pain than was formerly the case. Bismuth and belladonna are extensively used, but the administration of alkalies is much less employed. They admit that the determination of the indications for surgical treatment is the main question of the day. Professor Obrastzow of Kiew reviews the treatment of gastric ulcer in Russia. The editor, Professor Bickel, contributes a review of the pathology of the secretion and movements of the digestive canal, which contains within short compass some interesting material. We welcome this new publication and feel assured that it will be well supported and will prove of great value to the medical profession in many countries.

THE JOHN HERBERT WELLS FUND.

There is hardly need to retell the story of the heroic life and death of John Herbert Wells, for those of our readers who did not read the obituary notice in our own columns of Oct. 23rd last have probably seen particulars of his career in one or other of the daily papers, which published the appeal on behalf of his widow and children. In case any have not seen them we may repeat that whilst treating a case of human glanders successfully with a vaccine Wells received an accidental laboratory infection, which resulted in his death in October last after 18 months of helpless suffering. There has been a generous response to the Fund from the general public and the medical profession, but those who have undertaken to collect and administer it are very anxious that such a sum shall be provided as will ensure an income that will enable Mrs. Wells to live in moderate comfort and to educate her two children in a manner worthy of their father. Every additional £100 that is raised will further this end, and we ask those of our readers who are blessed with a comfortable living, if they have not yet subscribed to this Fund, to give according to their means. The medical profession is conspicuous for its charity, and it cannot surely be better exercised than in honouring the memory of one of its martyrs by rendering substantial assistance to those who were dearest to him. The committee in charge of the Fund are the Right Hon. A. J. Balfour, the Earl of Dalhousie, Lord Justice Fletcher Moulton, Sir Almroth Wright, Mr. H. A. Harben, Mr. Edmund A. Smith, Dr. W. H. Willcox, and Mr. Julian Lousada. Lord Dalhousie and Mr. Lousada are the joint honorary secretaries and treasurers of the fund, and will be pleased to receive subscriptions sent either through this journal, in which they will be acknowledged, or directly to 16, Old Broad-street, London, E.C.

THE RELATION OF THE BRITISH RED CROSS SOCIETY TO HOME DEFENCE.

We have already referred in these columns to the new scheme of organisation of medical aid to our Forces in the event of invasion.[1] The medical organisation for the fighting line has been completed, also that for the base of operations, in the shape of 23 large hospitals, which will be opened as required at important centres throughout the country. For the intermediate arrangements the War Office authorities rely on the assistance of the non-military part of the population, which they ask to be afforded through the agency of Voluntary Aid Detachments in connexion with the County Associations and the British Red Cross Society. Sir Alfred Keogh recently gave an address at St. James's Palace to the council and officials of this society, in explanation of the principles of the scheme, and emphasising certain important details. Why should not every town and even every important village possess one of these detachments? We are told by war experts that there is no single spot in these islands from which it can be said such aid will not be required should the necessity arise for the defence of our country. The members of such a detachment should possess a working knowledge of first aid and field nursing, and plans should be prepared beforehand. "Let us suppose that the school-house, the church, or the hall will hold 40 wounded. 40 beds must be provided. Are there 40 inhabitants who will give a bed and bedding for each of these? Are there ten women who will nurse them? Are there three women who will cook for them? Is there a minister of religion who will give them spiritual comfort and consolation? Is there a village carpenter who will prepare splints for the mangled limbs, and are there children who will roll the bandages to envelop them?" No doubt all will be forthcoming, but what is needed is preparation, organisation, training. There must be no confusion, no overlapping, no misunderstanding; there must be knowledge, organisation, precision, discipline, self-sacrifice. Everyone must know his own place, or *her* own place, and women are little less needed than men, for nursing, for cooking, and, as we see here for the first time in military organisation, as qualified physicians and surgeons. The county branches of the Red Cross Society undertake the formation of these Voluntary Aid Detachments; each county is to have its own director, who will act as administrative officer. Wherever the military operations are taking place, the commander should know the capacity for assistance of the part of the country concerned. Suppose the railway lines are blocked, or that the urgency of the military operations renders their use impossible except for combatant purposes, the local resources would have to be relied on both for accommodation for sick and wounded and for transport. All this should be thought out and arranged beforehand, so that the commander might know that by such and such a route there would be clearing hospitals, temporary rest stations, and all that is needed for the sick and wounded. Sir Alfred Keogh admitted that the work to be done to secure this result looked formidable; but he maintained that it is not really so. No one individual has to know all the duties, and the demands upon the time of members of the Voluntary Aid Detachments need not be great, once a beginning has been made. We again commend this scheme to our professional brethren throughout the country; success is assured if we as a body respond to the call of the military authorities. No class or profession is more sincerely desirous of peace than our own; but *si vis pacem, para bellum.*

THE MEDICAL SCHOOLS OF FRANCE: A STUDENTS' GUIDE.

Those who have just completed, or nearly completed, their medical curriculum in this country often derive great benefit from a short period of additional study in one of the continental schools. All change of environment has a real educational value, and this applies with force to young practitioners whose life's work will bring them into contact with different classes of the population in every possible condition of health and sickness. Breadth of view is gained by living under the altered conditions abroad, and those who can afford this useful interlude should certainly take it. *Le Progrès Médical* has now issued a Numéro des Étudiants, a cloth-bound volume of more than 1000 pages called "Index du Progrès Médical," and we are flattered to note that the idea of the publication was originally suggested by the Students' Number of The Lancet. The work covers a wide field, and those who intend to study at any medical school in France will find in the earlier portion an exhaustive account of all the schools in the country, with useful notes on the stages of the curriculum and the examining bodies, and a long list of the subjects on which candidates have been examined for the last seven or eight years. The book includes also an official list of the qualified practitioners in France; lists of benevolent, assurance, and medical protection societies; and a short account of the recognised medical schools in other countries. The labour of compilation must have been immense, and the result reflects great credit on our contemporary.

---

[1] The Lancet, Oct. 9th, 1909, p. 1080.

CENTRAL DISLOCATION OF THE FEMUR.

IN the *New York Medical Journal* of Nov. 13th Dr. A. E. Halstead has called attention to central dislocation of the femur, an injury which has received little notice. By central dislocation is meant fracture of the acetabulum with dislocation of the head of the femur into the pelvic cavity. Only about 50 cases have been recorded. Most of them are reported as fractures of the acetabulum, but as the presence of the head of the femur in the pelvic cavity is the most important element, Dr. Halstead, following the Germans, discusses the condition under the title of central dislocation of the femur. In his clinical lectures published in 1821, Sir Astley Cooper described one of the earliest cases. A patient was admitted to St. Thomas's Hospital with the appearance of dislocation backward of the head of the femur. Death occurred on the fourth day, and a fracture of the os innominatum was found with dislocation of the head of the femur into the pelvis. Dr. Halstead reports the following case. A man, aged 43 years, was admitted into hospital on March 18th, 1909. About six hours previously he fell down a flight of stairs whilst under the influence of alcohol, alighting on the right hip and right arm. He attempted to rise but was prevented by intense pain in the right hip. There was a Colles's fracture of the right arm. The right leg was moved with difficulty in consequence of pain and rigidity of the muscles of the hip. The trochanteric region was flattened, the foot was slightly rotated inwards, and the leg was adducted. On manipulation movements of the head of the femur were found limited in all directions; adduction and abduction were practically impossible; slight rotation was possible, the right trochanter swinging through a smaller arc than the left. Pressure on the trochanter caused great pain. Measurement from the anterior superior spine of the ilium to the inner malleolus showed three-quarters of an inch of shortening. The trochanter projected half an inch above Nélaton's line. From the most prominent part of the trochanter to the symphysis pubis measured 6¼ inches on the right side and 6¾ inches on the left. Rectal examination showed that the head of the right femur projected through the acetabulum into the pelvis. Radiography confirmed the diagnosis of central dislocation of the femur into the pelvis, with fracture of the acetabulum. On April 5th under ether the dislocation was reduced by manipulations similar to those for reducing a posterior dislocation of the head of the femur—flexion of the leg upon the thigh, flexion of the thigh upon the abdomen, internal rotation, and finally circumduction outward with extension. While the movements were in progress rectal examination showed that the head could easily be removed from the pelvis, but if released it returned to the pelvis. By maintaining extension and abduction the head was held outside the pelvis, and in this position a plaster cast was applied from the lower costal border to the toes on both sides. The legs were held in abduction by means of a brace placed between the knees, which was included in the plaster cast. After two weeks the cast was removed from the uninjured leg and on May 10th the remainder was removed. Massage and passive and active movements were begun. On May 29th examination showed some flattening of the trochanteric region. Movements of the hip-joint were possible in all directions but not to a normal degree. The thigh could be flexed to 60°; outward rotation was almost normal; internal rotation was very limited; adduction was limited; abduction was about half the normal. On June 1st the patient could walk without crutches. In central dislocation of the femur there are frequently, in addition to fracture of the acetabulum, other injuries—fracture of the rami of the pubis or ischium, separation of the symphysis, and hæmatoma of the trochanteric region or the various intermuscular spaces. Laceration of the iliac vessels, with rapidly forming hæmatoma and death from hæmorrhage, has been noted. The nerves of the pelvis may be injured, causing paralysis. The intestine may be perforated by a fragment of bone or compressed between the head of the femur and the pelvis, or the bladder may be perforated. Most of the cases recorded before the introduction of the X rays were not recognised until after death; posterior dislocation of the femur or fracture of its neck was diagnosed. The violence which causes the dislocation is usually great, but an insignificant fall or blow may cause fracture of the acetabulum, and an attempt at standing may force the head of the femur into the pelvis. The signs are well illustrated by the case now recorded. The most important sign is the presence of the head of the femur in the pelvis, which can be found by rectal examination. The diagnosis should be confirmed by skiagraphy.

THE TENURE OF MEDICAL OFFICERS OF HEALTH.

WE are pleased to see that there is at least one municipality, to wit, that of Richmond, sufficiently liberal in its views to adopt voluntarily a rule for dealing with its medical officer similar to that recently secured in favour of county medical officers of health by Mr. Burns's firm conduct of the Housing and Town Planning Bill after the Lords had sent it back to the Commons for amendment. At a meeting of the Richmond town council held on Dec. 14th the following resolution was moved by Councillor Taylor:—

> That subject to the approval of the Local Government Board, the appointment of Dr. John Hedley Crocker as medical officer of health for the borough be renewed at an annual salary of £450, until he resign or be removed by the council with the assent of the Local Government Board.

The gist of this re-arrangement is to substitute a permanent for an annual contract, and the form in which the resolution was expressed had, said its mover, the approval of the Local Government Board. One councillor only raised his voice in criticism of the motion, but he was silenced with shouts of "Agreed" from the rest of the Council, and a precedent was thus set by the borough which we hope will be widely followed throughout the country.

THE REPORT OF THE LOCAL GOVERNMENT BOARD.

THE second part of the report of the Local Government Board (1908–09) was issued this week. It records, amongst other things, a year's work of public health administration which on this occasion demands more than usual attention since part of this work refers to the operations of the Public Health Acts Amendment Act, 1907. Some highly interesting aspects of the questions relating to food and water supply are also set forth.

THE King has signified his pleasure that the Faculty of Physicians and Surgeons of Glasgow shall hereafter be known as the Royal Faculty.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies has reported 23 cases of plague with 13 deaths during the week ending Dec. 23rd, 1909.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

I.

IN no branch of physiology is it more necessary for the physician to be well informed than in the physiology of the circulation: the workings of the circulatory system, as manifested by such phenomena as the apex beat, the sounds of the heart, the pulse, and alterations in the cutaneous circulation, thrust themselves upon his notice during almost every moment of his work, and afford valuable evidence on which to base diagnosis, prognosis, and treatment.

Surprising as the statement may appear, however, our knowledge of the circulation is still very imperfect, and many erroneous views prevail on the subject. I go so far as to say that in this land of Harvey we are still in ignorance of some of the elemental truths regarding the circulatory system, and it is well that medical men should wake up to the fact. I will relate two incidents in proof of my contention.

Not long since I asked a noted physiologist, a great authority on the physiology of the circulation, if he thought the last word had been said on the mode of action of the semilunar valves. He looked at me with surprise, and it was evident that he did not know what I was driving at. I explained to him that I found it difficult to believe that the delicate aortic valves could by their own unaided strength sustain the pressure of the aortic blood, and I suggested that unless they were substantially supported on their ventricular aspect during ventricular diastole, the strain upon them would be so great that rupture must very soon occur. All he could say in reply was that their nutrition must be very active! Clearly the difficulty I pointed out had never occurred to him. Once this difficulty is realised the inadequacy of the current view of the action of the aortic valves becomes obvious. We see at once that they must be substantially supported from below during ventricular diastole. It has long seemed to me that the only way in which the necessary support can be secured is by that portion of the ventricle which is immediately subjacent to the valves remaining contracted during the early part of ventricular diastole; and it has, I understand, recently been shown in America by a laborious series of experiments that such a sphincter action does in point of fact obtain. So much for my first incident. Here we have an eminent authority on the physiology of the circulatory system, a specialist of specialists, coming to grief, as it were, at the very first fence, on the threshold of the problems connected with the circulatory apparatus.

The other incident which showed me how inadequate is present-day knowledge of the circulatory system, even among the initiated, was a conversation with a physician well known for his valuable clinical researches into cardio-vascular physiology. I had looked forward to an instructive chat with him on a subject with which he had so closely identified himself. What was my surprise when he informed me, with that splendid honesty which belongs to the truly scientific mind, that he was all but entirely ignorant of the physics of the circulation, and that he had nowhere been able to find any satisfactory account of the matter.

A reference to students' text-books emphasises the same conclusion. Not only do they reveal the blanks in our knowledge, but they often show ignorance of important truths which are known. I have been at pains to read through the accounts of the circulation in all the more recent of these books—some dozen in all—and I venture to say that it is impossible to get a proper grasp of the subject of the circulation from any one of them or from all of them together. I will illustrate this statement by giving some of the errors both of commission and omission which I have noticed.

I have just remarked on the inadequacy of the current description of the action of the semilunar valves—how the sphincter action of the ventricle has been overlooked in connexion with the closure of these valves. In addition to this error of omission, all the students' text-books I have consulted describe the closure of the semilunar valves as sudden and abrupt. These valves are assumed to be violently slammed down at the beginning of ventricular diastole by the pressure of the blood above, thereby producing the second sound of the heart; but a moment's serious thought will surely suffice to convince most that such delicate structures cannot possibly withstand a hundred thousand (or so) daily bangings for some score of years. No tissue in the body could be subjected to such treatment without undergoing marked organic change. On the current view that the semilunar valves are unsupported after their closure on their ventricular aspect, such violent closure would assuredly very soon lead to rupture; given such support it would induce enormous fibrous hyperplasia. Is it not evident that the closure of the semilunar valves is effected gradually and cautiously?

In several of the text-books, again, the old mistake is repeated of assuming that the capillaries offer considerable resistance to the blood-flow, whereas, as I showed some years ago, the resistance they offer is so small as to be practically negligible. One writer would have us believe that the slowness of the capillary circulation is due, not to the great width of the capillary bed, but to the enormous friction of the blood (*sic*) within it, thus making the double mistake of assuming—first, that the capillary resistance is considerable, and, secondly, that a high capillary resistance would slacken the flow in the capillaries without affecting the rate of flow in the entire arterial tree behind them.

Another mistake met with in many of the books is the assumption that the influence of thoracic aspiration in aiding the flow of blood into the right heart operates during inspiration only, the fact being overlooked that aspiration is maintained during expiration as well, the mean aspiratory action of the thorax being, indeed, ordinarily but very slightly greater during inspiration than expiration.[1]

Among errors of omission I may refer to the fact that no mention is made of the important function of the actively contracting vascular media in preventing the blood-vessels from undergoing a progressive yielding. When we reflect that a pressure of a few millimetres of mercury suffices to cause a steady stretching of the thick walls of an ovarian cyst, which may thus attain enormous dimensions, it is obvious that the blood-vessels which are subjected to considerable and continuous internal pressure must be endowed with special means of resisting the tendency to undergo progressive yielding when subjected to a constantly acting stretching force. Their ability to do this they owe chiefly to their muscular elements which in the actively contracted state offer a resistance *sui generis* to progressive yielding. Were the blood-vessels devoid of muscular elements, they would in a very short time undergo enormous aneurysmal dilatation. This function of the vascular media accounts for many facts of interest to the physician—e.g., why a chronically hypertonic artery never becomes dilated or tortuous (so long as the muscular fibres remain intact), no matter how high the habitual blood pressure; and why, on the other hand, a chronically relaxed—hypotonic—artery, such as the temporal, tends to become highly dilated and tortuous, even though the blood pressure be habitually low.

In none of the physiological text-books, again, is the important question considered why systemic resistance is so much greater than pulmonary resistance, and why, therefore, systemic arterial pressure is so much higher than pulmonary. Yet this is one of the fundamental problems of the circulation. The fact that the systemic arterial pressure of a rat is greater than the pulmonary blood pressure of a cart-horse surely needs some explanation.

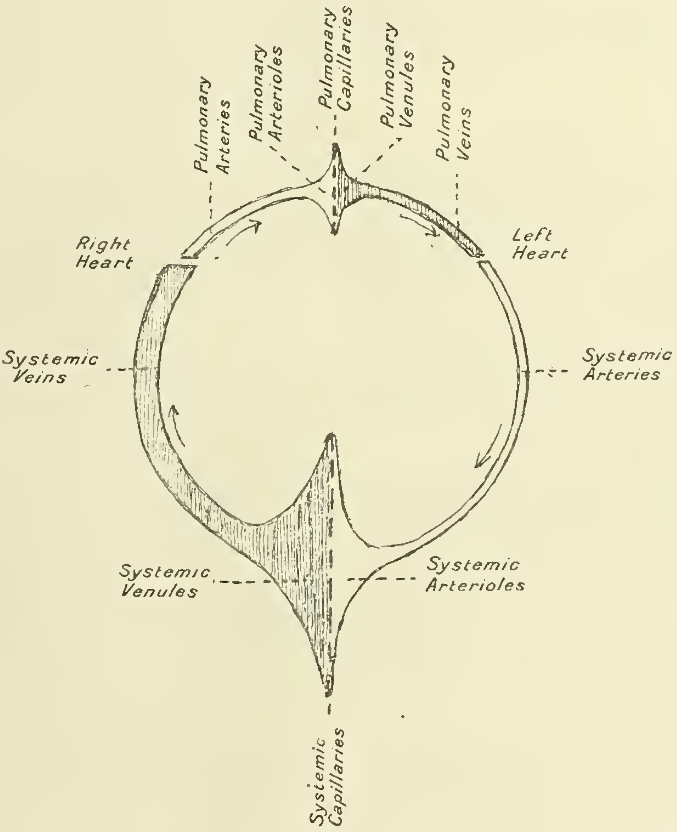
Another object not touched upon in the text-books—nor, indeed, so far as I know, in any physiological writings—is the comparative tension of the various tissue elements in the vessel wall—muscular, yellow elastic, connective tissue. The tension of these elements is by no means necessarily one and the same at any given time: thus when an arteriole is in a state of hypertonus the pressure of the blood is entirely borne off from the adventitia, while the intima is also equally devoid of tension, though it will be compressed between the blood on the one hand and the media on the other. Under ordinary conditions the tension in the muscular and elastic elements of the media is greater than the tension either of the intima or the adventitia.

---

[1] The aspiratory action of the thorax is chiefly due to the tension, or tautness, of the pulmonary tissue, and the mean tension of the lungs is manifestly the same during inspiration and expiration. The slight excess of inspiratory over expiratory aspiration is due to the fact that intrapulmonary air pressure is somewhat less during inspiration than during expiration. In ordinary breathing, however, it is practically the same.

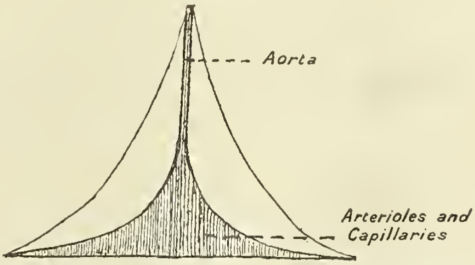
Seeing that the description of the circulatory system in the accepted text-books is thus inadequate, it is not surprising that physicians have not always the clearest ideas in regard to it, and that this deficiency in exact physiological knowledge should be manifested in their writings on diseases of the heart and circulation. Many instances might be given in proof of this. It will suffice to mention the oft-repeated fallacy that high arterial pressure causes polyuria. The essential cause of high arterial pressure is a generalised arteriolar contraction, but this, while it augments arterial pressure, causes a fall in the capillary pressure, and such a fall occurring in the capillaries of the kidneys would lead to diminution in the secretion of urine. What probably, nay, almost certainly, happens in the polyuria which so frequently accompanies high blood-pressure is this: while there is a widespread constriction of the arterioles generally, causing a heightened pressure in the renal arteries, the intra-renal arterioles are maintained in a condition of dilatation, thus causing a diminution of resistance to the flow of blood through the kidneys. The atrophied kidneys are consequently abundantly flushed with blood, and polyuria results.

FIG. 1.



Some general remarks on the pulmonary and systemic circuits.—In the accompanying diagram (Fig. 1) I have attempted to represent the vascular system of man (the portal system is omitted). With the data at disposal it is not possible to make it more than approximately accurate. It will be observed that I have made the systemic circuit about three times the length of the pulmonary circuit (each circuit consists, of course, of innumerable individual circuits, and it is to the mean of these that I here refer); also that I have represented the capillaries as extremely short, their average length in the case of the systemic circuit being, indeed, not more than, say, 1-2000th part of the entire circuit; further, that I make the "bed" of the systemic capillaries about three times as wide as that of the pulmonary capillaries.[2] The only means at our disposal of estimating the relative widths of these two beds is by a comparison of the average rates of blood-flow in the systemic and the pulmonary capillaries, and observation shows that the flow is much more rapid in the latter than the former; assuming it to be three times as rapid, the pulmonary bed would be one-third the width of the systemic bed.

FIG. 2.



The shaded area represents the amount of blood contained in the arterial systemic segment on Thoma's view. The unshaded area represents the extra quantity required to fill the arteries on the older view. It will thus be seen that Thoma's assumption implies an economy both of blood and of vascular tissue.

Note, again, that while in the case of the pulmonary circuit the capacities of the arterial and the venous portions are represented as equal, in the case of the systemic segment the venous portion is shown as about three times as capacious as the arterial. The large capacity of the systemic venous segment is for the purpose of providing a reservoir for blood which is for the time being not required by the tissues. There is, on the other hand, no object in having the venous (distal) portion of the pulmonary segment more capacious than the arterial (proximal), for once the blood has become oxygenated in the pulmonary capillaries the sooner it is conveyed to the left heart the better, and there would be no advantage in the pulmonary venous segment being larger than is necessary for the due reduction of resistance.

The entire capacity of the systemic circuit is said to be some 12 times that of the pulmonary circuit, a relation which is only very imperfectly represented in the diagram.

Finally, it will be observed that the pulmonary and the systemic arterial beds are represented as undergoing no increase until the region of the arterioles is reached. "At all points," writes Thoma, "where they have been closely investigated the transverse sectional areas of the lumen of the arterial trunks are equal to *the sum of the transverse sectional areas of their branches*."[3] Exactly where the arterial bed begins to widen Thoma does not say. It is certain, however, that it must undergo considerable widening in the neighbourhood of the arterioles: so long as the sectional area ("bed") of the vascular tree remains the same, so long will the rate of flow remain the same in it; hence, if the sectional area of the arterioles were the same as that of the aorta, the rate of flow in the former would be the same as that in the latter. Now we know that on an average the blood flows many hundred times more rapidly in the aorta than in the capillaries, and if the circulation is as rapid in the arterioles as in the aorta, it would be many hundred times more rapid in them also than in the capillaries. This is certainly not the case. We are therefore driven to conclude that, whatever be true of the pre-arteriolar vessels, a considerable widening of the vascular bed takes place in the region of the arterioles, and it seems likely that it undergoes some widening before these small vessels are reached.

It will also be seen from the diagram (Fig. 1) that I have

---

[2] It is manifestly impossible in such a diagram as the above to represent the relation of the pulmonary or systemic capillary bed to that of the arteries or veins.

[3] Text-book of General Pathology, Richard Thoma, p. 275; translated by Dr. Alexande B

assumed the systemic venous segment to be constituted on the same lines as the arterial segment in regard to the widening and narrowing of its bed. Whether I am correct in this I cannot say.

It should be noted that the older view which regards the vascular bed as increasing all the way from the heart to the capillaries, and as diminishing all the way from the capillaries to the heart, implies a much greater total vascular capacity than the arrangement here assumed. We have seen that it is of advantage to have a specially capacious venous segment in the case of the systemic segment in order to provide a reservoir for blood not for the time being needed by the tissues. A correspondingly capacious arterial portion, on the other hand, would not only demand a considerable increment in the total blood mass (see Fig. 2), but would unnecessarily prolong the passage of the arterial blood from the left heart to the tissues.

The Structure of the Blood-vessels.

We have still much to learn concerning the structure of the blood-vessels. Indeed, the detailed study of the minute anatomy of the veins (whatever may be the extent of our knowledge of the arteries) can hardly be said to have yet begun. An important point to remember is that individual arteries and veins display considerable variations in their structure, varying, as they do, both according to their size and their locality. Thus the structure of the large arteries differs widely from that of the arterioles, while the arteries of one organ, such as the spleen, differ from those of any other organ, such as the liver. The capillaries of different regions also present considerable differences in their minute structure. This is shown by their varying permeability; the hepatic capillaries, for example, are very much more permeable than the capillaries of the lower extremities.

This inadequacy in our knowledge of the normal structures of the blood-vessels in different regions of the body often makes it difficult, or, indeed, impossible, to decide whether a given vessel is diseased or not. Thus, as A. V. Meigs observes, "No text-book contains an accurate description or illustration of perfectly normal renal blood-vessels, any more than of blood-vessels of the other organs, and therefore anyone who studies diseases of the kidney is constantly confronted with the difficulty of deciding whether a particular blood-vessel is normal or diseased." This difficulty is enhanced in the case of the arterial intima, the seat *par excellence* of arterial disease, for not only does this coat normally present considerable differences in the arteries of different tissues, but it normally undergoes thickening with advancing years "as surely as the face becomes wrinkled." It is often difficult, again, to decide whether the adventitia is morbidly thickened or not, owing to the difficulty of determining the boundary between it and the adjacent connective tissue.

The naked-eye difference between the arteries and the veins.—The arteries are thicker than the veins, and do not, like the latter, collapse when empty of blood. This tendency of the veins to collapse when undistended by a positive internal pressure is of interest in connexion with the negative pressure in the intrathoracic veins. It is manifest that collapsible vessels under a negative internal and a positive external pressure must necessarily collapse unless held open by their external attachments. We seem, therefore, compelled to assume that the veins which enter the thorax are for a certain distance before their entrance kept patent by external attachments. The chief of these veins are the jugulars, the subclavians, and the terminal portion of the inferior cava. Opening into the latter are the hepatic veins which receive the intrahepatic veins. These latter are certainly kept open by their attachment to the dense tissue of the liver, an arrangement which allows the negative pressure in the inferior cava to extend to them.[4] When we reflect that the blood pressure in the portal vein is no more than some 10 mm. Hg, the advantage of a negative pressure in the tributaries of the hepatic veins is obvious.

The arteries must not be thought of as having the same thickness during life as after death; when distended by the blood pressure they are not more than half as thick as when contracted after death. The increased thickness due to post-mortem contraction involves the media chiefly.

The microscopic structure of the blood-vessels.—A few points in connexion with the minute anatomy of the blood-vessels require mention here. The larger arteries and veins are made up of three coats—the adventitia, the media, and the intima.

Arteries.—The adventitia consists of dense fibrous tissue containing elastic fibres, most numerous towards its inner aspect. These fibres are connected with the elastic laminæ of the media, and their presence in the adventitia tends to cause this coat to remain closely applied to the media when the latter contracts; yet it is probably only when the artery is distended beyond the average that the adventitia exercises pressure upon the media. There can be no doubt that the function of the adventitia is to protect the vessel rather than to support the pressure within. In extreme contraction of the media this coat tends to recede from the adventitia, which is then, in the case of the smaller vessels at least, entirely protected from the distensile effects of the blood pressure.

Between the adventitia and the sheath of the vessel is a lymphatic space.

The media, in the case of the larger arteries, consists of alternating layers of elastic membranes and unstriated muscle fibres, interspersed with which is connective tissue consisting of fibres and connective tissue cells. These latter when irritated proliferate and form new tissue. The elastic laminæ are united by obliquely disposed elastic fibrils. In the larger arteries the elastic elements predominate over the muscular; in the smaller vessels the opposite is the case. Indeed, in the arterioles the media is made up almost entirely of transversely disposed muscle fibres. It is, however, a great mistake to suppose that the large arteries are not well supplied with muscle tissue; it has been estimated that the aorta possesses as many as 65 layers of elastic membrane, and, inasmuch as these alternate with muscle fibres, it is evident that the total quantity of muscle tissue in the aortic wall is considerable. The significance of this fact will be pointed out in due course. The muscle fibres are for the most part arranged transversely, though oblique and longitudinal fibres are met with in certain vessels. I believe, however, that even when the fibres appear to be arranged in the transverse direction only they exercise by their contraction a longitudinal as well as a transverse tug. The reason for this conclusion will appear later. The arteries which supply bone and those of the retina are by some authorities said to be devoid of muscle tissue. This is certainly not true of the retinal arteries, nor of the nutrient arteries running in osseous canals, and I should be surprised if it be true of any arteries.

The intima consists largely of connective tissue cells which on stimulation readily proliferate and form connective tissue. This coat also contains a considerable proportion of elastic tissue.

Veins.—The adventitia of the veins is generally thicker than that of the arteries, and contains less elastic tissue. The media, on the contrary, is thinner than in the arteries, and consists chiefly of connective tissue, muscular and elastic tissue being relatively small in amount; but individual vessels differ considerably in this respect. Thus the walls of the jugular veins, in which the blood pressure is habitually low, have very few muscular and elastic fibres, while those of the veins of the lower extremities, in which vessels the blood pressure in the upright position is high, are almost as rich in these elements as are many arteries. (Similar though less striking differences are found in the *arteries* of the upper and lower parts of the body, the amount of muscular and elastic tissue in a vessel, be it artery or vein, bearing, in fact, a definite relation to the amount of blood pressure it is called upon to withstand, as Thoma and his pupils—Epstein, Sack, Mehnert, and Brigmann—have ably demonstrated.) Certain veins, such as those of bone, muscle, the central nervous system and its membranes, and the retina, are said to be (like certain of the arteries) devoid of muscular tissue. The walls of the cerebral sinuses are formed of dense dura.

As in the case of the arteries, the muscle fibres are generally arranged transversely, but certain veins, such as those of the lower extremities, the portal, and the renal veins, are also provided with longitudinal fibres.

The veins opening into the auricles (the vena cava and the pulmonary veins) contain striated muscle fibres, continuous with similar fibres in the auricles themselves. The heart-beat starts by a contraction of these fibres. Those in the pulmonary veins extend in man to the hilum of the lung, but n some mammals—e.g., the rat and the mouse—they extend as far as the smaller vessels and constitute the chief part of the vessel wall.

---

[4] I have no authority for saying that special means are provided for preventing the jugular and subclavian veins and the upper part of the inferior cava and the hepatic veins from collapsing, but this seems a reasonable *a priori* assumption.

The chief function of the adventitia, whether of artery or vein, is to afford the vessel protection from external injury, and this coat is accordingly thickest in those vessels which are most exposed to injury. Thus, as Ballance and Edmunds have pointed out, while it is very thin in the well-protected intrathoracic aorta, it is thicker in the abdominal aorta; and in arteries, such as those in the neighbourhood of joints, and, above all, in the facial and superior mesenteric arteries (the former of which occupies a very vulnerable position, while the latter is subjected to constant strain by the movements of the viscera) it attains remarkable thickness. That the adventitia takes little or no part in withstanding the blood pressure is conclusively shown by its remarkable thinness in the case of the intrathoracic aorta. Not only is the tension in the walls of this vessel much greater than in any other (both by reason of the high blood pressure to which they are subjected and, as will be explained in due course, the large size of the vessel lumen), but there is an absence of support from without—nay, more than this, the exterior of the vessel is even subjected to a negative pressure. The strain on the vessel wall produced by the blood pressure is, as we shall see, chiefly borne by the media.

(*To be continued.*)

Looking Back.

FROM

THE LANCET, *SATURDAY*, Dec. 31st, 1831.

EXPERIMENTS ON THE BLOOD IN CHOLERA.[1]

To the Editor of THE LANCET.

SIR,—Having been enabled to complete the experimental inquiries on which I have some time back been engaged in Newcastle-upon-Tyne, I beg you will have the kindness to give insertion to the annexed outlines of the results I have obtained:—

1. The blood drawn in the worst cases of the cholera, is unchanged in its anatomical or globular structure.
2. It has *lost a large proportion of its water*, 1000 parts of cholera serum having but the average of 860 *parts of water*.
3. *It has lost also a great proportion of its* NEUTRAL *saline ingredients.*
4. *Of the free alkali contained in healthy serum, not a particle is present in some cholera cases, and barely a trace in others.**
5. Urea exists in the cases where suppression of urine has been a marked symptom.
6. *All the salts deficient in the blood, especially the carbonate of soda, are present in large quantities in the peculiar white dejected matters.**

There are other results of minor consequence, to which I will not at present allude, neither shall I on this occasion offer any observation on the practical inference to which my experiments may lead. In a few days a detailed report shall be published, in which the mode of analysis, &c. will be minutely described. It will be found, I regret to say, in every essential particular, to contradict that recently given by Hermann. All my experiments, however, have been publicly performed, and can be authenticated by numerous witnesses, a precaution I thought it necessary to adopt, lest it might be supposed that I impugned, without sufficient foundation, the accuracy of the Moscow professor

May I add, that until the publication of my report, I shall deem the suspension of discussion on the results now introduced as a matter of personal courtesy and obligation.

I am, Sir,
Your obedient servant,
London, 29 December, 1831. W. B. O'SHAUGHNESSY, M.D.

* The blood and dejected substances were obtained in one analysis, from the same patient, and the blood was drawn half an hour after the evacuation occurred.

---

[1] Vide "Looking Back" in THE LANCET of Dec. 11th, 1909, p. 1770.

The Lancet Commission

ON

RINGWORM,

ITS PREVALENCE, INFLUENCE, AND TREATMENT.

With Special Reference to the Metropolis.

A VERY few words will suffice to introduce the work which follows. Recognising the grave prevalence of ringworm and the disastrous influence which this prevalence has upon the education of children, we invited two thoroughly competent dermatologists to make an inquiry for us into the whole question as it is at present affecting the school children of the metropolis.

The Grave Prevalence of Ringworm.

The prevalence of parasites on and in the human body is characteristic of comparatively low forms of civilisation. All who are acquainted with savage races know to what a great extent both internal and external parasites prevail amongst such people. An excellent example of the wide extent of parasitic diseases was afforded by the pigmies who were brought from Central Africa to England two or three years ago. Each one of them imported several kinds of entozoa and several vegetable parasites of the skin also existed amongst them. Much has been done to check the prevalence of parasites among human beings, but more remains to be done. The risks of the spread of infection are especially great among children, for they are either unaware of the danger of contagion or unwilling to undergo the restraint which precautions entail. The spread of education has resulted in increased facilities for the spread of contagious diseases amongst children. Thus it has come to pass that in all large cities the vegetable parasitic diseases of the scalp are widely prevalent. A large proportion of all children are affected by some form of ringworm, and especially are the children of the less educated classes affected, for in this point it must be recognised that the less educated are really representatives of lower grades of civilisation. Fortunately, soon after puberty the human body is little tolerant of the presence of these parasitic plants. For some obscure reason most forms of ringworm die out before their host has reached the age of 20.

Nevertheless, from the age of infancy to about puberty children are extremely susceptible to all forms of ringworm. There was a time not very long past when it was not recognised that there was any need to sequestrate children so affected, and they were allowed to attend unchecked the public schools of this country; but when it came to be seen that such carelessness led to a widespread extension of the disease it was found desirable to exclude entirely from the schools, both private and public, all children known to be suffering from ringworm. The intention was good, and the plan no doubt served to check to some extent the spread of the disease, but though these children were forbidden to associate with their fellows in the schools of the country no attempt was made, or hardly any attempt worthy of the name was made, to prevent infected children from associating after school hours with those who were healthy. And so it happened that the disease continued to extend widely amongst children, especially those attending the public elementary schools. Meanwhile another evil hardly less serious had arisen from those very precautions which we have mentioned. The children excluded from the schools were excluded also from the educational facilities which those schools imply, and it was not as if this exclusion endured merely for a few weeks or months, for in not a few cases years elapsed without certain infected children attending school even once. Thus the Public Education Act has been nullified in many individual instances. The parents have been theoretically compelled to send their child to school, but the school has refused to receive the child, with the result that the child has lost that education which the Act provided for it.

Here and there certain boards of guardians made arrangements for special ringworm schools when they had under their care many children affected with this disease, but these arrangements, whether efficient or not, had no bearing on the children of parents who did not come within the operation of the Poor-laws. The process of exclusion has been going on steadily. The numbers excluded were great a few years ago, but they are greater still now, for the appointment of medical inspectors of schools and the employment of inspecting nurses have resulted in the removal from the classes of the elementary schools an even greater proportion of their scholars. And it is not only the children who are excluded who suffer: the schools suffer also. The medical officer of the Education Department of the London County Council has reported that 12 schools taken at random in various parts of London lost in 12 months 26,766 attendances from ringworm. If we may take this as a basis we find that the loss of attendances in the whole of London of the public elementary schools amounts to 1,179,934. If we may take the minimum number of sessions in one year required by the Board of Education to be 400, the total number of lost attendances is equal to the absence of 2950 children. The schools suffer pecuniarily, for every child who fails to attend means a diminution of the grant earned by the school. If the figures already given may be taken as fairly representative of losses of school attendances, we find that the total loss of grants amounts to £5654 in every year. This is a sum not to be despised even by the London County Council.

Dr. James Kerr, the medical officer of the Education Committee of the London County Council, has said: "The extent to which ringworm prevails amongst school children at the present time is a serious handicap to about 5000, many of whom have been compulsorily absent from the school for periods varying from a few weeks to as much as three years. The loss of education sustained by these children can never be regained. Calculations based upon an examination of the registers of a dozen schools taken at random prove that the loss of grants by reason of absence through ringworm alone amounts to £5654 per annum, so that any methods which can eradicate this disease, or even diminish its duration, must not only be welcomed by all educationists on behalf of the children but will prove to be an important economic factor. The argument at one time put forward against taking the matter in hand was that proper treatment was not available, and that the only treatment which was available was tedious and very uncertain, but now that the method of treating this disease by X rays has long since passed the experimental stage and has been proved to be certain and rapid, and in the hands of experts absolutely free from risks of any kind, any argument against the adoption of this method no longer holds good."

Dr. Sidney Barwise, county medical officer of health, Derby, says: "Ringworm prevails to such an extent among the school children in Derbyshire as to interfere seriously with their education and to handicap them in after-life. It has been calculated to the present time that upwards of 600 children are so affected." This information was asked for to indicate the extent to which ringworm prevails at a distance from London.

Thus we see that both from the point of view of the children themselves who are excluded from the schools, and also from the point of view of the schools which exclude the children, the present condition of affairs is extremely unsatisfactory. Education is lost, and if we believe, as probably we may, that even in their present condition the elementary schools have a civilising influence on the children who attend them, the children excluded from these schools lose not only education, limited as the word often now is to mere book-learning, but they lose also all those other elevating influences which flow from education in the true meaning of the word. The schools, too, lose in money, and the rate levied for education is necessarily higher because the grants which might have been earned are not received.

We have said enough to show that the evil of the present arrangement is great, and the question arises, Can anything be done to stem this advancing tide of ringworm, or even more to put an end to it, to remove completely, to eradicate thoroughly the disease from London or even from the whole country?

The Numerous Treatments: The X-ray Treatment.

We know nothing of the life of the parasites of ringworm apart from their existence on the human body. It is true that we can grow them in artificial media, but they have never been found growing naturally, unless in a living human or animal body. Some of them, indeed, we derive from the lower animals, and it is not impossible that the others live a soporific life on some decaying vegetable or animal matter, and therefore even if we could cure all cases now suffering from ringworm it would be impossible to guarantee that the disease might not reappear, even if not introduced from without. Nevertheless, such cases would undoubtedly be very few, and no one who considers the subject can doubt the expediency of doing the utmost to cure every case of ringworm in the British Isles, for if that were done the disease would become extremely rare and of little practical importance. Occasionally, at long intervals, it might appear to have arisen *de novo*, but prompt action on the part of the authorities would serve to put an end to such small local incursions. The question then has to be asked and answered—Is it possible so to treat ringworm as to eradicate the disease from this country?

Many have been the methods of treatment devised for ringworm. Examination of any large text-book of dermatology will reveal more than a hundred medicaments which have been recommended and employed for the treatment of ringworm, and new methods of cure make their appearance at not infrequent intervals. So that those unlearned in dermatology sometimes hesitate as to the drug to employ because of the number of drugs which have been recommended. Those who have had much experience of ringworm recognise that the disease can be cured by means of drugs, but it needs great perseverance on the part of the prescriber, and even greater perseverance on the part of the parent of the child, and even then, with all this exertion, the cure is not unlikely to occupy many months. It is difficult to express in figures the average duration of a case of ringworm when drug treatment is employed for its cure, but we think we shall not be misrepresenting the general opinion of dermatologists when we say that in most cases from 6 to 12 months are needed for the cure of a case of ringworm by means of the application of drugs. The disease, however, is most prevalent amongst those classes where we are least likely to find parents who have the perseverance needed, or if they have the perseverance they are little likely to have the time to devote to the thorough treatment of ringworm which the obstinacy of the disease requires. This may account in great part for the fact that the disease is more common among the children of the working classes, and we have further to consider that the possibility of isolation of infected children is very small in cases where the whole of the apartments sheltering the family may consist of two or even only one room.

Fortunately, the last few years have shown us that the Roentgen rays possess, among the many properties which to them belong, the property of causing a copious defluvium of the hairs of the part exposed, and, if the dose can be suitably adjusted, without producing any harmful effect on the other tissues of the scalp. It has not been proved that the Roentgen rays have any power of destroying the spores of ringworm; in fact, all the evidence that we possess shows that these low forms of plant life grow quite as freely under the influence of the Roentgen rays as if they were beyond them. But it is certain that in most cases the throwing out of the hair from its follicle is followed by the formation of a new hair with no evidence of disease in it. The falling hair has carried with it all the ringworm spores and has left the follicle empty and free from disease, so that the hair which replaces it does not contain any ringworm spores. This is a remarkable fact and is the basis of the greatest advance in the treatment of ringworm which has up to the present been known.

Many forms of ringworm of the scalp are recognised, but all of them seem equally applicable to the X ray treatment, and the good result that may be expected in the future is exemplified by those which have already been obtained in the treatment of favus. This disease was never common in London, but for a number of years past the frequency of it had been increasing, especially in the East-End, and even here it was almost always found in the families of those who have been born abroad. The natural habitat of the disease appears to be Poland and the Balkan Provinces. In these countries it is far more frequently met with than in any other part of the world, and the disease, as occurring in London, has been chiefly found affecting those who have emigrated from those countries. The increase in the number of favus cases became at last so great that it was resolved to devote special care to attempts to eradicate the disease. It was decided in 1905 to open a special school in Finch-street, Whitechapel, for children suffering from favus where the children could be isolated and educated, even if not treated, without the risk of spreading the disease in the ordinary schools. In June, 1906, the school was started with 61 pupils. In the beginning there was no attempt at treatment, but later the children's heads were regularly cleansed and in many cases a good deal of improvement followed, especially as the cases were followed up by a nurse, who made careful inquiries at the patients' homes. In May, 1908, an apparatus for treatment by the X rays was installed. For more than 12 months this method was regularly used, and by that time all the children but three had been cured, so that it was not considered necessary to continue longer a separate school. A few cases of favus will in the future no doubt be found from time to time, especially in immigrants, but these will be few and scattered and they can be treated as out-patients. It is worthy of note that all the cases treated at the Finch-street School were of alien descent with one exception.

These very satisfactory results of the X ray treatment, that favus has been for all practical purposes completely eradicated from the public elementary schools, and that the cases have remained cured for more than three months without any indication of any recurrence of the disease, justify us in assuming that by a similar process the closely allied disease of tinea of the scalp can be eradicated from amongst the children of London.

At first when X ray treatment was adopted for ringworm the ideas as to the dosage of the rays were of the vaguest. The object to be aimed at was to use sufficient of the rays but not to use too much, so that the risk of doing any harm to the tissues of the scalp might be reduced to a minimum.

There are obviously two methods by which this treatment may be carried out: either the patient may be given comparatively small doses of the rays at intervals until the hairs are thrown out, then the treatment would stop. If this method be adopted it is possible by frequent observation to observe the degree of reaction produced, and the use of the rays can be arrested before any violent reaction results. The other treatment is to give on one occasion only a single dose of the X rays, just sufficient to cause the throwing off of the hairs. At first sight the former of these methods, which was the first employed in point of time, might seem to be the safer and the more efficient, but experience has shown it is not so; for the difficulties are twofold—on the one hand, if the various applications of the rays are given at short intervals the risks of over-dosage will be by no means slight, for the reaction of one application will not have had time to show itself before another application is given; on the other hand, if the intervals between the applications are too great, so that the certainty of the absence of excessive reaction is assured, the loosening of the hairs will not be complete, and those which have been slightly disturbed will be able to regain to some extent their fixation before the next application of rays is made, whence it results that in many cases even after repeated application the epilation is only partial and insufficient.

The latter of the two methods mentioned was devised by Sabouraud of Paris, who by careful experiment was able to estimate fairly accurately the amount of X rays required to cause complete loss of hair. This dose he gauges, not by duration of application, not even by the ampèrage of the primary or even of the secondary current, but by the effect of the rays on a disc of sensitive material which needs to undergo a definite change of colour before the rays have been sufficiently applied. These pastilles of Sabouraud are acknowledged by most dermatologists to be of the greatest value in the treatment of ringworm.

An Inquiry into the Position in London.

As it has been now established that X ray treatment in some form is the most valuable method at our command for dealing with tinea of the scalp, it may reasonably be asked what is being done in London to combat the thousands of cases of ringworm which are known to the educational department of the London County Council. Although, for the most part, all who have had special opportunities for experience of the treatment of this disease are agreed that the X rays are the most suitable method of treatment and the most speedy, yet there is far from being any unanimity in detail amongst them as to the methods by which the X rays should be applied. Therefore it has been considered not only interesting but also of great practical importance to endeavour to ascertain what methods were actually in use, for the special modes of application adopted in the various hospitals do not find their way into print, whence it follows that many niceties of detail which are of importance for perfect success are not adopted because they are not known. In pursuance of this desire to ascertain what was being done in London in the treatment of ringworm we have instituted inquiries as to the methods pursued at the various cliniques, and we will now set them before our readers. The list of hospitals visited is not, and is not intended to be, in any way exhaustive, but our investigations have been directed to many of the most important, and we have taken care not to omit from our examination any clinique where any special method of application of the X rays is followed. At the same time, we have made inquiries as to the number of cases which could be treated at each of these hospitals, so that some idea might be arrived at as to the possibility of overtaking the immense number of cases already present in the schools.

London Hospital (Dr. J. H. Sequeira).—The department possesses two installations fitted with milliampère meters and spintermeters. The mode of application is by the circular glass shield which necessitates about seven exposure areas. The installation is also fitted with tachimeters, instruments which may be set to register any definite number of interruptions of the primary current; when this number is reached the current is automatically switched off; these instruments are of scientific interest but practically they are of little value because the action of one tube differs so greatly from that of another, and varies so in the tube itself from one minute to another, that a dose measured in this way can never be safely assumed to be exact. Dr. Sequeira said that after a long experience he was satisfied that with a proper apparatus, used with sufficient care in the hands of an expert, the X ray treatment of tinea is certain, rapid, and safe. Only five cases of more or less permanent alopecia have resulted from the treatment at the London Hospital, and they were all among the earlier applications. In two cases the affected areas were small and occurred just where there had been an overlapping of the applications. One was due to the excessive convexity of the skull, permitting a small part to be too near the anode, and two of them were due to overdose, but one of these had been previously treated with severely irritating drugs. Some pastilles have been placed on the market which have been responsible for misadventures, and he believed that the only trustworthy pastilles were manufactured by Radiguet and by Drault, both of Paris. At the London Hospital they tried to work under such conditions as would administer a pastille dose in 12 minutes or even a little more. By far the greater number of cases, probably 95 per cent., were examples of microsporon. The suggestion of injury to the brain he did not hesitate to say was entirely imaginary. But it would be unwise to expose to a prolonged administration of X rays the skull of a child before the fontanelle was closed. It is not possible for the most part to give any record of results concerning mental effect, but 267 of his cases had been inmates of orphan schools or similar institutions and he had been able to ascertain from the authorities concerned, and in this respect their reports were unanimous that after a lapse of two years not a single case of mental abnormality had been observed in any one of these children. Unless the accommodation at the London Hospital are increased and more assistants provided it will not be possible to undertake the treatment of a larger number of children than at present. Dr. Sequeira considered, however, that if the London County Council or its education committee were to attack this question in the thorough manner in which it had been undertaken by the Metropolitan Asylums Board the prevalence of ringworm in or around London would in the course of four or five years be infinitesimal.

Guy's Hospital.—In this department 454 cases of ringworm were treated by X rays in one year. During the term of office of the present medical officer, Dr. C. E. Iredell, no accidents or untoward circumstances have occurred. For the radiation of each complete scalp ten applications were needed, as circular shields were employed. A milliampèremeter was employed, but little attention was paid to the spark gap. Dr. Iredell said that sometimes the hair did not fall because when the pastille reaction had not been reached in half an hour the application was always stopped in case all the factors were not working accurately. It would not be possible to treat any more cases than at present unless another installation was provided.

Evelina Hospital for Children.—The X ray department was in charge of Mr. R. Higham Cooper. The technique adopted in the X ray treatment of ringworm was practically that devised by Sabouraud; there was, however, no milliampèremeter, but some attention was paid to the equivalent spark gap; an absolute reliance was placed on the reaction of the pastille. Extremes of vacuum of the tubes were carefully avoided, the operator endeavouring to work under such conditions as would produce a pastille dose in about 20 minutes. At this hospital the number of children treated was vastly on the increase. Accurate figures for any number of years could not be given, but in the three months May, June, and July of 1909 69 cases were treated, while in the month of September over 50 cases had been dealt with. It was, however, worthy of mention that by reason of a letter which appeared in the *Times* in April, 1909, suggesting that permanent injury might be caused to the brain by the application of X rays, many parents were declining to submit their children to the treatment.

University College Hospital.—The department possesses two installations, but they are without spintermeters, milliampèremeters, or anything else to measure dosage, and Sabouraud's pastilles are not employed. The technique employed here was peculiar to the hospital. The scalp was divided into five or six areas, and each area was exposed to the rays for ten minutes on three alternate days, each area thus having to be treated three times, and each head thus received a minimum of 15 exposures. Very little attention was paid to the hardness or softness of the tube, so that in the case of a tube being used which would administer a full dose in 15 minutes, it would adminster a double dose spread over the three applications. When a tube's equivalent spark gap was six inches, it was considered too hard, and when it was so soft that reverse currents passed freely it was considered too soft. This method did not appear to be very satisfactory. It was laborious to the operator and tedious to the patient and attended with definite risks of permanent alopecia; for an overdose from a hard tube, not sufficient to cause dermatitis, may be sufficient to cause permanent baldness. It may be mentioned that the dermatologist at this hospital has no control over the X ray operator or his department, so that when a patient has been certified for X ray treatment he passes from the hands of the dermatologist. In 1908 87 children were X rayed for ringworm, but in 1909 147 had been so treated up to Sept. 21st.

St. John's Hospital.—Mr. Chisholm Williams has charge of the X ray department. It possesses one installation fitted with a milliampèremeter and a spintermeter, but little attention is paid to the spintermeter. During the past year 270 children were treated by X rays with no misadventure of any kind. Mr. Williams considered that children under the age of 10 years and having more than one area infected ought to have the whole head irradiated at once. As to the number of children that could be treated, if he had another installation he could, he said, treat 300 more children in a year, but with an additional assistant the hospital could deal with 1000 children a year. He considered that so long as the education committee of the London County Council did not take the matter in hand it would be impossible to make any appreciable diminution in the extent and prevalence of the disease.

Ringworm schools of the Metropolitan Asylums Board.—These are under the charge of Dr. T. Colcott Fox. The Board used to have two schools devoted to ringworm—one at Sutton containing over 400 beds, and another at Witham with 180 beds, but after the introduction of the X ray treatment it was soon found that one establishment was sufficient to deal with all the cases, and the school at Witham was therefore closed; at the present time there are even at Sutton over a hundred vacancies. The average period of detention of the first 100 children admitted to the Board's ringworm schools was under ordinary medicinal treatment 19 months, but the average stay of the first 100 children treated by X rays was four and a half months from the time the treatment was actually begun, yet they were not dismissed until the re-growth of hair appeared. The admissions during the year 1908 were 807, an increase of 61 compared with the year 1907. The majority of the cases—in fact, about 82 per cent.—are of the small-spored type, whereas in general hospital practice as many as 95 per cent. are small-spored. Dr. Fox considered that the treatment by X rays was by far the best method, especially when the infected area was at all large. A prolonged experience of this method confirmed his views that it was in many respects ideal, especially in regard to the points of certainty, rapidity, and painlessness; but this effective agent demands for its absolute success the most careful attention to the details of the technique, such as exists in the Board's ringworm school, and the practice of the methods must be in the hands of an expert.

Dr. H. G. Critchley, who is in charge of the X ray department at the Asylums Board school at Sutton, gave the following account of the arrangements. "We have three installations, each fitted with a milliampèremeter, spintermeter, and a clock. All three installations are employed at the same time by one medical officer, whose attention is unremittingly fixed upon the working conditions of the tubes as indicated by the milliampèremeters and spintermeters, while the Sabouraud pastille is relied upon as an absolute check. A nurse is always in attendance and assists in getting the children in position and in keeping records of the work done, but no case is ever commenced or finished except by the medical officer himself. The 'five-exposure naked' method is in practice here without any shields except for the ears, face, and neck. Except when the occiput is being treated the children lie comfortably on a couch instead of sitting upon a chair, and in this way it is possible to do the whole head of young children at a single sitting. The number of children treated by X rays is nearly 4000, while about 800 have been dealt with during the past year. In the earliest period of X rays treatment three or four cases of dermatitis occurred resulting in more or less permanent alopecia, but since that time upwards of 15,000 applications have been made without a single untoward result. I endeavour to work under such conditions as will provide a pastille dose in 14 to 18 minutes; a very soft tube causes superficial erythema, which is of no importance but is, nevertheless, better avoided, while a very hard tube may cause an impaired regrowth though falling short of causing a severe dermatitis. When a tube is new and soft I always substitute a harder one at the end of 15 minutes; on the other hand, I have to treat many children under four years of age, and in such cases the reasons against the use of a very hard tube are obvious. At one time some untrustworthy pastilles were on the market, but Radiguet's or Drault's are both reliable. It is a mistake to examine a pastille too frequently, for it exposes it to the effect of light and retards its perfect reaction, and this may induce an over exposure, but this risk can be absolutely obviated by the use of the milliampèremeter and with attention to the spark gap. During the past 12 months I have made over 2000 exposures for ringworm alone, but never without a milliampèremeter and a spintermeter, and with the assistance of these indicators I do not hesitate to apply the X rays to heads exhibiting much impetigo, and this is extremely common among institution children. The inflammatory condition is thereby considerably aggravated, but as soon as the hair is shed the impetigo vanishes. The amount of X rays which reach the brain through a pastille dose by a median tube is only about one-fifth of a dose, so the suggestion of injury to the brain is simply ridiculous."

St. Bartholomew's Hospital.—The X ray treatment of ringworm is under the care of the physician for diseases of the skin, Dr. H. G. Adamson. There is one installation fitted with milliampèremeter and spintermeter. The number of cases of ringworm treated by X rays is very small, only about 100 in the year, because there is no X ray operator, and Dr. Adamson cannot afford the time to do more. Dosage is measured by the Sabouraud pastille, but much attention is paid to the indication afforded by the milliampèremeter and the spintermeter, and endeavour is made to work under such conditions as will produce the pastille dose in about 14 minutes; 12 minutes is considered too short.

When treatment of the whole scalp is undertaken the "five-exposure naked" method is adopted. No case of dermatitis or permanent alopecia has occurred. Dr. Adamson considers that the idea of injury being caused to the brain is unreasonable, the amount of rays which reach the brain being less than a quarter of the dose.

Croydon Education Committee and Ringworm.

Dr. H. Meredith Richards has made the following report, which may be usefully read in connexion with the foregoing summary of inquiries:—"In May, 1906, I made a recommendation to the education committee that the children suffering from ringworm should be treated by X rays, and I pointed out that the cost would be more than recouped by the extra amount of attendance grant which would be earned. This recommendation was adopted, and I was authorised to arrange tentatively for this treatment for six months. Instead of having to incur the expense of installing the costly apparatus required we were able to utilise the services of an X ray expert resident in the town, and arrangements were made with him to carry out the necessary work. Among the first 50 children so treated were some who had been under various forms of treatment for two years, but without any appreciable result. Within five weeks from the time of the X ray application these were all free from infection and readmitted to school, and it soon became evident that we were beginning to get the disease under control. Nearly 350 children have now been treated by X rays. During the first few months we proceeded with great caution as it was most important that there should be no cause for anxiety among the parents whose children were being treated, but very soon the parents' requests for immediate treatment were more than we could cope with. However, apparently in consequence of a letter which appeared in the *Times* suggesting that these methods might cause permanent injury to the brain, many parents have hesitated to submit their children to the treatment, while some absolutely refused to do so. But we have still under observation most of the children who were treated two or three years ago, and not in a single instance is there any suspicion of an injury having been caused."

The Results of the X Ray Treatment.

It will thus be seen that there is great unanimity amongst those who have had much experience with the X ray treatment of ringworm, that this method is rapid and certain and free from risks in the hands of those who thoroughly understand it, but that there is a great deal of diversity of opinion as to many of the details. But before dealing with the question of the methods to be adopted in attempting to eradicate the disease from London schools it would be wise to devote some attention to the question as to the possible risks of this method.

When the treatment was young various undesirable effects were produced. In some cases the hair only returned partly, in some it did not return at all, while in a very few X ray ulcers were produced. But these harmful effects are never seen now. We have learnt the conditions which govern their appearance, and anyone at all cognisant with the employment of X rays should be able to avoid them with certainty. The possibility, however, of a more serious danger has been suggested. In April last a letter was published in the *Times*, written by Dr. Dawson Turner of Edinburgh, in which he suggested that there was a possibility that the treatment of ringworm by X rays might cause injury to the brain. This letter was widely copied or rather quoted by other papers, especially by those which were opposed to the more or less compulsory treatment of ringworm by X rays. The letter raised widespread fear in the minds of many parents, with the result that very large numbers of children who would otherwise have been cured of their ringworm and be now receiving the benefit of education are still excluded from school, and are likely to be excluded for very many months to come. Proof of any harm is absolutely wanting. No one who has employed the method for long has seen any instances bearing out Dr. Dawson Turner's contention. It may be pointed out that he has suggested that the results may not manifest themselves for many years after the application of the rays, but more than five years have elapsed since the earliest application, and we have not been able to learn that in any of these has harm resulted. It is incumbent now on those who imagine that harm does follow the application of X rays to produce the grounds for the view.

We feel that a careful consideration of all the evidence available justifies us in saying that X rays, when properly applied to the scalp of a child suffering from ringworm, do no permanent harm either to the scalp, to its hair, or to the tissues beneath. The points which seem to us important in the treatment are the following. The scalp should be deprived of its hair in as few applications as possible. If any circular shield or stops be employed it must necessarily follow that either there must be areas of overlapping, or areas untreated by the rays. When only small areas are to be treated the hexagonal lead-glass stops are preferable to the circular, because hexagons can be fitted into one another. The "five area naked" method appears to us to be the best, for, as was first shown by Adamson, the overlapped areas only receive their due quota of rays, though it is necessary that ears, nose, and neck should receive protection. The strength of the secondary current from the coil should be controlled by observations of a milliampèremeter and of a spintermeter, but, above all, Sabouraud's pastilles prepared from trustworthy material should be employed.

Further, while the assistance of an intelligent nurse is of the greatest value to the X ray operator the full responsibility of the exposure and the results should rest on the operator himself.

In nearly all cases the whole head can be epilated in five or at the most six exposures. The nape of the neck seldom needs treatment and may usually be neglected. The ears, the nose, and the neck generally require to be shielded.

Methods of Dealing with Cases of Ringworm in London.

We may, therefore, take it as proved from the evidence which we have brought forward, and which accords with the opinion of practically all dermatologists, that at the present time the X ray treatment is the most certain and the most rapid method of treatment of ringworm of the scalp, and that with care and in the hands of an expert no danger is incurred. This being the case, it has to be determined what is the best method of applying the X ray treatment to the enormous number of children suffering from ringworm who now attend, or rather ought to attend, the public elementary schools of London. Only two methods can be suggested. Firstly, the work may be undertaken by the existing charitable institutions of the metropolis, or secondly, special centres might be established by the London County Council to deal with these patients. If the first method be adopted increased accommodation is necessary even were the existing institutions which possess X ray installations to work to their full capacity. At present there have to be dealt with not merely the annual increase in the cases of ringworm but the many cases which remain over from former years, and which have failed to recover under the older methods of treatment. It is probable that at the present time about 1000 cases yearly are added to the previously existing number of cases of ringworm, so that for the next few years arrangements made must be able to deal with 1000 new cases yearly in addition to the 5000 cases which at present remain uncured.

In the evidence we have brought forward it will be noticed that several of the existing hospitals express their ability and willingness to treat cases sent to them by the County Council, provided that it be possible to obtain additional installations and additional assistants. It would probably be possible to deal in this way with the annual increase, but that it would be equally possible to clear off all the residuum of cases from former years is not so clear. For this work, done on behalf of the London County Council, the charitable institutions performing it should receive remuneration, and the additional assistants required should be adequately paid. We understand that the London County Council is willing to adopt some such procedure, and it appears to us that this would be by far the cheaper method, for the Council would not need to spend any money on bricks and mortar.

The alternative scheme requires the establishment of a number of centres to treat these cases. The question of school cliniques is quite beside the present matter. Ringworm demands consideration for itself alone, and if considered from the economic point of view only the adoption of the X ray treatment will be a gain to the rates, while every child so cured will tend largely to limit the field of infection.

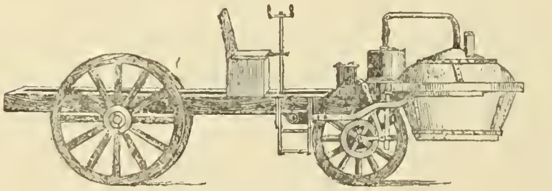
The establishment of four ringworm centres in the County of London, each provided with two coils and worked by experts, would in the course of a year make a very appreciable impression upon the prevalence of the disease, and would probably by the end of the third year reduce it within inconsiderable limits. For calculations based upon 500 consecutive cases show that, allowing for school holidays and for careful treatment of the induction coils, each centre could turn out 700 cured cases in one year.

THE MEDICAL PROFESSION AND THE EARLY HISTORY OF THE MOTOR-CAR.

> "The chariots shall rage in the streets, they shall justle one against another in the broad ways: they shall seem like torches, they shall run like the lightnings."—Nahum ii. 4.

It is natural in considering the history of the motor-car to commence with the history of the coach, and the coach seems to have been at first chiefly employed for conveying sick persons and women. Men thought it weak and effeminate to use coaches unless they were precluded from riding on horseback by the gout or excessive corpulency or some other physical disability. Therefore it may be said that the litter was the father of the coach. And, further, as so many millions of people now spend so much of their lives in travelling in coaches of all kinds, the subject of their proper construction and healthy condition cannot be said to be without interest to the medical man.

Fig. 1.

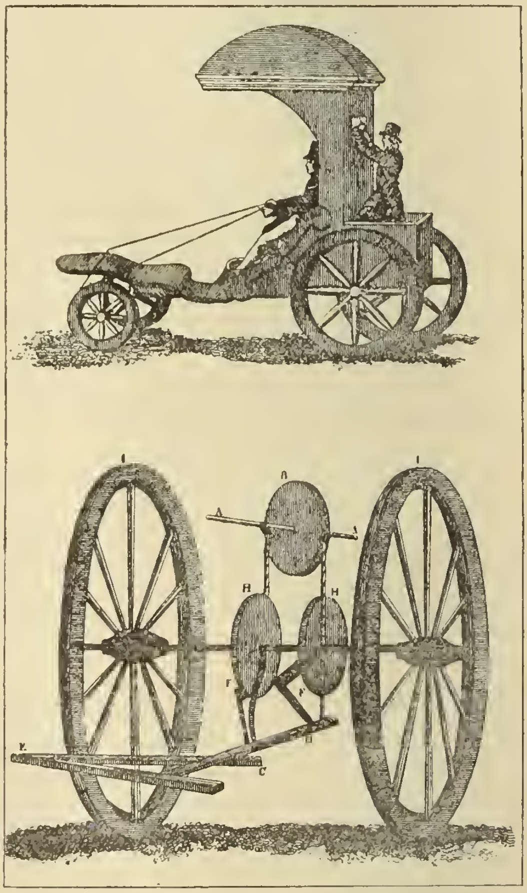


Cugnot's steam carriage.

It seems to be generally accepted that the first carriage propelled by steam was the steam lorry constructed by Cugnot, a French military engineer (born in 1725), in the year 1763, but this attempt proved a failure, although six years later he made an improved form of the vehicle which attained a speed of two and a quarter miles per hour. What his Christian name was seems to have given trouble to various writers, for he has variously been called Theophilus, Lorrain, Joseph, and Nicholas Joseph. The last seems to be correct, but in those days every man was "Citoyen" and Christian names were of little account. We reproduce a picture of its general appearance, and for description quote an interesting book published in 1896 at Tunbridge Wells by Mr. George Smith, a coachmaker, entitled "A Concise History of English Carriages." He says: "It was of a very wonderful design—a very long and heavy timber structure was supported at the rear by two great wheels about 6 feet high, and in front by a single central wheel. An extension of the frame in front carried a gigantic boiler and furnace combined; from the top of this a steam pipe led to a cylinder, and, by heavy and cumbersome connections a piston above the front wheel, which it worked by levers and cranks. The original and model are to be found in the Conservatoire National des Arts et Métiers, Rue St. Martin, Paris, which the writer visited during the Salon du Cycle, December, 1895." There is also a model, made by Messrs. Regnard Frères in 1892, deposited in the Science Museum at South Kensington, London. It is exhibit No. 107 in the Catalogue of the Mechanical Engineering Collection in the Science Division of the Victoria and Albert Museum. The model stands in the shadow of the original historical locomotive, "The Rocket," built by George Stephenson. We quote here a description of the model contained in the official catalogue :—

> Nicholas Joseph Cugnot, a French military engineer, in 1769 made a steam carriage somewhat like this model, which, travelling on a common road, and carrying four persons, attained a speed of 2·25 miles per hour, but, the boiler being insufficient, the supply of steam failed after running for 12 or 15 minutes. These results, however, induced the French Government to order the construction of an engine for the transportation of artillery, which should be capable of carrying a load of about 4·5 tons and maintaining a speed of 2·25 miles per hour on level ground. The machine, of which the model shown is a copy, was made in 1770 by Brézin to Cugnot's designs, at a cost of £800, but was never tried, and is now preserved in the Conservatoire des Arts et Métiers at Paris. It consists of a heavy timber frame supported on three wheels and carrying in front an overhanging copper boiler. The front wheel has a broad, roughened tire, and is driven by two single-acting, inverted vertical cylinders 13 in. diam. by 13 in. stroke. The two pistons are connected by a rocking beam, and their motion is transmitted to the driving axle by pawls acting on two modified and reversible ratchet wheels. The distribution of steam to the two cylinders is performed by a four-way cock actuated by a tappet motion. A seat is provided for the driver, who, by means of gearing, was to be able to steer the machine, the boiler and engines turning together as a fore-carriage through 15 deg. either way.

Fig. 2.



Dr. Richard's horseless carriage and method of propulsion.

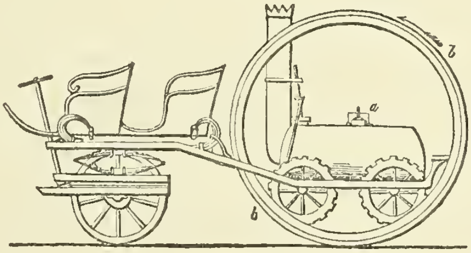
A description will also be found in an excellent book entitled "The Complete Motorist," by A. B. Filson Young (Methuen and Co., London, 1904), together with another view of Cugnot's machine, and other views and particulars will be found in Mr. T. Rhys Jenkins's book on "The Motor-car" (T. Fisher Unwin, London, 1902). A plan of Cugnot's steam-car will also be found, with an excellent short history of the motor-car by the Marquis de Chasseloup-Laubat, in a book entitled "Motors and Motor-Driving," by Alfred C. Harmsworth, published in 1902. In this book also are interesting pictures of Hancock's steam coach "Era" (1833), the Squire and Macerone steam coach (1833), and Goldsworthy Gurney's steam coach (1833). In Mr. Smith's book is a picture of "The Patent Impulsoria" (reprinted from the *Illustrated London News*, June 22nd, 1850), a weird-looking contrivance consisting of a set of road wheels rotated by means of horses perched over the wheels and walking up a moveable inclined plane (an "endless" slope) after the fashion of a treadmill (this was no doubt the "Patent Impulsoire" shown by A. Crestadora of Manchester at the Great Exhibition, London, in 1851; a picture of "The Blackburn Motor-car," reproduced from the *Field* of 1878, designed by Mr. Blackburn of Tunbridge Wells, which resembled a smart dog-cart with a central front wheel instead of shafts; and a picture of Sir David Salomon's first Daimler motor-car. The Marquis de Chasseloup-Laubat also mentions that he wrote an interesting account of the motor-car for the *North American Review* in September, 1899.

Mr. Filson Young in his book gives several interesting illustrations of other early steam carriages—viz., Murdock's model (1784), Trevithick's (1802), Griffith's (1822), Gordon's (1824), James's (1824), Gurney's (1827), Dance's (1833), Hancock's (1833 and 1836), Church's (1833), Rickett's (1861), Carrett's (1861), Randolph's (1872). In the Science Museum at South Kensington pictures of some of these may also be seen. In a little book of "Curiosities" which was published in London in 1826, written in Spanish and evidently intended for readers in South America, there appeared a picture of a curious "carruaje sin caballos," or horseless carriage, which we here reproduce (see Fig. 2). The description stated that one of the first examples of this invention was that of a Mr. Richard, a medical man of Rochelle, who made the experiment in Paris "in the past century." The footman at the rear of the car kept on pressing down treadles which were connected with the wheels in such a way as to impart a forward movement to them, while the medical man in the fore part did the steering. The doctor's footman had no sinecure.

Mr. Filson Young gives a picture of one of Simon Stevin's sailing carriages dated 1600, and the little Spanish book to which we have just referred contains as a frontispiece a different picture of one of these sailing carriages, entitled "*Carruage con Velas*," and says it was constructed by Stephinus. Stephinus was a mathematician of Bruges who died in 1633, and particulars of him, we believe, may be found in biographical works. It may be interesting to mention here that Athanasius Kircher or "Father Kircher" (1602–1680), a pioneer of the magic lantern, magnetism, and acoustics, had an idea of putting a small wagon in motion by adding to it a pipe filled with quicksilver and heating it with a candle placed below it. This is mentioned in those interesting books, the "History of Inventions and Discoveries," by John Beckmann (English translation, London, 1814), and a reference is given to "Physiologia Kircheriana, Amstelodami," 1680, fol. p. 69. Kircher, by the way, wished to explain everything by magnetism, and used it in the treatment of diseases in peculiar ways. Although not a medical man he published a famous treatise on plague, in which he advanced an early theory of the spread of disease by germs or animate corpuscula.

Contemporaneously with Cugnot's failure with his steam car great improvements were made by the renowned James Watt of Greenock in his "Methods of Lessening the Consumption of Steam and consequently of Fuel in Engines." John Weale, the well-known writer on engineering subjects, stated in 1849 that the first idea of using the powers of steam for propelling carriages was generally ascribed to Dr. Robison in 1759, when it was suggested by him to Watt, who included a steam car in his patents of 1769 and 1784, but never carried them out. Mr. Young says, however, that Murdock, Watt's assistant, made a model. This refers to John Robison, who was born at Boghill in Stirlingshire in 1739 and died at Edinburgh in 1805. He was professor of chemistry at Glasgow (following Dr. Black, who recommended him) and of natural philosophy at Edinburgh, and contributed articles to the "Encyclopædia Britannica." Weale's statement is practically confirmed by the "Dictionary of National Biography." But greater credit is due to Joseph Black, M.D., F.R.S.E., of the University of Glasgow and later professor of chemistry at Edinburgh, for his discovery of "latent heat," and his conclusion (so aptly put in "The History of Chemistry," by Thomas Thomson, M.D., in 1830) that as water is ice united to a certain quantity of *latent heat*, so steam is water united to a still greater quantity. The requisite experiments were first attempted by Dr. Black in 1764 and he concluded that the latent heat of steam was not less than 810°. Mr. James Watt afterwards repeated these experiments with a better apparatus and very great care, and calculated from his results that the latent heat of steam was not under 950°. In 1797 Edmund Cartwright (of power-loom fame) invented a mode of applying the vapour of alcohol or other ardent spirit as a substitute for common steam, but was unsuccessful in obtaining a development of the idea. By the year 1800 the steam engine was in general use throughout the United Kingdom, but it seems somewhat strange that as far back as 1834 there was published a book entitled "A Concise History of Steam Carriages on Common Turnpike Roads." One would gather therefrom that these vehicles were then ancient history, and other authors assure us that motor cars are no new notion. Mr. Charles Frederick Partington, who wrote several works on mechanics, the steam engine, and coach-making in the "thirties," says in his "British Cyclopædia of the Arts and Sciences," dated 1835, that Bishop Wilkins describes the land-sailing vessels or wind chariots which had been long known in China. Mr. H. G. Wells seems to have taken note of this fact, as in his recent novel "War in the Air" he describes the Chinese as having secretly manufactured the greatest fleet of air ships in the world. Mr. Partington gives a concise account of the progress of steam carriages, some of which he himself possessed. He particularly notices the invention of the late Mr. David Gordon, patented in 1822, and copied the illustration of that gentleman's road car from a valuable work on locomotion by his son, Mr. Alexander Gordon. The title of this work was "A Treatise on Elemental Locomotion." This figure we reproduce (see Fig. 3). It will be observed that the front seats give it an appearance slightly approaching that of the modern motor car. In describing it we cannot do better than follow Mr. Partington's words:—

FIG. 3.



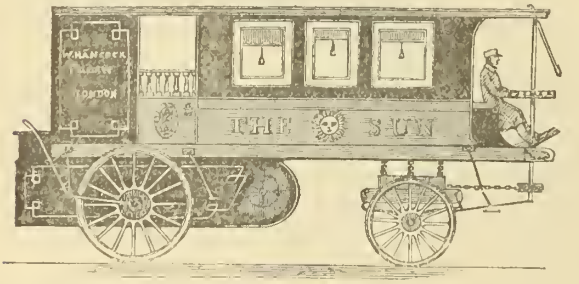
Mr. David Gordon's road car.

> The above figure describes a side elevation of this machine, *a* is the high-pressure steam engine, having the wheels made with teeth working into a rack in the interior of the circumscribing roller *b*. The large rolling drum is about nine feet in diameter, and five feet from end to end. In the inside of this there is an iron rack, in which the toothed wheels of *a* are made to work. By this arrangement the engine urged forward by its steam, must climb up the interior of the drum, as a turnspit dog or squirrel would do in pursuing its daily labours, and the large drum rolling onward impels the carriage. ...... Now it will be obvious that a roller of this kind, so far from deteriorating a road, must materially improve it, and it may not inappropriately be termed a movable railroad.

Various inventors after Cugnot made attempts to construct steam carriages, and it is recorded that Oliver Evans of Philadelphia patented a steam wagon in 1782, but the first invention which claims notice is that patented in 1802 by Richard Trevithick, a Cornishman, and his cousin, Andrew Vivian, and shortly afterwards brought into operation. Their carriage was mounted upon four wheels; the principal weight resting upon the hind wheels, which were of large diameter, while the fore wheels, which were used for guiding the carriage, were small and nearer together than the others. The boiler and the steam cylinder were placed at the back of the hind axle, and the cylinder was horizontal. The carriage, shortly after the date of this patent, was exhibited in London with sufficient success to prove the practicability of the invention. The inventors, however, soon gave up their experiments on common road locomotion and adapted their machinery to use upon a railway.

For about 20 years after no steam carriages for common roads were constructed, but when the improved state of the turnpike roads rendered steam locomotion more practicable upon them, steam-carriage projectors arose in rapid succession. Mr. Julius Griffith's steam carriage, patented in 1821, had the boiler and machinery suspended from the framework by chains and helical springs. Mr. David Gordon's machine, patented in 1822, we have referred to above. Another machine by this inventor had two long propellors or legs, intended to obviate the supposed tendency of wheels to slip when ascending a slope. Of others who have invented and built steam carriages after 1824 the names of Sir Goldsworthy Gurney, Burstall and Hill, W. H. James, Walter Hancock of Stratford, Summers of Southampton and Ogle, Heaton, Dr. Church of Birmingham, Sir Charles Dance and Field, John Squire and Francis Macerone of Paddington, Scott Russell, Hills, and Sir James Caleb Anderson are the most prominent, although many others made attempts. Several of these inventors produced carriages capable of from 10 to 12 miles per hour for considerable distances, and a much more rapid rate of motion for a short time. Mr. Young says that Dr. Church's steam coach was a marvellous construction in outline and ornamentation, something between a gipsy van, a merry-go-round, and a ship. Pictures of it are shown at South Kensington. The greatest amount of success attained was in a steam carriage constructed by a Cornishman, Mr. Goldsworthy Gurney (1793–1875), who travelled in 1829 from London to Bath and back in one. He had been incited to the work by having observed one of Trevithick's cars running on the road in Cornwall. John Wade has written the following interesting note in his "British Chronology," under the date of July 28th, 1829, concerning this trip. He says: "Mr. Gurney's steam carriage, intended to go on the common roads, attacked by the mob at Melksham; it was on an experimental trip to Bath." The same historian also recorded a note about a trip in a steam carriage two years before, for under the date of Sept. 8th, 1827, he says: "A steam-carriage, to travel on common roads, made an excursion to Highgate; it proceeded at the rate of thirteen miles per hour, and its motions were easily directed by the conductor." Mr. Gurney was knighted in 1863. An excellent account of his life is given in the "Dictionary of National Biography." He was originally educated for the medical profession, and was placed with Dr. Avery at Wadebridge as a pupil and afterwards settled there in practice, devoting his spare time to the study of chemistry. In 1823 he began his experiments on the steam locomotive and gave up his medical practice. He invented the "oxy-hydrogen" blow-pipe and the Bude light.

FIG. 4.



Hancock's steam omnibus.

Mr. Gurney published in 1832 "Observations on Steam Carriages on Turnpike Roads, with the Report of the House of Commons." He also published papers on Chemistry. In consequence of the conflicting claims of different inventors a Committee of the House of Commons was nominated to investigate the subject, and it examined various witnesses whose steam carriages had been in daily use on the common roads—viz., Messrs. Summers and Ogle, Mr. James Stone, Mr. Gurney and others, and examined experts as to the effect of horse traffic in comparison. In the course of the evidence Mr. Ogle stated that his experimental carriage had travelled from London to Southampton in some places at a velocity of from 32 to 35 miles per hour. In October, 1831, this Committee presented a report favourable to the introduction of steam carriages on common roads. This report concluded with an interesting summary of what had been demonstrated to the Committee, which ran as follows:—1. That carriages can be propelled by steam on common roads at an average rate of ten miles per hour. 2. That at this rate they have conveyed upwards of 14 passengers. 3. That their weight, including engine, fuel, water, and attendants, may be under three tons. 4. That they can ascend and descend hills of considerable inclination with facility and safety. 5. That they are perfectly safe for passengers. 6. That they are not (or need not be, if properly constructed) nuisances to the public. 7. That they will become a speedier and cheaper mode of conveyance than carriages drawn by horses. 8. That, as they admit of greater breadth of tyre than other carriages, and as the roads are not acted on so injuriously as by the feet of horses in common draught, such carriages will cause less wear of roads than coaches drawn by horses. 9. That rates of toll have been imposed on steam carriages which would prohibit their being used on several lines of road, were such charges permitted to remain unaltered. Nothing practicable, however, came from the various inventions and the report except the running of some steam omnibuses and coaches in London and a few places in the provinces, as commercial failure attended all these attempts, and the attention of speculators was absorbed by enthusiasm for railways. We reproduce a picture of one of these steam coaches—viz., Hancock's steam omnibus (see Fig. 4).

In the year 1860 the fourteenth Earl of Caithness (James Sinclair, F.R.S.), who died in 1881, invented what he called "The Road Locomotive Steam Engine," for travelling on macadamised roads. His lordship acted as his own engine driver. This title, however, was used about that time for an engine which was more like the present traction engine in appearance, except that it had the addition of a little low trolley like a wheelbarrow fixed to the front part where a second attendant sat and guided the engine by a tiller like a person in a bath chair. The earl's conveyance was reported to have travelled over rough roads at a rate of eight miles an hour at a cost of less than 1*d.* per mile. Of course, the roughness of the roads was a great obstacle to be overcome in the construction of a perfect carriage, and this has been achieved by the introduction of indiarubber for the tyres of the running wheels, and it is on record that a Mr. R. W. Thomson of Edinburgh by adding indiarubber to the tyre of the wheels of locomotives in the year 1868 was considered to have solved the question of steam traction on common roads by "road steamers." Mr. Smith also refers to this in his book, but the invention of the Dunlop tyre revolutionised both cycle and motor traffic, and in the year 1891 the supremacy of the pneumatic tyre as regards cycling was completely established.

In 1875 M. Léon Bollée, a Frenchman, constructed a kind of steam omnibus, and models were shown at the Universal Exhibition of 1878 at Paris. Trials of steam tramway locomotives were made in London and other towns during 1876. Messrs. Merryweather of London, Messrs. Hughes of Loughborough and other firms succeeded in making such locomotives which emitted neither steam nor smoke, and one of the novelties of 1876 was a bicycle propelled by steam power. In the same year atmospheric gas engines were largely introduced the motive power of which was derived from a mixture of air and coal gas. About ten years later M. Serpollet and M. de Dion had steam vehicles running in Paris.

Following upon the use of steam as a motive power the use of electricity for the same purpose has to be considered, and in this respect we can hardly do better than refer to two lectures on the Electrification of Railways delivered before the Royal Institution of Great Britain in January, 1908, by Professor Gisbert Kapp, Dr. Eng., M. Inst. C.E., Vice-President of the Institution of Electrical Engineers. An interesting illustrated reprint of these lectures has been published. Professor Kapp refers to a somewhat uncertain record of a Mr. R. Davidson having constructed an electric locomotive which weighed 5 tons and was run at a speed of 4 miles per hour over the Edinburgh and Glasgow Railway in 1842. He remarks that in those days the trolley was unknown, and we must conclude that this locomotive, like the well-known boat of Professor Jacobi, was propelled by current derived from primary batteries. But what is certain is that a little electric railway having more the appearance of a toy was running in an exhibition held at Berlin in the year 1879. This was constructed by Werner von Siemens, and Professor Kapp reproduces an interesting photograph of it, which shows a little electric locomotive which seems no bigger than a travelling trunk on four wheels with the driver perched on it, and carriages like three pairs of garden-seats on wheels placed back to back and holding 18 people. The motor was a 3 h.p. and the speed four miles per hour. It is also on record that a similar contrivance by the same inventor carried passengers at the International Electrical Exhibition at Paris in 1881. On the second page Professor Kapp shows a picture of the small electric tram-car which was running at Lichterfelde, near Berlin, in 1881, and held 26 people, including a driver and conductor. These cars were undoubtedly the forerunners of the electrical vehicles which run on the common roads to-day. In 1882 there was quite a wave of electrical invention and enterprise in the United Kingdom, and various short electrical tramways were laid down at Brighton, Portrush, Bessbrook, Newry, and other places, but as regards cars for the common roads the first long-distance run on a single charge was made by an electrical car in England in June, 1898.

The first electric carriages for ordinary roads were constructed in 1889 by Mr. Magnus Volk of Brighton, and the electric motor was worked by accumulators in the body of the car. But steam and electricity as motive powers have not advanced to a great extent and they have been outrivalled in many respects by the explosion motor, which Gottlieb Daimler (1834-1900) practically introduced for the purpose of propelling cars, and to him and to Carl Benz, Peugeot, de Dion, and other modern and well-known men is due the rapid progress of the motor traffic of to-day. Mr. Young in his book shows a picture of Daimler seated on a bicycle to which he first applied his explosion motor in 1886, but the first petrol car was introduced into England from France in 1895.

The following prophetic words by Dr. Erasmus Darwin in "The Botanic Garden," the first edition of which appeared in 1781, were quoted with hopefulness, but generally misquoted with wrong words and false quantities, at the time of the enthusiasm for steam-carriages in the "thirties":—

> "Soon shall thy arm, unconquered steam, afar
> Drag the slow barge, or drive the rapid car;
> Or on wide waving wings expanded bear
> The flying chariot through the field of air."

We do not know whether all at the present day will admit that the prophecy is realised, but many will recognise the aptness of the description from Nahum, placed at the head of this article.

So many medical men are now using a motor-car, and so many also have thought it well to perfect themselves in their mechanism, that we have thought the history of the introductory stages would prove interesting to our readers, while the part played by medical men in the evolutionary stages is very marked.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE following reports of committees for the year just passed were approved by the meeting of the General Council of the King Edward's Hospital Fund for London on Dec. 13th, 1909, the proceedings of which we recorded in our issue of Dec. 18th, 1909, p. 1833:—

REPORT OF THE DISTRIBUTION COMMITTEE.

1. The Council having this year placed the sum of £147,000 in the hands of the committee for distribution amongst the London Hospitals, as against £135,000 in 1908, the committee beg to report as follows:—

2. The number of hospitals applying for grants is 103, as against 105 last year.

3. In the new building of the Royal National Orthopædic Hospital, opened by His Majesty the King in July last, 130 out of the 200 beds for which the hospital is designed are already available for use. This represents a further stage in the amalgamation of the orthopædic hospitals. In addition to the grant for maintenance the committee have recommended a substantial sum towards the reduction of the debt on the new building.

4. The amalgamation of the Hampstead and North-West London Hospitals is now complete. The out-patient department, with a few beds for emergencies, will be maintained in the poor district of Kentish Town formerly served by the North-West London Hospital, while the in-patient department of the combined institutions is situated upon the higher ground of Hampstead. The committee, in addition to making a maintenance grant, have now set aside the sum of £3000 on account of the grants promised in connexion with the reconstruction of the out-patient department.

5. With regard to the Throat, Nose, and Ear Hospitals, no steps so far as the committee are aware have been taken during the year in the direction of amalgamation. The committee in their last report recommended that the sums set aside for this purpose in past years should not be held over indefinitely, and they consider that the time has now come to apply to these awards the rule that grants for special purposes should be reconsidered every two years if they remain unapplied. The committee, therefore, while setting aside the sum of £2,500 as the grant this year towards the amalgamation, recommend that the grants of £1000 made in 1906 and £2000 made in 1907 should now lapse.

6. The following grants made in 1907 for special purposes and retained in accordance with the rule also remain unapplied:—

East London Hospital for Children, £618 16*s.* 6*d.*, being the balance of a grant of £1000 to improvements.

Miller General Hospital for South-East London, £289, being the balance of a grant of £1250 to extension.

Royal Hospital for Diseases of the Chest, £1000 granted to open a fund for a country sanatorium.

The committee recommend that the unpaid balances of the grants to the East London Hospital for Children and the Miller General Hospital should be renewed. With reference to the Royal Hospital for Diseases of the Chest, they are informed that the governing body of the hospital have not been able to see their way to undertake a scheme for the provision of a country sanatorium. Under the circumstances they recommend that the grant should lapse, but they are glad to hear that the Convalescent Homes Committee of the Fund are making inquiries with a view to a scheme by which in certain existing sanatoria beds might be made available for patients from metropolitan hospitals.

7. In connexion with the resolution of the General Council requesting hospitals which are contemplating extension or reconstruction to submit their proposals to the Fund, the committee have again had before them several schemes of greater or less magnitude. To some of these the committee have raised no objection, in some they have suggested modifications, while two or three are still under consideration. In two cases, however, the schemes appeared to be open to such serious objections on general grounds that the committee felt compelled to recommend that the approval of the Fund should be withheld.

In one case, that of the National Hospital for Diseases of the Heart, it was proposed to rebuild and enlarge the hospital at a cost of £25,000. It is admitted that the present building is unsuitable for the purposes of a hospital, but considering the demands now made upon the charitable public for the maintenance and improvement of hospital accommodation in London, the committee could not recommend a scheme for the expenditure of a large sum of money in making special provision for cases which can be equally well treated elsewhere.

The other case raised the question of the proper method of supplying the need for a general hospital in Woolwich. In their last report the committee emphasised the policy adopted by the Fund of assisting in the provision of hospital accommodation in the outlying districts, and they consider that the special circumstances of Woolwich give that neighbourhood a strong claim upon the assistance of the Fund. The committee, however, saw grave objections to the particular scheme laid before them, which contemplated the gradual evolution of a hospital out of general wards connected with and subordinate to a small institution primarily designed for the training of midwives. The committee consider that the first step towards meeting the needs of Woolwich should be the formulation of a scheme for the provision of an independent general hospital of fair size, to which any other kindred objects should be subordinate, and they have announced their readiness, in the event of a representative movement in this direction, to afford substantial assistance.

8. In further connexion with the provision of hospital accommodation in the outlying districts of London the committee are of opinion that the needs of Wimbledon would be better served by one adequate hospital than by two independent institutions for which separate building schemes are proposed.

9. The sum of £5000 voted towards the removal of King's College Hospital to South London increases the total amount contributed by the Fund to this object to £32,000.

10. The reports of the visitors, which every year prove of increasing value, have as heretofore received most careful consideration by the committee, and many of their observations have been brought to the notice of the managers of the hospitals concerned, nor have the committee failed to call attention to instances in which the statistical report affords evidence that considerably greater economy might be exercised without impairment of efficiency.

For the committee,
W. S. CHURCH, Chairman.

The details of the awards to the various hospitals are appended to this report.

REPORT OF THE CONVALESCENT HOMES COMMITTEE.

1. The Council have this year placed the sum of £3000 in the hands of the committee for distribution amongst convalescent homes and consumption sanatoria. This makes, with the sum of £1000 set aside last year for consumption sanatoria but not allocated, a total distribution of £4000, as against £5000 provided for in 1908, of which only £4000 was actually distributed.

2. The number of applications eligible for consideration amounted to 37 from convalescent homes and four from consumption sanatoria, as against 33 and five respectively last year.

3. The committee have received new applications from several convalescent homes, to most of which grants are recommended in consideration of the number of London patients admitted during the past year. At the same time the committee have adhered to some extent to their original policy of giving special consideration to the convalescent homes closely connected with London hospitals.

4. The committee regret again to have to report the smallness of the number of applications from consumptive sanatoria, and the very limited opportunities which have hitherto presented themselves for assisting by means of grants in the provision of additional beds for the immediate accommodation of those patients in London hospitals who urgently need country treatment.

5. The committee, however, have under consideration proposals for securing for patients in London hospitals the right of admission to a certain number of beds at a sanatorium now in course of erection. Should this sanatorium upon inspection by the Fund's visitors be found to be eligible for a grant on this basis, the committee hope to be in a position to make a recommendation next year. They trust that this scheme, if successful, may lead to the conclusion of similar arrangements elsewhere, and that this possibility may be borne in mind by the promoters of sanatoria within reach of London. In cases, for instance, where a larger number of beds could be opened at a sanatorium without proportionate additional expenditure upon the administrative sections or increase in the fixed charges, such an arrangement might well result in greater economy in the management of the sanatorium, besides saving the extra cost of erecting and maintaining separate establishments for London patients.

6. The committee would again express their indebtedness to the

visitors who undertook the inspection of consumption sanatoria in the country, and whose reports have been of the greatest value.

For the committee,
WILLIAM LATHAM, Chairman.

The grants recommended to the various institutions are appended to this report.

THE JOHN HERBERT WELLS FUND.

THE following is the eighth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	*s.*	*d.*
Mr. G. M. Inglis	10	0	0
Mr. Alfred Lafone	10	0	0
Mr. C. E. Sebag Montefiore	5	10	0
Honourable G. W. Spencer Lyttelton, C.B.	5	0	0
Collected by Mrs. M. G. Stuffield	2	11	0
Dr. R. H. Robbins	2	2	0
Mr. P. Baker	2	2	0
Dr. Knuthsen	2	2	0
Right Honourable Lord Airedale	2	2	0
The London Horse and Carriage Repository ...	2	2	0
Mr. E. G. J. Moyna ...	2	0	0
Major Arthur E. Smithson, R.A.M.C.	1	1	0
Mrs. W. L. Ainstie ...	1	1	0
Mrs. Arnold Hills	1	1	0
Dr. George Dean	1	1	0
Mr. George Wood	1	1	0
Anonymous (Weybridge)	1	1	0
Dr. S. G. Scott...	1	1	0
H.H. The Ranee of Sarawak...	1	0	0
Mr. Gerald H. Hardy ...	1	0	0
Colonel Locock	1	0	0
Mr. Thomas E. A. Baker	1	0	0

ADAMS *v.* POMEROY.

WE have received from Dr. L. Garrett Anderson, 114A, Harley-street, W., honorary secretary of the fund raised to reimburse Dr. Martha Adams the legal expenses in this action, the following list of subscriptions. Dr. Adams incurred over and above the taxed costs in the action brought by her against *Vanity Fair* and others a certain small sum which it is felt that she should not be called upon to pay, and we trust that our readers will help her to discharge the debt.

	£	*s.*	*d.*
Dr. Reginald Bligh Wall...	1	0	0
Dr. and Mrs. Maitland Ramsay	1	1	0
Dr. Percy Rose	0	5	0
Dr. W. A. Grogono	0	5	0
Dr. A. E. Kennedy	0	5	0
Dr. C. J. Stocker	0	5	0
Dr. Alice Vowe Johnson...	1	1	0
Dr. Eleanor Lowry	0	5	0
Dr. A. W. Paterson	0	5	0
Major J. L. Marjoribanks, I.M.S.	0	5	0
Dr. G. Bennington Wood	1	1	0
Dr. Herbert R. Spencer...	1	1	0
Dr. Joseph O'Connor ...	0	10	6
Mr. H. Alexis Thomson ...	1	1	0
Dr. Samuel Agnew	1	1	0
Dr. L. Garrett Anderson	2	2	0
Dr. A. M. Edge	1	1	0
Dr. Frank Hinds	1	1	0

MEDICINE AND THE LAW.

Baby Farming Cases.

THE National Society for the Prevention of Cruelty to Children is to be congratulated upon the result of two prosecutions recently carried by it to successful conclusions. In one case Frederick and Kate Walker were convicted of the manslaughter of a child of unknown parentage, apparently about 7 months old, and described by them as "Cissy Bell." She was taken from the home of the prisoners at Tooting to Wandsworth Infirmary, where she was found to be suffering from bronchitis and a fractured thigh. The fracture had occurred some time before and had received no medical attention. The prisoners were proved to have lived recently at nine different addresses during five months, being in the habit of removing their belongings at night to avoid their seizure for rent or in order to elude observation. According to an account given by the male prisoner to an officer of the society, but afterwards declared by him to be untrue, they had recently received £60 for taking two children to New York, where both had died. There were other charges against the accused in connexion with the neglect and ill-treatment of children, but the sentence passed in the case of Cissy Bell at the Central Criminal Court was intended to include these. Each prisoner was sentenced to five years' penal servitude. In the other case referred to, which was heard at the police court at Acton, William Chambers was summoned for neglecting Gladys Carr and Queenie Friend, of the respective ages of 10 and 8 months, in a manner likely to cause them unnecessary suffering and injury. It was a curious feature in the case that when the children were not well medical men were called in, a different one being summoned for each child. The proof of neglect depended upon the evidence of medical witnesses, who showed that the children had suffered severely from malnutrition and dirty surroundings, although the defendant's own family had been well cared for. A sum had been paid down in the case of each "adoption." A fine of £10 was imposed, but the defendant said he would prefer to undergo the alternative offered him of six weeks' imprisonment.

Death due to Ferro-Silicon.

Mr. Justice Walton tried a case at Leeds recently in which the plaintiff was a widow who claimed damages for illness caused to herself and for the loss of her husband. The deceased, a man named Bamfield, owned a canal boat on which lived, besides himself, his wife, his grandson, and a mate. All became ill after, or during, a trip on which they conveyed in the canal boat from Goole to Sheffield a cargo which afterwards was found to consist of casks containing ferro-silicon. The casks came from abroad on board one of the Lancashire and Yorkshire Railway Company's steamers, and were transferred by the railway company to the Goole and Sheffield Transport Company, who in turn employed Bamfield as subcontractor. Bamfield and his grandson died a few days after being taken ill, and at the inquest which followed their deaths were ascribed to ptomaine poisoning. In the action which was brought against the Goole and Sheffield Transport Company it was alleged that the deaths and the plaintiff's illness were due to the gases given off by the ferro-silicon, and that the cargo had been described by the defendants as "scrap or general cargo." This was denied by them, and they further contended that the plaintiff's husband had the same means of knowing the contents of the casks as they had, that the ferro-silicon was not the cause of his death nor of the plaintiff's illness, and that it had been carried in vessels on other occasions without any harm to those on board them. The judge found that the casks of ferro-silicon were dangerous, that Bamfield had no notice of their dangerous nature, and that the plaintiff had proved her case. He awarded her as damages £150 for her own illness, and £175 in respect of the loss of her husband, her claim having been for £300 and £1000. A stay of execution was granted pending a possible appeal.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Dec. 16th, 1909, with Dr. F. H. Champneys in the chair. A letter was read from the Privy Council, approving the amendments to the rules submitted by the Board with a view to guarding against ophthalmia neonatorum, and suggesting the amendment of Rule E. 19 (3) by the omission of the words "or breech" in line 6. A letter was received from the town clerk of Salford, forwarding a resolution of the town council suggesting that the Municipal Corporations Association should be represented on the Central Midwives Board. A letter was read from the secretary of the Monmouthshire Education Committee, petitioning the Board to allow candidates from Monmouthshire to be examined orally in Welsh, if they so desire. The Board decided that a reply be sent stating that the Board considered that the facilities afforded at Bristol were sufficient. Applications were received from Catherine Weston and Judith Cooper for the removal of their names from the Roll of Midwives on the ground of ill-health. The Board decided that the applications be granted, and that the secretary be directed to remove their names from the Roll of Midwives and to cancel their certificates. On the motion of Mr. Parker Young the following proposed addition to the rules was passed: "The Board may at its discretion, before Oct. 1st, 1910, enrol any woman who, though qualified under Section 2 of the Act, failed to claim the Board's certificate before April 1st, 1905."

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The County of Norfolk.—Dr. J. T. C. Nash states that the annual reports of the district medical officers of health for the year 1908 show a noticeable improvement in their general character, and he tells us that out of 32 district reports 18 were printed, eight were typed, and six written, a condition which obviously leaves a great deal to be desired in this respect. It is unreasonable to expect a medical officer of health to take as much interest in the compilation of a report which will perhaps be taken as read as in the preparation of a report which is to be printed and circulated. The estimated population of the administrative county of Norfolk for 1908 was 315,655, and of this total 60,488 lived in 12 urban districts and 255,167 in 20 rural districts, a statement which brings out the enormous importance of rural sanitation and housing in an agricultural county such as Norfolk, and, on the other hand, it emphasises the fact that the total population of such an administrative county is, as a whole, considerably below that of our largest towns. The birth-rate of the county for 1908 was 22·88 per 1000 and the corrected death-rate 11·61 per 1000. In connexion with the question of infantile mortality one of the district medical officers of health, Dr. H. H. Back, draws attention to what is in rural districts a well-known fact, but which is not fully appreciated by town dwellers, and that is the difficulty which obtains in procuring a regular supply of cow's milk in rural districts; indeed, there is often a difficulty in obtaining cow's milk at all. Dr. Back points out that this failure to secure cow's milk is not altogether a disadvantage to the country baby, since breast-feeding is thereby encouraged. Dr. Nash reports that the Norfolk Nursing Federation is doing good work in circulating literature relative to the care of babies, but, as he adds, seeing that six weeks is allowed for the registration of births an infant may be dead and buried before its birth is registered—a circumstance which renders the adoption of the Notification of Births Act desirable. The infantile mortality for 1908 was 102·69 per 1000 births as compared with a rate of 121 for England and Wales as a whole, and 110 for England and Wales less the 218 larger towns. There was no case of small-pox in Norfolk during 1908, but Dr. Nash states that the population of the country is gradually becoming less protected as regards vaccination owing to the increase in the number of exemption certificates. In the matter of enteric fever a considerable number of cases were ascribed to the ingestion of shell-fish, and at Wells there was quite a little outbreak of the disease, but whether this outbreak was actually due to the Wells mussels is not quite clear from the report before us. There seems, however, no ground for reasonable doubt that some of the Wells mussels have been liable to pollution by sewage. The county of Norfolk is very poorly provided with isolation hospitals and Dr. Nash has in this particular almost a virgin field for the operation of the Isolation Hospitals Acts. During 1908, out of 1354 cases of scarlet fever, diphtheria, and enteric fever, there were only 19 cases removed to hospital, the only districts having taken advantage of isolation accommodation being Cromer, Walsoken, and Forehoe. Dr. Nash is of opinion that isolation hospitals must be of value, and he adds: "If a disease is infectious and unprotected persons are likely to catch the disease, it is a matter of common sense that efficient isolation of an infected person must reduce his power of infecting others to a minimum. The question is not one of providing hospital accommodation and treatment of any sort or kind, but is one of securing efficient isolation and skilful hospital administration." With reference to schools and infectious diseases it is pointed out that the new code of the Board of Education has introduced modified procedure with respect to school closure and the exclusion of scholars under the authority of the school medical officer, who is defined as "a medical officer named by the local education authority and recognised as such by the Board." The county council of Norfolk being both education authority and higher sanitary authority for the county have, therefore, nominated their county medical officer of health as school medical officer. In Norfolk the county council administers in the administrative county the Sale of Food and Drugs Acts, and for this purpose three inspectors are employed to take samples and submit them to the county analyst. During 1908 there were 138 samples of milk submitted for analysis and of these nearly 9 per cent. were adulterated. We are glad to see that the district councils are becoming more active in the administration of the Dairies, Cowsheds, and Milkshops Order as the result, in part at least, of the reports on the Royal Commission on Tuberculosis.

The City of York.—The population of this city at the middle of 1908 was estimated by the Registrar-General at 85,891, and Dr. E. M. Smith, the medical officer of health, after checking this estimate by the other well-known methods, concludes that the estimate is practically correct. As was the case in so many other towns during 1908, the birth-rate of York for that year was the lowest on record. Of the total births registered 4·5 per cent. were illegitimate, and of the 19 births which occurred in the workhouse no less than 13 were illegitimate, a fact which in itself justifies the recommendation of the Poor-law Commission for greater classification amongst the inmates of workhouses. The corrected death-rate for York during 1908 was 13·28, and of the total number of deaths only one was uncertified either by a medical man or coroner, a circumstance which is probably due in large part to the advocacy by the medical officer of health of reforms in our present system of birth and death registration. Everyone will agree with him that no bodies should be buried without full medical certification and that the certificate should be a confidential document between the practitioner and registrar. Under existing conditions deaths from alcohol, venereal diseases, and certain other conditions, are not unlikely to be attributed to intercurrent affections, and hence the statistics to be vitiated. Infantile mortality in York has evinced an encouraging decrease during the last four years, and for 1908 this rate was 104 per 1000 births—i.e., about one-ninth of the children born failed to keep their first birthday. If the deaths due to premature births be deducted, the infantile mortality rate becomes materially reduced—that is to say, the pre-natal influences amongst the labouring classes are responsible for a large number of deaths. Dr. Smith thinks that the infantile mortality of York should not exceed 70 per 1000 births. Bearing upon this question of pre-natal influences comes the question of illegitimacy, the infantile mortality amongst the illegitimate children during 1908 having been no less than 275 per 1000 illegitimate births, while in one district the rate reached 413. In connexion with the question of stillbirths arrangements have been made with the registrar of the cemetery for weekly returns concerning each stillbirth sent for interment. Of 121 such interments, 77 were certified for burial by medical practitioners, 39 by registered and 3 by unregistered midwives, and 2 by the coroner after inquest. In one case a registered midwife certified without having witnessed the actual birth, and after an exhumation it was proved that the child had lived a short time after birth, the midwife being censured by the Central Midwives Board for "gross carelessness." The Notification of Births Act, 1907, has proved a decided success during its first year of operation in York, 1723 births out of 1944 having been notified. Reminders and warnings were circulated at the end of the year to those who had failed to notify. The voluntary notification of pulmonary tuberculosis has been in operation since the year 1902, and good work has been done in connexion with the information so obtained. But the medical officer of health is in favour of the introduction of compulsory notification, and among the tuberculosis problems yet to be solved he ranks (*a*) housing; (*b*) the poverty questions inseparably associated with the disease; (*c*) the difficulty of ensuring non-tuberculous milk and meat; (*d*) the provision of sanatoriums for early cases; and (*e*) the provision of isolation hospitals for advanced cases, and he adds that the want of proper feeding and of proper houses are among the principal factors in disseminating tuberculosis. As regards the housing question, we may certainly hope that the Housing and Town Planning Act will soon enable energetic steps to be taken, and we entirely agree that herein is one of the most hopeful steps towards the further reduction of tuberculosis. The administration of the Midwives Act (1902) is proving very successful in York.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7715 births and 4726 deaths were registered during the week ending Dec. 18th, 1909. The annual rate of mortality in these towns, which had steadily increased in the seven preceding weeks from 12·0 to 16·6 per 1000, declined again to 15·0 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these towns averaged 14·1 per 1000, and in London the mean rate during the same period was equal to 13·8. The lowest annual rates of mortality recorded in the 76 towns during the week were 5·1 in King's Norton, 7·6 in Leyton, and 8·4 in York; the rates in the other towns ranged upwards, however, to 22·2 in Oldham, 22·6 in Burnley, 24·2 in Hanley, and 29·2 in Swansea. In London the recorded death-rate during the week fell to 14·3 per 1000. The 4726 deaths registered in the 76 towns showed a decline of 512 from the numbers returned in the previous weeks, and included 250 which were referred to the principal epidemic diseases, against 297 and 246 in the two preceding weeks; of these 250 deaths, 77 resulted from whooping-cough, 48 from measles, 40 from diarrhœa, 38 from diphtheria, 26 from scarlet fever, and 21 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases, which had been equal to 0·9 and 0·8 per 1000 in the two preceding weeks, was again so low as 0·8. No death from any of these epidemic diseases was registered during the week in Oldham, Brighton, Southampton, Walsall, Huddersfield, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·2 in West Bromwich, Birkenhead, and St. Helens, 2·3 in Rhondda, 3·0 in Hanley, and 3·7 in Swansea. The 77 deaths from whooping-cough in the 76 towns showed a further increase upon the numbers returned in recent weeks, and caused annual rates equal to 1·0 in Sunderland, 1·1 in St. Helens, 1·3 in Birkenhead, and 2·1 in Swansea. The 48 fatal cases of measles exceeded by 1 the number in the previous week; the highest annual rates from this disease being 1·1 in Northampton, 1·6 in Swansea, and 2·3 in Hanley. The 40 deaths attributed to diarrhœa showed a further decline, and were fewer than in any week since the end of May last; they showed, however, a proportional excess in Coventry and Smethwick. The 38 deaths from diphtheria also showed a considerable decline; they included 10 in London and its suburban districts, 3 in Birmingham, 3 in Manchester and Salford, and 2 each in Nottingham, Stockport, Halifax, Leeds, Hull, and Sunderland. Of the 26 fatal cases of scarlet fever, an increase of 4 upon the low number in the previous week, 6 occurred in London and its suburban districts, 3 in Birmingham, and 2 each in Liverpool, Blackburn, Bradford, and Newcastle-on-Tyne. The 21 deaths referred to "fever" also showed a slight increase on the low number in the previous week; 4 occurred in Liverpool, 3 in Manchester and Salford, and 2 both in St. Helens and in Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined in the nine preceding weeks from 2810 to 2475, had further fallen to 2403 on Dec. 18th; 254 new cases of this disease were admitted to these hospitals during the week, against 281 and 266 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 4 small-pox cases on Dec. 18th. Of the 1330 deaths registered in London (fewer by 210 than the number in the previous week), 342 were referred to pneumonia and other diseases of the respiratory system, showing a decline of 90 from the number in the previous week, and being 65 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 42, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during the week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Salford, and in 46 smaller towns; the 42 uncertified causes of death in the 76 towns included 5 in Birmingham and 3 each in Liverpool, Sheffield, and Preston.

In 76 of the largest English towns 6520 births and 4854 deaths were registered during the week ending Dec. 25th, 1909. The annual rate of mortality in these towns, which had been 16·6 and 15·0 per 1000 in the two preceding weeks, rose again to 15·4 in the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these towns averaged 14·2 per 1000, the mean rate in London during the same period being 13·9. The lowest annual rates of mortality recorded in the 76 towns last week were 7·6 in Hornsey, 7·7 in King's Norton, 8·5 in Willesden, 8·9 in Smethwick, and 9·4 in Devonport; the rates in the other towns ranged upwards, however, to 24·6 in Bury, 25·8 in Middlesbrough, 27·0 in Wigan, 29·2 in Swansea, and 29·5 in Hanley. In London the recorded death-rate last week was equal to 15·1 per 1000. The 4854 deaths registered in the 76 towns last week showed an increase of 128 over the number in the previous week, and included 273 which were referred to the principal epidemic diseases, against 297, 246, and 250 in the three preceding weeks; of these 273 deaths 78 resulted from whooping-cough, 53 from measles, 47 from diphtheria, 40 from scarlet fever, 38 from diarrhœa, and 17 from "fever" (principally enteric), but not any from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·9 per 1000. No death from any of these diseases was registered last week in Croydon, Brighton, Stockport, Northampton, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·8 in Ipswich, 3·4 in Birkenhead, 3·7 in Swansea, and 3·8 in Hanley. The fatal cases of whooping-cough in the 76 towns, which had increased from 61 to 77 in the four preceding weeks, further rose to 78 last week, and caused death-rates equal to 1·0 in West Ham, 1·1 in Swansea, and 1·4 in Ipswich and in Halifax. The deaths attributed to measles, which had numbered 53, 47, and 48 in the three preceding weeks, increased to 53 in the week under notice; the highest death-rates from this disease were 1·1 in Swansea, 1·4 in Ipswich, 2·6 in Birkenhead, and 3·0 in Hanley. The fatal cases of diphtheria, which had declined from 58 to 38 in the four preceding weeks, rose again to 47 in the week under notice and included 12 in London and its suburban districts and 3 in Hull. The deaths from scarlet fever, which had been 41, 22, and 26 in the three preceding weeks, further rose to 40 last week, and caused death-rates ranging upwards to 1·1 in St. Helens and 1·2 in Wigan. The 38 deaths from diarrhœa were 2 fewer than the number in the previous week, and showed the greatest proportional excess in Walsall, Rotherham, and Swansea. The 17 deaths referred to "fever" were 4 fewer than the number in the preceding week, and included 2 each in London, Birmingham, Leeds, Salford, and St. Helens. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined during the 10 preceding weeks from 2810 to 2403, had further fallen to 2361 on Saturday last; 224 new cases of this disease were admitted last week, against 281, 266, and 254 in the three preceding weeks. The Metropolitan Asylums Hospitals contained 4 cases of small-pox on Saturday last. Of the 1399 deaths registered in London last week 332 were referred to pneumonia and other diseases of the respiratory system, against 432, 417, and 342 in the three preceding weeks; these 332 deaths were 2 above the corrected average number in the corresponding week of the five years 1904–08. The causes of 38, or 0·8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Leicester, Nottingham, and in 46 other smaller towns; the 38 uncertified causes of death in the 76 towns last week included 4 in Liverpool, 4 in Bootle, 3 in Birmingham, 3 in Warrington, and 2 each in London, Manchester, Rochdale, Coventry, and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 868 births and 700 deaths were registered during the week ending Dec. 18th, 1909. The annual rate of mortality in these towns, which had been equal to 24·2, 22·3, and 23·8 per 1000 in the three preceding weeks, declined to 19·6 during the week. During the first 11 weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·4 per 1000, and exceeded by 3·3 the mean rate during the same period in the 76 largest English towns. The annual death-rates in the week under notice in these Scotch towns ranged from 12·5 and 12·8 in Paisley and Leith, to 18·8 in Dundee and 23·0 in Glasgow. The 700 deaths from all causes in the eight towns during the week showed a decline of 151 from the high number in the preceding week, and included 76 which were referred to the principal epidemic diseases, against 88 and 127 in the two previous weeks. These 76 deaths were equal to an annual rate of 2·1 per 1000; the mean annual rate from the same diseases in the 76 English towns did not exceed 0·8 per 1000. The 76 deaths from these diseases in the Scotch towns during the week included 46 from measles, 9 from whooping-cough, 7 from diarrhœa, 6 from scarlet fever, 5 from diphtheria, and 3 from "fever," but not one from small-pox. The fatal cases of measles, which had been 49, 43, and 64 in the three preceding weeks, declined again to 46 in the week under notice, of which 42 occurred in Glasgow and 4 in Edinburgh. The 9 deaths from whooping-cough showed a considerable decline from recent weekly numbers, and included 4 in Edinburgh and 3 in Glasgow. The 7 deaths attributed to diarrhœa were fewer than in any recent week; 4 were returned in Glasgow and 2 in Dundee. The 6 fatal cases of scarlet fever included 3 in Aberdeen and 2 in Glasgow; and 4 of the 5 deaths from diphtheria occurred in Glasgow. Of the 3 deaths referred to "fever," 2 were returned in Glasgow and 1 in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 298, 265, and 275 in the three preceding weeks, declined to 215 in the week under notice, but exceeded by 114 the number returned in the corresponding week of last year. The causes of 20, or 2·8 per cent., of the deaths in the eight towns were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death during the week did not exceed 0·9 per cent.

In eight of the principal Scotch towns 807 births and 697 deaths were registered during the week ending Dec. 25th, 1909. The annual rate of mortality in these towns, which had been 23·8 and 19·6 per 1000 in the two preceding weeks, further declined to 19·5 in the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·6 per 1000, and exceeded by 3·4 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 14·4 in Greenock and 15·5 in Aberdeen, to 22·6 in Perth and 23·4 in Dundee. The 697 deaths from all causes in the eight towns last week showed a decline of three from the number in the previous week, and included 86 which were referred to the principal epidemic diseases, against 88, 121, and 76 in the three preceding weeks. These 86 deaths were equal to an annual rate of 2·4 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. The 86 deaths from these diseases in the Scotch towns last week included 42 from measles, 13 from diarrhœa, 11 from diphtheria, 10 from whooping-cough, 6 from scarlet fever, and 4 from "fever," but not one from small-pox. The fatal cases of measles, which had been 64 and 46 in the two preceding weeks, further declined to 42 in the week under notice, and included 34 in Glasgow and 6 in Edinburgh. The deaths from diarrhœa, which in the four preceding weeks had declined from 16 to 7, rose again last week to 13, of which 5 occurred in Glasgow, 4 in Dundee, and 2 in Edinburgh. The fatal cases of diphtheria, which had been 14 and 5 in the two preceding weeks, increased to 11 last week, and included 7 in Glasgow and 2 in Edinburgh. The deaths from whooping-cough, which had been 17, 16, and 9 in the three preceding weeks, rose last week to 10, of which 8 were registered in Glasgow, The 6 fatal cases of scarlet fever corresponded with the number in the previous week, and included 4 in Glasgow. The 4 deaths from "fever," including 3 cases of enteric and 1 of cerebro-spinal meningitis, were all registered in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 275 and 215 in the two preceding weeks, further declined last week to 173, but were 58 in excess of the number registered in the corresponding week of last year. The causes of 20, or 2·9 per cent., of the deaths in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 556 births and 475 deaths were registered during the week ending Dec. 18th, 1909. The mean annual rate of mortality in these towns, which had been equal to 20·1 and 23·2 per 1000 in the two preceding weeks, declined again to 21·7 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these Irish towns averaged 18·6 per 1000, whereas the mean rate during the same period did not exceed 14·1 in the 76 largest English towns, and 17·4 in the eight principal Scotch towns. The annual death-rate during the week was equal to 19·4 in Dublin, 23·9 in Belfast, 23·3 in Cork, 18·1 in Londonderry, 15·0 in Limerick, and 23·1 in Waterford; the mean annual rate in the 16 smallest of the Irish town districts was equal to 22·6 per 1000. The 475 deaths from all causes in the 22 town districts during the week showed a decline of 33 from the number returned in the previous week, and included 26 which were referred to the principal epidemic diseases, against numbers increasing from 18 to 31 in the four preceding weeks; these 26 deaths were equal to an annual rate of 1·2 per 1000; in the 76 English towns the mean rate from the same diseases did not exceed 0·8, but in the eight principal Scotch towns it was equal to 2·1 per 1000. The 26 deaths from these epidemic diseases in the Irish towns in the week under notice included 16 from whooping-cough, 4 from diarrhœa, 2 from scarlet fever, 2 from diphtheria, and 1 each from measles and "fever," but not one from small-pox. The 16 fatal cases of whooping-cough showed a decline of 3 from the number in the previous week, and included 3 in Belfast, 4 in Tralee, and 2 in Dublin. Of the 2 deaths from scarlet fever, 1 each occurred in Dublin and Cork; and both the fatal cases of diphtheria occurred in Dublin. The death referred to enteric fever was returned in Drogheda. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 101, 157, and 162 in the three preceding weeks, declined to 83 in the week under notice. The causes of 21, or 4·4 per cent., of the deaths registered during the week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death did not exceed 0·9 per cent., while in the eight principal Scotch towns it was equal to 2·8 per cent.

During the week ending Saturday, Dec. 25th, 1909, 135 births and 150 deaths were registered in Dublin. The annual rate of mortality, which had been 22·1, 22·0, and 19·4 per 1000 in the three preceding weeks, rose again last week to 19·6 per 1000; the mean rate during the first 12 weeks of the current quarter was 19·5 per 1000, whereas in London the mean rate for the same period did not exceed 13·9 per 1000. The 150 deaths from all causes last week included 2 from whooping-cough, 2 from "fever," and 1 from scarlet fever, but not any from small-pox, measles, diphtheria, or diarrhœa; the 5 deaths from these principal epidemic diseases were equal to a rate of 0·7 per 1000, the rates in the two preceding weeks having been 1·2 and 0·9 respectively. One inquest case and 2 deaths from violence were registered, and 68, or 45 per cent., of the deaths occurred in public institutions. The causes of 7, or nearly 5 per cent., of the deaths in Dublin last week were not certified.

In Belfast 170 births and 144 deaths were registered during the week under notice. The annual rate of mortality, which had been 29·4 and 23·9 per 1000 in the two preceding weeks, further declined last week to 19·4 per 1000, and averaged 18·5 during the first 12 weeks of the current quarter. The deaths included 11 which were referred to the principal epidemic diseases last week, against 18 and 10 in the two preceding weeks; of these 11 deaths 10 were attributed to whooping-cough and 1 to diarrhœa. Ten inquest cases and 6 deaths from violence were registered during the week, and 28 deaths occurred in public institutions. The causes of 2 of the deaths in Belfast last week were not certified. No death from cerebro-spinal fever was registered in either Dublin or Belfast.

THE WATER-SUPPLY OF HOLSWORTHY (DEVON).—At the last meeting of the Holsworthy urban council it was stated that the new water scheme was practically completed. The total cost of the undertaking was £7140.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: P. B. Handyside to the *Minotaur*, on recommissioning; and T. Austen to the *Vernon*. Staff-Surgeons: E. Cox to the *Minotaur*, on recommissioning; C. E. C. Stanford to the *Jupiter;* J. G. Watt to the *Mars;* R. St. G. S. Bond to the *Victory*, additional, for disposal; R. B. Scribner to the *Terror*, additional, and to the *Alert*, on commissioning; J. Verdon to the *Kinsha*, on recommissioning; and W. P. Dyer to the *Edgar*, for medical charge on voyage home. Surgeons: S. S. H. Shannon to the *Leda;* A. R. Fisher to the *Minotaur*, on recommissioning; A. Davidson to the *Cæsar;* G. C. Cross to the *Hannibal;* N. H. Mummery to the *Pembroke*, additional, for disposal; H. C. Devas to the *Cornwall*, on recommissioning; W. H. Edgar to the *Snipe*, G. G. Vickery to the *Britomart*, B. R. Bickford to the *Thistle*, A. J. MacDiarmid to the *Waterwitch*, C. F. Bainbridge to the *Widgeon*, R. P. M. Roberts to the *Teal*, G. A. Jackson to the *Woodcock*, all additional, and on recommissioning; H. W. Nicholls to the *Moorhen;* M. P. Fitzgerald to the *Robin;* A. G. Malcolm to the *Implacable;* J. H. Burdett to the *Superb;* A. A. Sanders to the *Indomitable;* M. J. Laffan to the *Edgar*, for duty on voyage out, to join at Gibraltar, and to the *Bramble*, on recommissioning; G. F. Syms to the *Bellerophon;* C. Ross to the *Woodlark*, on recommissioning; and W. P. Hingston to the *Pembroke*, additional, for disposal, and to the *Patrol*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. Birt is appointed for duty at the Royal Army Medical College. Lieutenant-Colonel R. Porter, from Administrative Medical Officer at Belfast, is appointed Principal Medical Officer in the Western Command, vice Colonel G. T. Goggin. Lieutenant-Colonel E. H. Lynden Bell is appointed to command the Station Hospital, Meerut, and Major H. I. Pocock to command the Station Hospital, Shahjehanpore. Captain J. G. Gill, doing duty in Peshawar Station Hospital, is appointed to the command of No. 1 British Field Hospital in addition to his other duties. Lieutenant-Colonel M. T. Yarr, from Dublin, is appointed Medical Inspector of Recruits in the Scottish Command. Colonel T. M. Croker, Principal Medical Officer, Scottish Command, is appointed Principal Medical Officer, Egypt. Colonel T. P. Woodhouse, in charge of the Royal Victoria Hospital, Netley, is appointed Principal Medical Officer, Scottish Command. Lieutenant-Colonel G. D. Hunter, D.S.O., is appointed Commandant, Royal Army Medical Corps School of Instruction at Aldershot. Colonel M. W. Kerin, serving in India as Principal Medical Officer, Bareilly and Garhwal Brigades, is appointed to officiate as Principal Medical Officer, 8th (Lucknow) Division. Lieutenant-Colonel G. H. Barefoot, who is serving in India, is appointed to officiate as Principal Medical Officer, Bareilly and Garhwal Brigades, and to command the Station Hospital at Bareilly. Captain Seccombe is appointed as specialist in the prevention of disease to the Brigade Laboratory, Jullundur. Major C. R. Elliot is appointed Sanitary Officer, Lahore Division.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions:—To be Major (dated July 28th, 1909): Captain Thomas Henry Delany. To be Captain (dated Sept. 1st, 1909): Lieutenant Joseph Frain James (provisionally).

The King also has approved of the retirement of the following officers:—Lieutenant Colonel Thomas David Collis Barry (dated Nov. 18th, 1909). Lieutenant-Colonel Edwin Harold Brown (dated Nov. 10th, 1909).

Major Sutherland reverts to the Central Provinces. The services of Captain Shaw and Captain O'Neill are replaced at the disposal of the Commander-in-Chief. Captain Wilson reverts to military duty. Captain V. A. Whiteman has been appointed to the substantive medical charge of the 3rd Brahmins, vice Captain MacKelvie, transferred permanently to the Civil Department. Lieutenant Armytage is appointed specialist in midwifery and diseases of women and children, Burma Division. Captain White is appointed specialist in operative surgery, 8th Lucknow Division.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: The undermentioned to be Lieutenants (on probation):—Gordon Reginald Ward (dated Nov. 26th, 1909), and Ronald MacKinnon (dated Dec. 7th, 1909). George Henry Usmar (late Lieutenant, Royal Army Medical Corps) to be Lieutenant, with seniority as from August 24th, 1908 (dated Oct. 29th, 1909). The undermentioned to be Lieutenants (on probation): John Inkster (dated Nov. 24th, 1909), Ian Dunbar Dickson, John McGregor Scott, Thomas Errol Guthrie, William Thomson Graham, and Charles Stewart Sandeman (dated Dec. 17th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

5th London Field Ambulance: Captain Ernest B. Dowsett to be Major (dated Dec. 22nd, 1909).

3rd Lowland Field Ambulance: Lieutenant Henry A. Leebody to be Captain (dated Nov. 19th, 1909).

2nd West Riding Field Ambulance: Francis George Dobson to be Lieutenant (dated Nov. 13th, 1909).

3rd Wessex Field Ambulance: Leslie Rawes to be Lieutenant (dated Nov. 10th, 1909).

Attached to Units other than Medical Units.—Captain Henry W. Williams resigns his commission (dated Sept. 17th, 1909). Lieutenant Hugh K. Lacey resigns his commission (dated Nov. 7th, 1909).

For attachment to Units other than Medical Units.—Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel John Adam, from the 1st (Ross Highland) Volunteer Battalion, Seaforth Highlanders (Ross-shire Buffs, The Duke of Albany's), to be Lieutenant-Colonel, with the honorary rank of Surgeon-Colonel, with precedence as in the Volunteer Force (dated April 1st, 1908).

1ST SOUTHERN GENERAL HOSPITAL, R.A.M.C. (T.).

Lieutenant-Colonel Jordan Lloyd and the officers entertained the men of this unit, as well as a large number of R.A.M.C.(T.) officers, to supper on Dec. 18th. After the toast of the King had been honoured and Lieutenant-General Raitt, the officer commanding the South Midland Division had presented some prizes to the men, the toast of "The 1st Southern General Hospital" was proposed by Lieutenant-General Raitt and responded to by Lieutenant-Colonel Jordan Lloyd. The remaining toast, that of "The Visitors," was proposed by Lieutenant-Colonel Gilbert Barling and was responded to by Colonel Whitcombe, who commands the medical units of the South Midland Division, and to whose enthusiasm and energy the complete equipment and efficiency of the hospital is so greatly due.

DEATHS IN THE SERVICES.

Surgeon-Major Thomas Egerton Hale, V.C., C.B., A.M.D. (retired), quite recently. He entered the service as assistant surgeon in 1854, became surgeon in 1867, and retired on half-pay with the rank of surgeon-major in 1876. He served with the 7th Fusiliers in the Crimean campaign from Jan. 25th, 1855, including duty in the trenches during the bombardments of Sebastopol and the assaults of the Redan (Victoria Cross, medal with clasp, and Turkish medal). He was awarded the Victoria Cross "(1) for remaining with an officer who was dangerously wounded, in the fifth parallel, on the 8th September, 1855, when all the men in the immediate neighbourhood retreated excepting Lieutenant William Hope and Dr. Hale, and for endeavouring to rally the men in conjunction with Lieutenant Hope; (2) for having on the 8th September, 1855, after the regiments had retired into the trenches, cleared the most advanced sap of the wounded, and carried into the sap under a heavy fire several wounded men from the open ground, being assisted by Sergeant Charles Fisher." He was also in medical charge of a field force under Colonel Blunt during the Indian Mutiny. In 1907 he was made a Commander of the Bath, and at the same time received the honorary rank of Surgeon-Lieutenant-Colonel.

The King of Italy has conferred the Order of Commander of the Crown of Italy upon Major G. S. Crawford, R.A.M.C., and Chevalier of the same Order upon Captain H. S. Anderson, Captain H. C. Winkworth, and Captain P. A. Jones, of the Royal Army Medical Corps, and Surgeon-Captain R. Randon, Royal Malta Artillery, in recognition of their services with the Field Ambulances which proceeded from Malta to the earthquake disasters in Sicily and Calabria last January. The decorations were recently presented to these officers by His Excellency the Governor and Commander-in-Chief of Malta.

It has been notified that the tour of service for Royal Army Medical Corps officers on the West Coast of Africa (Sierra Leone) will in future be made up as follows: One year on the Coast followed by six months' leave, then a second year on the Coast followed by another six months' leave. Double service for pension will be counted for the actual periods on the Coast—i.e., two years on the Coast will count as four years' service towards retirement.

Correspondence.

"Audi alteram partem."

THE POOR-LAW MEDICAL SERVICE IN FRANCE.

To the Editor of THE LANCET.

SIR,—Your article on the above subject published in THE LANCET of Dec. 18th last is interesting, and a worthy contribution to the present controversy in this country as to what shape Poor-law medical reform should take. But there is, in my opinion, some danger in taking the institutions of a particular nation, however excellent they may be, and imagining they may be adopted by another with equal advantage. This would be the case even when the above-mentioned institutions have been in work for a considerable time, so that their efficiency has been well tested; but the danger is enhanced when they are quite novel, and have not been exposed to the test of experience. If our early attempts at Poor-law legislation had been taken as examples for imitation by a foreign nation, I cannot help thinking the result would have been eminently unsatisfactory; and the experience of centuries puts us in a much better position for understanding Poor-law problems than our neighbours across the Channel. The apparent unanimity of our French brethren with regard to this new and untried system does not appear to me very cogent. After they have given it a reasonable trial they may be as dissatisfied as they now appear content with it. I propose, with your permission, to deal with one or two points which would seem to have met with the approval of my French brethren, but which I do not think would be regarded with as much favour by many of the practitioners of this country.

1. *Free choice of doctor.*—Where the patient pays for the doctor his right of selection cannot be questioned, and the interests of the public and the medical profession depend on this right being jealously guarded and maintained under all circumstances. But when the patient does not pay does the same rule hold? With all deference to Dr. Proby, I think not. If an individual joins a club or provident society, if he goes to a charity or asks the assistance of an institution that has special officers, has he the right of choosing the doctor whom he wishes to consult? It is true, in the case of hospitals, he can select a certain day when a particular doctor usually attends, but that is not the same as possessing the right to select a particular doctor. Why, then, should it be different when the State appoints the doctor? If the principle of a free choice of doctor were adopted it would revolutionise all the public services. Every postman would claim to choose his doctor and for sentimental reasons the efficient and economical working of public departments would be seriously jeopardised. With regard to the claims of the necessitous poor to choice of doctor, I think it is unnecessary to add anything to the criticism of the Minority Commissioners on this subject. Their condemnation of the principle is sound and unanswerable.

2. *Abolition of gratuitous attendance on the poor, which falls to the lot of every practitioner.*—That there might be a considerable reduction of this to the advantage of the public and the profession all of us are ready to admit; but the remedy might be worse than the disease. Personally, I am convinced that any system, which permitted all "poor" persons, without difficulty, to get their medical attendance at the expense of the State, even if the doctor, as in France, got a pittance for each State patient, would largely injure all private practice among the poor. The loss of the doctor through poor patients, who had hitherto paid him, being tempted to avail themselves of State aid would far outweigh the loss through gratuitous work he had before been in the habit of doing. Most of us have seen examples of this in the case of doctor's clubs, which had been started to meet the needs of those unable to pay his usual fees; as also in the case of many provident dispensaries, the doctor, or doctors, soon found that these institutions were utilised by many of their paying patients, so that the loss from the latter ceasing to be private patients was not made up by the enrolment of their former gratuitous patients on the dispensary. The power of the doctor, unable to recover his fees, to put the patient on the public list—that is, to make him a pauper—however it might answer in France, would hardly be acceptable in this country.

3. *It is sound economy to see that the sick poor have medical attendance early.*—No one disputes the general truth of this, but the difficulty lies in its application. To seek to do it in some of the ways that are authoritatively suggested are, in my opinion, anything but sound economically. It has been seriously proposed that inspectors should make domiciliary visits throughout poor quarters, to seek out the sick, whether they desire this attention or not. Many of the well-to-do suffer from lack of early medical attendance, equally bad for the State, but it is not proposed to make domiciliary visits in their case.

4. *The poor will naturally select the practitioner who treats them with the greatest kindness.*—Can there be any doubt of this, although it would be more accurate to say, "who panders most to their particular tastes," often a different thing from treating them kindly? Again, I should have thought it very difficult to "establish beforehand what sort of prescriptions may be made." It seems to me that in any State service the doctor must have a particularly free hand. It is a mistake also to suppose that if the emoluments are small there will necessarily be little or no competition for the posts. Where a profession is generally poorly paid, and is possibly overstocked, there must often be keen competition to get a bare living, especially where the relations between the profession and the public are so profoundly altered, as must necessarily be the case in any such system as now being developed in France, or that proposed by the Poor-law Commissioners in this country. The editor of the *Health Review* (Mrs. Hodgkinson), writing in the *British Medical Journal* last week, says: ' The ideal is, of course, State payment of the profession, and *this is bound to come*." The italics are my own, but I cannot help fearing that this must be the inevitable end of State medical relief organised on the above principles. Their promoters, I believe, desire this, but I think there must be many like myself who regard the socialisation of medicine with the gravest concern, and, far from deeming it will exalt and elevate our profession, believe it more likely to lower and debase it by the ruin of its independence and the removal from it of that incentive which has hitherto tended to draw into its ranks a large proportion of the best intelligence of the community.

I am, Sir, yours faithfully,

MAJOR GREENWOOD,

Honorary Secretary, Poor-law Medical Officers' Association of England and Wales.

Copthall-avenue, E.C., Dec. 18th, 1909.

A DOUBTFUL CASE OF SCARLET FEVER OR INFLUENZA.

To the Editor of THE LANCET.

SIR,—The "doubtful" case of scarlet fever or influenza reported in THE LANCET of Sept. 18th, p. 864, by Dr. Andrew Dunlop, is of much interest though not unique. I quite agree with Dr. Dunlop's view and with your remarks thereon, that the case was one of influenza with a scarlatiniform rash. In Dr. T. Thompson's "Annals of Influenza" (Syd. Soc.) Dr. Heberden is quoted as having said that he saw, in 1775, two persons (with influenza) who had eruptions on their skins resembling scarlet fever. A letter from Dr. R. Hamilton is also republished in the same volume, dated 1787, wherein it is mentioned that at Bath cases of influenza were seen with a rash and red sore throat, and that Dr. Falconer considered that they showed a similarity between influenza and scarlet fever, as described by Dr. Withering of Birmingham.

Besides these cases of ancient date others have been observed since. In the great epidemics of influenza which visited London in 1890 and 1891 I myself saw a few cases which corresponded exactly with that described by Dr. Dunlop. In the spring of 1891 I remember well two children in one family affected at the same time while influenza was prevalent. Each had a rash exactly like that of a mild case of scarlet fever. The tonsils were swollen but the throat was not particularly red, and the tongue did not become suddenly and entirely clean in the manner characteristic of scarlet fever, nor was there any noticeable desquamation. The cases were very puzzling at first, but I soon had no hesitation in regarding them as influenza. Some other peculiar types were also occasionally met with in the same epidemic. 1. The dengue form, marked by agonising pains in the limbs. If I recollect aright, these cases evoked a letter in the *Times* from some one who had been familiar with dengue in the East, suggesting the identity of the two diseases. 2. The comatose form. A few cases that I remember very distinctly, mostly in elderly women, fell into a state of deep stupor, almost coma, which looked very serious; however, they all woke up and recovered in a week's time. 3. The intestinal form, which sometimes developed into severe enteritis.

It seemed to me that influenza had, and has, a weekly periodicity. Ordinary cases usually last one week (though the period would be shorter in very young infants), and relapses and recurrences set in just after the end of the first or even of the second week. I also noticed that the cases of pneumonia complicating influenza, which set in with a tolerably free hæmoptysis, did much better and were more sure to recover than those wherein that symptom was absent.

I am, Sir, yours faithfully,
F. Lucas Benham, M.D., M.R.C.P. Lond.

Exeter, South Australia, Nov. 7th, 1909.

THE CONGENITAL FACTOR IN HERNIA.

To the Editor of The Lancet.

Sir,—I have been much interested in reading Mr. Edward Deanesly's letter in The Lancet of Dec. 18th, p. 1852, on the Congenital Factor in Hernia, since, like him, I am a firm believer in the truth of Hamilton Russell's theory. Of many cases which have led me to this belief one in particular is worth mentioning, and although I have never published the notes I have frequently referred to it in the course of clinical teaching. In 1901 I had occasion to explore the abdomen of a woman, 47 years of age, in the Hospital for Women. In the course of the operation it was apparent that she was the subject of well-marked Glénard's disease. Before closing the abdomen I took the opportunity to examine the inguinal regions and sites of the femoral canals from within, and, much to my astonishment, found that *all four rings were patent and would admit the little finger for about an inch or more* without any difficulty. Here was a patient well advanced in life with four patent rings transmitting four peritoneal diverticula, and yet so far as she was aware none of these had ever contained any viscus, and, as I know from having kept her in close observation, none of them have done so since.

I quite agree with Mr. Deanesly that if Russell's theory is correct, which I feel convinced it is, our methods of operation will have to be modified, but not, I think, to the extent he suggests. In many cases of inguinal hernia where a so-called acquired sac exists in a young man or boy, one sees a marked weakness of the inguinal canal, consisting either of deficiency of muscular fibres at this point or of abnormally high origin of the internal oblique muscle. This I have always looked upon as part and parcel of the congenital defect, since the muscular development in other parts may be perfect. Now, whether or no Russell's theory is correct, there is no question about the capacity of unsupported peritoneum to stretch; one sees it repeatedly in the case of direct herniæ, where the trouble consists merely of a prominent bulging of the peritoneum without the actual presence of anything that can be called a sac. This tendency to stretch becomes much more marked where the application of a ligature has resulted in the conversion of normal into cicatricial peritoneum. It is for this reason that I consider it would be a grave mistake to allow the saccular theory, which I personally welcome, to blind our eyes to another aspect of the etiology of hernia. The *occurrence* of hernia *may* be due to the presence of a congenital sac; it probably is in most cases; but the *cure* undoubtedly depends in many such cases on something more than the simple removal of that sac. As regards statistical information I trust that Mr. Deanesly will not think me unduly pessimistic if I place but little faith in the factor in which he seems to place so much—viz., the voluntary return of patients to report their recurrences as a criterion of the success of the operation he advocates. My experience (not a slight one of this particular operation) and I think that of most other surgeons is that patients who suffer from recurrence very frequently drift into other hands and say nothing about having done so. I am sure many operators would be surprised at the number of their cases which have recurred and found their way into my own and my colleagues' wards, just as I myself would probably be, did I know the truth about my own cases. The parable of the ten lepers is as true to-day as in the days of old, whether one applies it to the cure or the recurrence of hernia.

Personally, I agree readily with Mr. Deanesly as regards operations on quite young subjects, but in adults, even when their herniæ are of moderate dimensions, a well performed Bassini is as necessary as I believe it to be harmless. As regards femoral hernia, I think that he is entirely justified in his opinion that anything further than removal of the sac is unnecessary. The femoral canal, unlike the inguinal canal, has no natural muscular protection: presumably therefore it does not require one; removal of the sac *or sacs* should therefore suffice to cure the hernia.

Mr. Deanesly has, I think, done well in championing Hamilton Russell's theory; at the same time I think surgeons should be warned, while accepting that theory, of allowing themselves to be carried away by it to irrational conclusions. Although most cases of hernia are certainly due to the presence of a preformed sac, it is just as certain that many others are not; and although many cases may be cured by simple removal of the sac, there are again many which cannot be so cured. In the interests of surgical progress it would be as much a matter of regret if in our willingness to accept the saccular theory as an explanation of *all* cases of hernia we abandoned Bassini's operation as unnecessary, as if we persistently applied that excellent operation to cases in which it is quite unsuitable. Briefly, different degrees of hernia require different methods of treatment. In my opinion no hernia is incurable; but all herniæ cannot be cured in the same way.

I am, Sir, yours faithfully,
Lawrie McGavin, F.R.C.S. Eng.

Mansfield-street, W., Dec. 17th, 1909.

DANGEROUS HAIR DYES.

To the Editor of The Lancet.

Sir,—It is an ethical question how far the medical profession is responsible for injuries which a timely warning might have prevented. Within the last few months a good deal has been written in the various medical and chemical journals with reference to a chemical much in use among manufacturers of hair dyes, the poisonous properties of which are well recognised. The Lancet of Dec. 11th, p. 1795, states that in several instances death has resulted from the use of paraphenylene-diamine in hair dyes, and during the present year the *Journal of the American Association* reports several cases of poisoning due to the same cause. It mentions that warnings against preparations containing this chemical have been issued by the Government of Saxony, and quotes from the *Pharmazeutische Zentralhalle* (p. 190). The preparations there mentioned are now on sale in London, and are represented as "essentially hygienic and guaranteed to be free from lead, silver, copper, or mercury"; in other instances they are represented to be vegetable hair colourings. On p. 1307 of the *Journal of the American Association* it is stated that 21 cases of poisoning arising from the use of this chemical in the hair dyes have been reported.

In the *Journal of Dermatology* (December, 1905) an article appeared dealing with "teak dermatitis." It appears that for several years the term "teak" was applied to various woods. In The Lancet of April 25th, 1896, p. 1193, in answer to a question on the subject, the writer was informed that such a condition was unknown as having been caused by teak. This was subsequently confirmed in a later issue. After the article appeared in the *Journal of Dermatology* the use of poisonous wood was transferred to Lancashire, where it was employed for shuttle-making. The shuttle-makers inhaled the wood dust and several deaths occurred, after which steps were taken to prevent these woods being used.

My object in writing on the subject of the use of poisonous chemicals in the preparation of hair dyes is because a Departmental Committee is now sitting at the Home Office which will take notice of the use of petroleum for the purpose of dry shampoo; and it would be well if its sphere of inquiry were extended so as to include all poisonous or dangerous chemicals sold for application to the scalp or hair. If after the correspondence and repeated warnings of those under whose notice these cases come the matter is disregarded and the sale of paraphenylene-diamine is allowed under false trade descriptions until fatal cases call public attention to its dangers, the responsibility is removed from the medical profession and any evil consequences which may ensue rest with the authorities that permit its sale, and equally with the manufacturers and vendors—one for making dyes which they have been warned are dangerous, the other for selling them without guarantee or inquiry as to their composition, and misleading the purchasers by false descriptions.

I am, Sir, yours faithfully,

Stratford-place, W., Dec. 21st, 1909. T. P. BEDDOES.

THE RESEARCH DEFENCE SOCIETY AND THE GENERAL ELECTION.

To the Editor of THE LANCET.

SIR,—In view of the General Election, we desire to call the attention of all Parliamentary candidates to the work of the Research Defence Society. It was founded in January, 1908, to make generally known the facts as to experiments on animals in this country and the regulations under which they are conducted; the immense importance of such experiments to the welfare of mankind; and the great saving of human life and health which is already due to them. We hope that all candidates for Parliament who may desire to acquaint themselves with these facts will communicate with the Honorary Secretary, Research Defence Society, 70, Harley-street, W. He will be happy to supply them with literature and to answer all inquiries.

We would also remind them that the Royal Commission, though it has published all the evidence, has not yet published its final report and recommendations to Government; and we hope that those candidates who may be unable at present to declare themselves in sympathy with our society will at least preserve an open mind till the report has been published.—We remain, Sir, yours faithfully,

CROMER, President,
SYDNEY HOLLAND, Chairman of Committee.
F. M. SANDWITH, Honorary Treasurer.
STEPHEN PAGET, Honorary Secretary.

Dec. 28th, 1909.

THE BRITISH MEDICAL BENEVOLENT FUND AND GUILD.

To the Editor of THE LANCET.

SIR,—The tragic fate of Dr. Wells of St. Mary's Hospital, whose death last October at the age of 30 years was caused by contracting glanders in the exercise of his duties, aroused the sympathy of the public and has drawn attention to the dangers to which all medical men are exposed in the pursuit of their profession. Accident or disease may cut short the career of a medical man, or other adverse circumstances may prevent him from making any provision for old age, so that he himself and those dependent upon him may be left in actual want and even encumbered with debt. Speaking at a meeting in support of the Fund held at the Royal College of Physicians in February last, the Bishop of Oxford said: "I do not think there is any profession in which a man is compelled, without any choice of his own, without any chance of escape, to run so great a risk of inevitable impoverishment for himself and for his family. ...... He really risks his all upon his health."

To meet such contingencies the British Medical Benevolent Fund was instituted in the year 1836: (1) to make grants of money to distressed members of the medical profession, their widows or orphans; and (2) to provide annuities for such after they have reached the age of 60 years. During these 73 years the Fund has expended £70,000 in grants and rather more than this sum in annuities. At the present time the Fund is supporting 126 annuitants, who receive from £20 to £26 a year each; and in addition makes grants to others not yet eligible for annuities, spending in this way an aggregate of nearly £5000 a year, the working expenses being under 6 per cent. Yet the demands upon the Fund far exceed its resources, and much-needed help has frequently to be denied to applicants approved by the committee. A Woman's Guild has recently been established in connexion with the Fund to supplement the money grants of the Fund by gifts of clothing and coals and other additional comforts, and by personal service to add a warmer touch of human sympathy.

At the meeting above referred to the Lord Mayor of London, after drawing attention to the economic value of the services of the profession to the State and to the Community, whether in general practice or in hospitals or in the departments of public health and preventive medicine, asked: "What has the State and what has the public done in return? I think, very little," he added, "and it appears to me that the public requires calling to its duties in this respect." The Fund gives money which has hitherto been mainly supplied by the profession itself; the Guild will give money's worth. For Fund and Guild alike increased support is needed, and in behalf of both we plead and fain would trust that the public will not fail to recognise its obligation to the medical profession by a liberal response to the appeal which we now make.

Subscriptions and donations for the Fund may be sent to the Treasurer of the Fund, 15, Wimpole-street; and for the Guild to the Secretary of the Guild, 100, Harley-street, by both of whom further information will gladly be supplied.

We are, Sir, yours faithfully,

For the Guild:	*For the Fund:*
ADELINE M. BEDFORD,	R. DOUGLAS POWELL,
KATHERINE WESTMINSTER,	T. HENRY BUTLIN,
E. BROADBENT,	WILLIAM S. CHURCH,
MAY THORNE.	THOMAS BARLOW,
	JOHN TWEEDY,
	SAMUEL WEST.

Dec. 24th, 1909.

X RAY ULCERS CURED BY HILTON'S METHOD.

To the Editor of THE LANCET.

SIR,—Dr. A. F. Savill's "Notes of a Case of X Ray Ulcers cured by Hilton's Method," appearing in THE LANCET of Dec. 18th, p. 1811, is of special interest from its uniqueness in regard to its neuropathology. I venture to draw her attention to a contribution made by me on this subject just over a year ago,[1] wherein I endeavoured to elucidate the series of histo-pathological changes resulting in the necrobiotic manifestations in the tissue of Mr. Hall-Edwards's amputated hand by microscopic examinations of resected portions of the remaining nerves. There was marked evidence of extensive denervation and degeneration of the neuro-axones by chromatolysis, as well as the presence of fibrotic tissue, which acted as an obstacle to the regenerative efforts of outgrowth from the more normal proximal ends of the remnant nerves. It is conceivable that section of these nerves at or above "the line of demarcation," as performed by Dr. Alfred Eddowes, led to the natural outgrowth of the dendrons in the required direction, and that the thiosinamin injections as well as the gauze packing facilitated regeneration by removing the obstacle, thus affording a path for their "cones of growth."

These phenomena are beautifully described in detail in his presidential address by Dr. F. W. Mott, "On the Present Position of the Neurone Doctrine."[2] In Dr. Savill's case the limitation of the sclerodermia to the left half of the body, and the presumable correspondence of the skin lesions to the distribution peripherally of certain spinal nerves, is noteworthy. This case therefore presented the sequelæ of peripheral denervation *primarily from intrinsic causes, and secondarily from extrinsic molecular bombardment* over the same areas. It would also seem that the great tolerance of this patient to such frequent repetitions of the X rays ("almost daily for a period of two years"), done apparently without filtration, was in some measure due to the pre-existing intrinsic denervation in those peripheral areas. There would therefore be some essential difference in these X ray ulcers and those more commonly met with on otherwise normal skins where persistent hyperkeratosis predominates.

---

[1] Transactions of the Royal Society of Medicine, Nov. 13th, 1909.

[2] Ibid., Nov. 20th, 1908.

The recognised absence of dendrons and arborisations in granulation tissue, more so in redundant granulation tissue, and the persistence of exalted epicritic sensibility, particularly in those of X ray necrosis, opens up a promising field for investigation by neuropathologists. My experience with thiosinamin injections into the deltoid for "the brawny arm" in post-operative mammary cancer, which I look upon as a trophœdema, enables me to endorse the experience of Dr. Savill with this drug as a sclerolytic agent. I am, Sir, yours faithfully,

H. D. McCULLOCH.

New Cavendish-street, W., Dec. 20th, 1909.

AGAINST QUACKERY.

To the Editor of THE LANCET.

SIR,—It seems that the medical profession are at last rousing themselves to fight the quack remedy monger. A book has been published dealing with these medicines, a Royal Commission has been promised, and it really seems that something is going to be done, so long as the profession itself does not sink into a lethargic state again.

I should like to humbly offer, as one greatly interested in the question, a couple of suggestions. Firstly, as we are on the eve of a General Election a deputation of, say, four of the leading medical men in the various districts should wait on the candidates and request the promise of their support in the event of a Bill prohibiting the sale of quack medicines being brought forward. Secondly, as a Royal Commission has been promised, overwhelming evidence must be produced by the profession, because they must remember they will be fighting a big newspaper interest as well as the quack gentry; and I would suggest that in order to procure this evidence every practitioner who can, in the event of death or illness, trace the use of quack remedies by the patient, the use of which had aggravated the illness or accelerated death (Secret Remedies gives the ingredients of some of the nostrums, so reference to that would facilitate matters in these cases), should keep a note and forward it to THE LANCET, when evidence could be produced before the Commission that not only were quacks doing harm to the medical profession but were a source of great danger to the public.

I am, Sir, yours faithfully,

Dulwich, S.E., Dec. 29th, 1909. B. C. KEATES.

PROPHYLAXIS OF OPHTHALMIA NEONATORUM: A REQUEST FOR STATISTICS.

To the Editor of THE LANCET.

SIR,—I am endeavouring to collect statistics which may throw some light on the vexed question of antisepsis *v.* asepsis in the prevention of ophthalmia in the newly born. The antiseptic method assumes the possibility of infection in every case and may be subdivided into germicidal, where an endeavour is made to kill the germ by strong germicides, such as silver nitrate and corrosive sublimate, and into mechanical, where trust is placed in the removal of the germ by mechanical flushing with feeble antiseptics, such as boracic lotion.

The aseptic method, on the other hand, aims at the thorough cleansing of the eyelids before they are opened, and the prevention of inoculation afterwards, nothing being put into the conjunctival sac unless there is definite reason to fear infection. There are many records of statistics of the antiseptic methods, but, as far as I am aware, the only statistics of the aseptic method are those quoted by Mr. Sydney Stephenson in his Middlemore prize essay of 1907. Moreover, the majority of statistics on the subject have been obtained from the lying-in hospitals, and there must be a great store of instructive information in the experiences of general practitioners (and of midwives) which has never been utilised.

May I ask any of your readers who are interested for (1) references to recent statistics; (2) personal experiences in the use of these different methods? I will be very grateful for any information sent to me at the subjoined address, and for facility of tabulation I beg to suggest that the following table should be used:—

Method employed.	Number of births.	Number of cases of inflammation within 4 days of birth.*		Number of cases of injured eyes.
		Severe.	Slight.	

* Details of the bacteriology and probable method of infection will be particularly valuable.

I am obtaining some statistics of this kind from friends in Liverpool, but I venture to ask the hospitality of your columns for this request in order that the scope of the inquiry may be enlarged.

I am, Sir, yours faithfully,

A. NIMMO WALKER.

45, Rodney-street, Liverpool, Dec. 22nd, 1909.

THE STANDARDISATION OF DISINFECTANTS.

To the Editor of THE LANCET.

SIR,—Referring to the report of your Commissioners on the Standardisation of Disinfectants and to their comments on various correspondence thereon, I should like to remind your readers of the fact that the appointment of this Commission arose out of the acrimonious criticism of certain trade rivals who took exception to the suggestion put forward by Dr. Rideal and the present writer in their attempt to standardise a certain indefinite condition imposed by many of the leading public health authorities in connexion with the Rideal-Walker guarantee called for in their tender forms.

In the first place, one wonders why THE LANCET should have felt called upon to appoint a Commission at all, seeing that all they could accomplish would be to traverse the work and the report of a previous Commission appointed in 1903 with a similar object. This Commission was composed of such independent experts as Dr. F. W. Andrewes (St. Bartholomew's Hospital), Professor Sheridan Delépine (Manchester), Mr. Walter Hills (Pharmaceutical Society), Professor E. Klein (St. Bartholomew's Hospital), the late Dr. Allan Macfadyen (Lister Institute), Dr. James Ritchie (Oxford), Professor C. Hunter Stewart (Edinburgh), Professor G. Sims Woodhead (Cambridge), Colonel R. H. Firth, R.A.M.C., Colonel J. Lane Notter, R.A.M.C., and Dr. Samuel Rideal. Their report, which was approved and adopted in 1906 by the Council of the Royal Sanitary Institute, under whose ægis the work was conducted, recommended the Rideal-Walker test "for general purposes on account of its simplicity of working."

It is interesting to note that the bacteriological part of THE LANCET inquiry was entrusted chiefly to Dr. Sims Woodhead, who reports that out of a series of 11 consecutive Rideal-Walker tests "it was possible to obtain definite coefficients in three instances only," and that, moreover "amongst the remaining eight experiments it was possible to obtain two very doubtful coefficients which might be read according to the bias of the observer," and further, that "the other six provided little information of any kind." It would also be interesting to know why Dr. Woodhead had such difficulty in 1909 in working a test he found so simple in 1906.

Dr. Rideal's criticism in your issue of the 18th so completely discredits the findings of the Commission that all fair-minded readers of your journal need no words from me in further defence of the Rideal-Walker test, which has been so universally adopted. I would, however, point out that the conclusions arrived at by your Commissioners both as to the value of the Rideal-Walker test and as to the results attained thereby differ materially from those published by well-known scientific investigators of at least equal authority.

As regards the compounds of my firm, I may state that it is quite true that at one time the coefficient 4 was guaranteed and published for Jeyes' Fluids, but for some time past it has been guaranteed at 5, and I should like to add that it is retained at only 5 in order to admit of adding certain other properties which fit Jeyes' Fluid for use as not only a reliable bactericide, but also an insecticide, a deodorant, and a non-toxic general cleanser, making it, we claim, the best and safest all-round disinfectant for household use. The coefficients of our various products are guaranteed to range from 5 to 22, according to the purpose for which they are required. For example, where a strong bactericide only is wanted—as in public health work, &c.—we offer our Special Fluid Cyllin; and where the only water available for purposes of dilution is very hard, salt, or brackish we recommend crude Cyllin. In this connexion the following independent results obtained from samples of Jeyes' Fluids bought in the open market have recently been published :—

	No. 1.	No. 2.	Date of test.
Professor Klein ...	5·0 ...	4·4 ...	July 29th.
Professor Hewlett ...	4·0 ...	4·2 ...	August 12th.
Dr. Rideal ...	5·4 ...	5·0 ...	July 26th.

Professor Hewlett's figures as well as that for No. 2 obtained by Professor Klein, are slightly lower than the present standard for both fluids—viz., 5·0—and are doubtless due to the fact that in these cases they were working with specimens drawn from older stocks, at the time of manufacture of which the guaranteed coefficient was only 4·0.

My company is prepared to stand by any guarantee issued over its signature, and I, as their scientific adviser, am prepared to demonstrate the validity of those guarantees to anyone sufficiently interested, including the members of your Commission.

THE LANCET claims to have an unbiassed mind and to be desirous of avoiding acrimony, and yet even the casual reader must see that in the Commissioners' report, as also in their replies to criticisms on that report, the products of my company are specially singled out for direct attack.

If there is any one firm in the industry in question to whom credit is due for an honest attempt to produce a method of scientifically standardising disinfectants for the benefit of those interested in the health of the community, and by which the individual consumer may obtain a known disinfecting value, that firm is the one with whom I have the honour to be connected.

I am, Sir, yours faithfully,
For Jeyes' Sanitary Compounds, Co., Limited,
J. T. AINSLIE WALKER, Managing Director.
64, Cannon-street, E.C., Dec. 24th, 1909.

⁂ Our Commission had not the origin which Mr. Ainslie Walker states. He need not wonder at all at its reason : it followed on the fact that the previous Commission to which he alludes had not settled matters. The report of that Commission was not adopted according to its chairman, Mr. Wynter Blyth, who wrote to that effect to us (see THE LANCET, Dec. 26th, 1908, p. 1942). With regard to whether our Commission is correct or Dr. Rideal we are satisfied with our findings. The accusation of personal bias is unwarranted.—ED. L.

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,—Mr. Heather Bigg's arguments in favour of the modern corset are rather far-fetched. There can be no possible support to the extra (the generative) female organs. The fact that pressure—it need be by no means excessive—is exerted upon the abdomen, and particularly, as is the case with corsets, at the waist line, must cause a corresponding amount of pressure upwards towards the diaphragm, &c., and specially downwards upon the organs in the pelvic cavity.

Two reasons why corsets cause the abdominal organs to gravitate towards the lower abdomen and pelvic cavity are (1) constriction at the waist ; (2) by withdrawing the necessity for the abdominal muscles to exert their normal supportive force, and thereby weakening them from lack of use, they consequently "give" in the part least protected artificially and of least resistance—viz., the lower abdominal region.

It is not correct to say that Nature ordained that woman should breathe pectorally. She does so not because Nature ordains it but because her corset makes it impossible for her to do otherwise. If Nature ordained that she should breathe pectorally then Nature is not consistent, since the civilised woman must have been made from a pattern quite different to that upon which her uncivilised sister was made. The latter breathes both pectorally and abdominally—i.e., naturally—as do both civilised and uncivilised men. It is also remarkable how little need there appears to be among native women for abdominal support. They scorn corsets, and very seldom is there a case of uterine prolapse or undue protrusion of the lower abdominal wall even after having borne many children.

With regard to men wearing corsets, I think Mr. Heather Bigg must mean abdominal belts, very different articles indeed. I have travelled in a good many parts of the world, both tropical and temperate, and have never seen a man wearing a corset, as a corset and not an abdominal belt, for support. Of course, we have all seen men who wear corsets, but they are worn for the sake of the figure only. I suppose every medical man has at some time ordered an abdominal belt for some patient or other, but I do not think many, if any, of us have ordered men to wear corsets. I do not, however, wish to underrate the importance of the corset to the modern woman. From long use it has become a necessity, and after once getting accustomed to it she cannot well do without it, especially when we take her mode of dress into consideration. It is, however, a strange thing (and quite contrary to Mr. Heather Bigg's argument) that the stouter the woman the less does she desire to wear corsets. A thin woman will never go without them ; a stout woman prefers to discard them, and especially is this the case in hot weather, notwithstanding Mr. Heather Bigg's assertion to the contrary.

There is one point which I should like to mention with regard to the corset of the present day. I have lately had quite a number of cases of pain and tenderness in the breast, accompanied, or preceded by, more or less inflammation of the nipple, which the usual remedies failed to cure. I found in every case that the cause of the trouble was an irritation of the nipple by the upper edge of the corset, which just reached to or a little below the nipple, which was thus constantly exposed to friction or squeezing. To make matters worse there was in every case either a whalebone or steel support just in the nipple line. I ordered that the corsets should be altered so as to give ample room to receive and support the breast and to reach well above the nipple. The trouble rapidly disappeared without further treatment. Unless this detail in the manufacture of the corset is corrected I fear it will give rise to considerable trouble to many women in the near future.—I am, Sir, yours faithfully,

Leigham Court-road, S.W., Dec. 9th, 1909. JAMES KIRKLAND.

AN OVERSIGHT.

To the Editor of THE LANCET.

SIR,—In the Section of Dental Surgery comprised in your admirable Annus Medicus published in your last issue there is an error which occurs three times, which I am sure you would wish to have rectified. Three papers, by Dr. Theodore Shennan, Mr. A. C. Lockett, and Mr. D. M. Shaw respectively, are mentioned as having appeared in Dental Proceedings of July, June, and May, 1909. There is no such publication—to my knowledge—as Dental Proceedings. These papers appeared in the July, June, and May issues of the *Dental Record*. Trusting you will be good enough to make this correction,

I am, Sir, yours faithfully,
Dec. 26th, 1909. WM. RUSHTON, Editor, *Dental Record*.

⁂ We regret the slip.—ED. L.

A WARNING.

To the Editor of THE LANCET.

SIR,—A young man claiming to be my relative has recently called on several medical practitioners in the London suburbs. He inquires for lodgings in the neighbourhood and then borrows money from the landlady to whom he has been introduced by the doctor. I write in the hope that this warning may be the means of securing his arrest.

I am, Sir, yours faithfully,

Queen Anne-street, W., Dec. 23rd, 1909. HUGH M. RIGBY.

THE POSITION OF DERMATOLOGY IN MEDICAL EDUCATION.

To the Editor of THE LANCET.

SIR,—In the series of articles recently published in your columns on medical education there is allusion over and over again to the admitted repletion of the curriculum. I hesitate therefore to point out that the curriculum requires strengthening in one direction, but I believe that to be the case. Dermatology is neglected.

I am, Sir, yours faithfully,

Dec. 28th, 1909. M.D., F.R.C.S.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Greater Birmingham.

Major C. E. Norton, C.E., the inspector appointed by the Local Government Board, is inquiring into the application of the Birmingham city council for an enlargement of the municipal area. The proposal of the city council is that the districts of Aston Manor, Handsworth, Erdington, Yardley, and the greater part of King's Norton should be included within the city. Important evidence was given by Dr. J. Robertson, medical officer of health of Birmingham. He said that there was in quite remarkable degree an overflow of population from the city beyond its borders. He knew of no provincial town where this had gone on so pronouncedly. As medical officer of health for the city he was pleased to see the population "spreading" out of the crowded parts of the city. He had advocated "spreading" consistently for a great number of years. From the erection of business premises, works, railways, &c., land was being absorbed in the city which was formerly occupied by dwelling-houses. There were still large areas too thickly populated for his liking. The extension of the city had been going on for a considerable time. He was able to trace the start of the migration into Aston over half a century ago. Rather later than that period it commenced on the south. On the west the extension was much later owing to the absence of travelling facilities, and the same applied to the east. The growth was extending chiefly along the lines where traffic was being greatly facilitated by railways or tramways. In King's Norton, Erdington, and Yardley there had been abnormal increases of the population during recent years and these they could not hope to keep up. These increases were partly due to what was called the normal increase of population, the excess of births over deaths, but far more to the migration from Birmingham into them. Dr. Robertson considered it desirable from the public health point of view that the whole area should be under one administration. At present there were six medical officers of health dealing with the district, and necessarily there was a lack of uniformity, and this defect made itself apparent in the methods for providing against small-pox, diphtheria, typhoid fever, and other diseases. In Birmingham, again, special precautions were taken against tuberculosis, but the campaign was not so vigorous in the outside areas. Uniformity was also desirable in regard to meat inspection, for while the butchers in the city were rigidly dealt with, only one of the outside districts affected by the scheme had a competent meat inspector. The administration of the Sale of Food and Drugs Act would also benefit by being placed under one control.

Hospital Sunday Fund.

At a meeting under the presidency of the Lord Mayor a financial statement was presented, when the sum distributed was as follows:—General Hospital, £1356 13*s.* 10*d.*; Queen's Hospital, £1294 4*s.* 9*d.*; General Dispensary, £181 8*s.* 2*d.*; Children's Hospital, £175 0*s.* 9*d.*; Eye Hospital, £227 8*s.* 8*d.*; Women's Hospital, £138 5*s.* 2*d.*; Deaf and Dumb Institution, £129 19*s.* 8*d.*; Blind Institution, £143 10*s.* 8*d.*; Orthopædic and Spinal Hospital, £145 3*s.* 8*d.*; Birmingham Sanatorium, £129 8*s.* 8*d.*; Homœopathic Hospital, £145 10*s.* 8*d.*; Lying-in Charity, £139 14*s.* 4*d.*; Skin and Urinary Hospital, £106 4*s.* 10*d.*; Ear and Throat Hospital, £59 1*s.* 10*d.*; Dental Hospital, £14 2*s.* 10*d.*; District Nursing Society, £90 12*s.* 3*d.*; Moseley Convalescent Home, £80 0*s.* 4*d.*; Jaffray Hospital, £26 5*s.* It was stated that the City Aid Society had at the request of the committee of the Hospital Sunday Fund undertaken to receive any tickets which might be sent them, and to see they were distributed amongst those who had need of them and were proper subjects for hospital treatment. The recommendations had been accepted by the General Hospital, the Dental Hospital, and the Orthopædic Hospital. The suggestion was scarcely applicable to the Moseley Convalescent Home or to the Birmingham and Midland Counties Sanatorium. The committee was still in negotiation with the General Dispensary, whilst the Eye, Ear, and Throat and Homœopathic Hospitals desired to watch the operation of those suggestions, where adopted, before coming to a final decision.

Dec. 28th, 1909.

WALES.

(FROM OUR OWN CORRESPONDENT.)

A New Cottage Hospital in the Rhymney Valley.

AN observant visitor to the colliery districts of Monmouthshire and Glamorgan would be struck with the scant provision which has been made for the medical and surgical treatment of the inhabitants in institutions. This is all the more striking when the nature of the industry is considered, involving, as it does, a more than usual liability to accidents. There are, broadly speaking, three large hospitals available for the workmen in the coalfields of the two counties—those at Merthyr Tydvil, Cardiff, and Newport—and in a few districts there are smaller cottage hospitals with 15 or 20 beds in each. These, as a rule, have been erected with funds supplied jointly by the colliery owners and the workpeople and are supported from the same source. Some three years ago a scheme on somewhat novel lines was suggested for the erection and maintenance of a small hospital at Aberbargoed, a district situated about the middle of the Rhymney Valley. It was proposed to build a hospital and a hotel upon sites which had been given for the purpose, and the profits derived from the hotel were to assist in maintaining the hospital. The scheme was opposed by the police and by the county magistrates and was eventually abandoned. The need for the hospital was felt to be so great that last year an offer was made by the Powell Duffryn Colliery Company to erect suitable buildings provided the workmen would subscribe for the future maintenance. This offer was accepted, and on Dec. 10th last Lord Tredegar opened the institution which the company has built at a cost of some £6000. There is accommodation in it for 14 patients in four wards, each of which is on the ground floor. In addition, there are a receiving room, an operating room, and an X ray room. Bedrooms are provided for six nurses. The entire building is heated by hot water and lighted with electric light. The workmen's fund has already reached nearly £600, and with the simple method of levying contributions from the colliers which is practised in the district there should be no difficulty in carrying on the institution upon the most modern lines.

County Medical Officer for Pembrokeshire.

Although the Local Government Act, 1888, empowered county councils to appoint a medical officer of health, only one of the 12 county councils in Wales—that of Glamorgan—took advantage of that power to appoint a whole-time officer. The Housing, Town Planning, &c., Act, which received the Royal Assent on Dec. 3rd last, makes such an appointment obligatory on the part of county councils, and the Pembrokeshire council on Dec. 18th last elected as its first medical officer Dr. Thomas Evans, who for more than a year has been one of the medical inspectors of schools in the county of Glamorgan. The salary attached to the appointment is £400 per annum, with n additional £50 for travelling expenses.

Pulmonary Tuberculosis in Swansea.

Although in common with other parts of the country the death-rate from consumption in Swansea is very considerably lower than it was 50 years ago, it is still higher than the rest of England and Wales. In 1908 there were 179 deaths in the borough from the disease, a number equal to 1·66 per 1000 of the population. Disinfection is offered after every death and where cases are known to exist, and it appears to be taken advantage of in an increasing number of instances. The board of guardians of the union has recently approached the Swansea corporation and the Swansea rural district council with a view to some steps being taken by these sanitary authorities to lessen the incidence of the disease. As one result it is suggested that a small sanatorium should be established on the hillside overlooking the bay and near to the convalescent home which was built a few years ago in connexion with the General Hospital.

Measles in Monmouthshire.

The epidemic of measles which has been prevalent in certain parts of the Bedwellty urban district in the Rhymney Valley is now showing signs of abatement. It began in the early part of November, and in the Aberbargoed district alone has caused 14 deaths. Several of the public elementary schools have been closed since the beginning of November, but in the opinion of the medical officer of health, Mr. H. T. Evans, this closing has had little if any effect in diminishing the spread of the disease. He points out that the opportunities of infecting others are as great outside a school as inside in a district like Aberbargoed with its long densely-populated streets, overcrowding of houses on areas and of people in houses. Attention has been drawn to the district upon more than one occasion by reports of the medical inspectors of the Local Government Board, but it appears to be difficult to arouse the sanitary authority to any feeling of responsibility for a continuance of the insanitary state of its district.

Damages against a Chemist.

In an action heard in the Newport county court a druggist of that town has been ordered to pay damages to the extent of £10 to a man whose injured finger he treated for some time. The injury became septic, and the man, being unable to work, ultimately lost his employment.

Barry Rate-aided Hospital.

The town of Barry is equipped with nearly every municipal undertaking it is possible to have. It has public slaughter-houses, small-pox and fever hospitals, and possesses one of the few refuse destructors to be found in South Wales. For many years past an adapted dwelling-house has been used as an accident hospital and has been supported out of the rates of the town, the necessary surgical attendance being freely given by some of the medical practitioners resident in the district. The original building has now been replaced by one specially built for an accident hospital, and it has been arranged that all the practitioners in the town shall be on the surgical staff, serving for periods of three months. Although at present Barry is the only town in which there is a rate-aided hospital, it is probable that they will be established elsewhere in the future, with some principle of payment for members of the staff.

Cardiff City Mental Hospital.

At a meeting of the visiting committee of this institution on Dec. 23rd a report by the medical superintendent, Dr. E. Goodall, recommending that a physiological chemist be appointed, was considered. Dr. Goodall has been very persistent in his advocacy of the appointment and has urged upon the committee the importance of undertaking physiological research work. The report dealt with the scantiness of our knowledge of the bio-chemical processes in insanity and the pressing need for research in this direction. The recommendation was adopted, and it was resolved that the appointment should be advertised at a salary of £200 per annum, with board and lodging.

Dec. 28th, 1909.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Parliamentary Representation of Edinburgh and St. Andrews Universities.

AT a meeting of graduates held last week in Edinburgh, Emeritus Professor Sir Alexander R. Simpson, M.D., D.Sc., LL.D., was unanimously adopted as candidate. Graduates interested in Sir A. R. Simpson's candidature and willing to join his committee should communicate with his election agent, Mr. T. S. Whyte Smith, W.S., 45, Queen-street, Edinburgh.

The Royal Faculty of Physicians and Surgeons of Glasgow.

The King has graciously signified his pleasure that the Faculty of Physicians and Surgeons of Glasgow shall henceforth be known as the Royal Faculty of Physicians and Surgeons of Glasgow. The Faculty has granted its Licentiates the privilege of wearing a gown at public functions. A printed description of the costume can be obtained from Mr. Alexander Duncan, Registrar, Faculty Hall, Vincent-street, Glasgow.

Glasgow and West of Scotland Coöperation of Trained Nurses.

In the report by the executive committee of this association, which was submitted at the annual general meeting recently, it was stated that the confidence of the medical profession and the public has steadily grown, so that the nurses have always been well employed. There were 178 nurses on the roll on Oct. 1st, 1908; 16 new nurses were elected during the year, 12 had resigned, and 1 had died, leaving 181 on the roll on Sept. 30th, 1909. Since that date 5 had resigned and 8 had been elected, making the present number 184. The number of cases attended was 1904, and the amount earned by the nurses was £11,836. Since the establishment of the Coöperation in 1894 the number of cases nursed is 20,063, and the amount earned by the nurses is £119,875. The accounts of the Coöperation for the year ending Sept. 30th, 1909, show an income of £1465 and an expenditure of £1289, leaving a surplus of £176. The assets (including those of the sick fund) amount to £7353, and after providing for outstanding accounts there remains a surplus of £7060.

Presentation to Dr. James Whiteford of Greenock.

Dr. James Whiteford of Greenock, who has just completed 50 years as a medical practitioner, was recently entertained by a numerous company of his patients and friends in the Watt Museum Hall, Greenock. Sir Hugh Shaw-Stewart presided, and in the course of the evening presented Dr. Whiteford with an address containing 300 signatures and a cheque for £930. The address dealt in eulogistic terms with Dr. Whiteford's career, and went on to congratulate him that at the end of a long period of faithful and devoted service he still retained a large measure of his accustomed vigour, and that his personal interest in the welfare of his patients and in the advancement of medical science, which had characterised his whole life, remained unabated. It may be recalled that a short time ago Dr. Whiteford was presented by the local medical men with a cheque for £100 and a solid silver salver.

Elgin School Board and Medical Inspection.

Elgin school board decided recently not to put in force the system of the medical inspection of school children. The board has now received a letter from the Education Department to the effect that unless the board reconsidered its attitude on the matter the department would invoke the compulsory powers conferred on it. The board, however, has replied that it adheres to its previous finding, and that if a scheme of medical inspection should be enforced the onus must lie with the department.

Cromdale Inspector of Poor and the Medical Officer.

The Local Government Board has now communicated to Cromdale parish council and to Dr. A. Hutchison the result of its inquiry into the charge brought by the latter against the inspector of poor, which alleged that the inspector had refused shelter to a pauper although she was blind and destitute. Dr. Hutchison asked the parish council for an inquiry "both on account of the treatment meted out to this pauper, and owing to my position as medical officer being untenable by the conduct of the inspector towards me." The Local Government Board states that it has severely censured the inspector of poor for his treatment of a blind and helpless person, notwithstanding the repeated remonstrances of the medical officer. The Board commended Dr. Hutchison's personal action in the case, he having performed a necessary public duty in bringing the inspector's conduct to the parish council's notice.

Deeside District Committee and the Notification of Phthisis.

At a meeting of the Deeside district committee held on Dec. 23rd, 1909, it was unanimously agreed that the Notification of Diseases (Infectious) Act, 1889, should be extended to include pulmonary phthisis on the list of notifiable diseases under the said Act.

Gift of £10,000 to Dundee Royal Infirmary.

Mr. J. K. Caird, manufacturer, Dundee, has offered the sum of £10,000 to the directors of Dundee Royal Infirmary to enable them, if they so desire, to take over the Sidlaw Sanatorium for the treatment of citizens suffering from tuberculous ailments. Mr. Caird is a liberal giver to Dundee charities. The following are his chief contributions in this direction: Cancer Hospital, £24,000; Maternity Hospital, £6000; sanatorium, £10,000; donation (1885), £1540; donation (1900), £1000; out-patient department, £2400. In addition to these there falls to be added the Caird Nurses' Home which represents several thousands of pounds. A meeting of Dundee Infirmary directors was held on Dec. 21st, 1909, when Mr. Caird's letter was read. In making the offer Mr. Caird had in his mind the claims of women and children, especially children. He has no desire that his gift should be added to the endowment, but rather intends it to enable the institution to be carried on for some years. One of the conditions of the offer is that the sanatorium should be handed over free of debt and that the endowments should go along with it. Were the directors able to take the sanatorium over on those conditions he would hand over £10,000 in such a way as to provide a revenue of £1000 a year for ten years. The directors agreed that Mr. Caird's offer was most generous, but in order that the financial position might be more fully realised, particularly as regards endowment, a committee was appointed to confer with the sanatorium executive.

Dec. 28th, 1909.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Daniel John Cunningham Memorial.

A MEETING of the executive committee entrusted with the arrangements for the proposed memorial was held in the Medical School of Trinity College on Dec. 20th, 1909, and presided over by Dr. James Little, the Regius professor of physic. It was decided to accept the estimate of Mr. Oliver Sheppard and to ask him to prepare designs for the portrait medal and bronze panel. Mr. Sheppard is a former pupil of the late Professor Cunningham and his work is already well known in the School of Physic, as it was he who designed and executed the beautiful Bennett and Banks memorials. Letters were read from some members of the University of Edinburgh, and the committee expressed its strong approval of the suggestion that similar Cunningham medals should be established in the Universities of Edinburgh and Dublin, and that identical portrait panels should be placed in the medical schools of these two universities. It was recognised that such a joint scheme would tend to perpetuate the close association into which the life and work of Cunningham had brought the medical schools of Edinburgh and Dublin. The secretaries were instructed to write to the Edinburgh committee giving the views of the Dublin committee and to express the hope that a joint scheme meeting the wishes of both universities would be approved.

Artisans' Dwellings and Open Spaces.

After discussion the report of the corporation improvements committee which dealt with the Cook-street area has been adopted by the municipality. A period of fully two and a half years has now elapsed since that district was officially reported to be in an insanitary condition and amenable to improvement by the erection of artisans' dwellings. The scheme which has now been proposed includes the clearing away of houses which are at present lodging 83 families, and the building of 162 new houses, of which 117 will be two-roomed and 45 one-roomed. Each of these houses is to accommodate one family. The two-roomed dwellings are to be let to tenants at a weekly rent of 3*s.* 6*d.* and the one-roomed at 2*s.* It is satisfactory to know that there is a prospect that when a portion of the clearance has been carried out it will be possible to leave the space free from buildings. In the present pervading atmosphere of "town-planning" the desirability of securing open spaces of this kind should surely be recognised. They serve as lungs to the whole city, as playgrounds for the children, as reflecting mirrors of sunlight and cheerfulness to the neighbouring tenant and the casual wayfarer. It has been recommended in the lay press, and every sanitary expert must surely agree with the suggestion, that "the foundation of any future scheme of 'town-planning' in regard to Dublin will be immensely stimulated and facilitated by making an effort now in all improvement schemes to secure as much open space as is financially possible. ...... It is only simple good sense to save land from the builder, where the means exist, before the effect of minor improvements has enhanced its selling value to a prohibitive degree."

Workhouse Chalet v. *Consumptive Sanatorium.*

Instructive indications of the present rate of progress of the antituberculosis crusade in different areas of the country have been furnished even in the closing weeks of the old year. The construction of sanatoriums for consumptive patients is, generally speaking, sure to receive very active opposition from the members of the governing bodies in the southern portion of this country, and there appears to have developed a widespread wave of opinion in favour of the suggestion that shelters or annexes to the existing hospitals or unoccupied workhouse wards could be made to serve the requisite purposes of the situation as efficiently as newly constructed sanatoriums, while much more convenient and less expensive. This idea has just been carried out by the Carlow board of guardians, who after the business of the last weekly meeting adjourned to the grounds of the institution for the purpose of opening the consumptive chalet which had just been completed so as to be ready for the reception of patients. The chalet is not to be used for the reception of chronic cases, but for those patients only who are in the initial stages of tuberculosis. It is a wooden structure of substantial strength, one storey high, and adapted in every way to the requirements of the most modern and successful modes of treatment of the disease. The function was presided over by the chairman of the Carlow urban council, who informed his audience that the chalet had received the approval of the medical inspector of the Local Government Board and of the medical officer of the union.

Armagh Asylum.

Sir G. P. O'Farrell, inspector of lunatics, has reported to the committee of management of the Armagh Lunatic Asylum that they should without delay take into consideration the question of providing additional accommodation. He says the laundry has become too small for the size of the institution and should be enlarged. The bedclothing was scarcely heavy enough for the winter unless the dormitories were well heated, and no steps had been taken to provide an alternative exit in case of fire. Provision for observation dormitories for the continuous supervision of suicidal and epileptic patients was also still in abeyance. This report has been referred to the visiting committee.

Unhealthy Belfast Areas.

The new scheme for getting rid of unhealthy areas in Belfast was brought before the city council last month and was unanimously approved of. The estimated cost is a little over £116,000, less about £66,000 estimated value of building ground and capitalised ground rents and other rents to be received therefrom.

The Late Hon. Archibald Gordon.

At a meeting of the Belfast Division of the British Medical Association held on Dec. 16th last (Dr. C. Kevin presiding), on the motion of Sir John Byers, seconded by Dr. John Campbell, the following resolution was passed unanimously:—

> That the members of the Belfast Division of the British Medical Association desire to express their sincere sympathy with their Excellencies the Lord Lieutenant of Ireland and the Countess of Aberdeen (who are both honorary members of the British Medical Association) in the irreparable bereavement they have sustained by the sad death of their youngest son, the Honourable Archibald Gordon, who, although still young, had already given ample promise of a brilliant career.

The honorary secretary, Dr. J. C. Rankin, was instructed to forward a copy of the resolution to their Excellencies. The corporation of the city of Belfast also passed a similar vote of sympathy on the motion of the Lord Mayor, seconded by the High Sheriff.

Dec. 28th, 1909.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Creation of a Health Department at the Ministry of Marine.

THE creation of a health department at the Ministry of Marine has recently received the necessary ministerial sanction and will be undertaken as soon as funds are voted by Parliament. The new department will possess considerable administrative powers and will be on somewhat the same lines as the analogous department already existing at the Ministry of War.

School Sanatoriums.

On the proposal of M. Lemarchand, the municipal council of Paris has directed that a commission of the council shall take into consideration the question of providing school sanatoriums for the poorer class of children attending the communal schools of the city. The object of the scheme is to obtain for the children the benefits of fresh air and hygienic surroundings without interrupting their education.

New Local Abortive Treatment of Syphilis.

In the treatment of syphilis M. Hallopeau and M. Brodier have been making comparative estimates of five remedies administered by injection under the prepuce. The substances were atoxyl, arsacetine, hectine, bibromide of mercury, and a mixture known under the name of arqueritol. M. Hallopeau and M. Brodier found that atoxyl and arsacetine were well tolerated in daily doses of 0·10 and 0·20 centigrammes, but they only used these two preparations exceptionally, because it was known that a few injections of even very small quantities might cause serious injury to the patient's sight. Hectine in daily doses of 0·10 and 0·20 centigrammes gave the best results, and with it they succeeded in aborting almost all the cases of syphilis which they had the opportunity of observing in the stage of chancre. Bibromide of mercury was well tolerated in the gluteal region, but when injected under the prepuce it gave rise to an induration extending throughout almost the whole length of the part; this induration, which had a somewhat cylindrical form, was painful and lasted for several weeks. An effect similar to that of the bibromide of mercury was produced by the mixture known as arqueritol, even when given in doses of only two centigrammes. The general conclusion was that hectine was the most useful of the substances which have been proposed for the abortive treatment of syphilis.

Conditions Simulating Abdominal Cancer.

A case which was supposed to be one of intestinal cancer but which proved to be in reality an inflammatory thickening of the colon, successfully treated by rest, was mentioned by M. Le Dentu at a meeting of the Academy of Medicine. He said that cases of perigastritis, cholecystitis, sigmoiditis, and perisigmoiditis were not infrequently mistaken for cancerous tumours. In the present instance the diagnosis was exceptionally difficult because the lesion was situated in the transverse colon. The diminution of the local enlargement under the influence of rest and medical treatment was generally sufficient to clear up the uncertainty, but he considered that there were cases in which an exploratory operation was necessary for making a diagnosis, especially when there were concomitant symptoms of intestinal obstruction.

The Medical Man in Modern Society.

Professor Debove, formerly dean of the Paris Faculty of Medicine, recently delivered an address at the Collège Libre des Sciences Sociales on the position of the medical man in modern society. He showed to a good audience how medicine, which had originally to a great extent been identified with religious rites, had become a distinct science having intimate relations with other important branches of knowledge. Neither morality nor history, nor ethnography nor psychology could ignore medicine, and hygiene was a prominent feature in social science. These things are well known to all medical men; the important thing is that the public is becoming aware of them.

Death after Recovery from Chloroform Anæsthesia.

The pathology of the lesions which sometimes cause death at a late stage after the administration of chloroform has been studied by M. Aubertin, who has succeeded in reproducing the conditions experimentally. At a recent meeting of the Biological Society he said that after being kept under the influence of chloroform for one or two hours white rats and white mice died in the proportion of 7 to 10 at the end of a period varying from two to four days. No symptoms of jaundice were observed. At the necropsy hæmorrhages in all parts of the body were found. The liver was the organ principally affected; the kidneys, the lungs, and the muscular substance of the heart also exhibited changes but in a less degree.

Dec. 27th, 1909.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Milk Diet in the Treatment of Obesity.

THE reduction of obesity by a diet consisting exclusively of milk, as suggested by Professor Moritz, has been criticised by Dr. Hedinger in a recent article published in the *Archiv für Klinische Medicin.* Dr. Hedinger said that a satisfactory anti-fat diet must appease hunger while at the same time supplying a minimum of fat-forming material. He accordingly made careful observations of the metabolism in a number of patients. Some of them were found to have so strong an aversion to a diet consisting solely of milk that the treatment had to be discontinued after a few days. In every instance a well-marked decrease of weight occurred within the first few days, which could only be explained by the withdrawal of water from the body in consequence of the diuretic and diaphoretic action of the milk. After a few days, however, the loss of weight proceeded at a diminishing rate, and might even be counterbalanced by retention of water. The patient's weight was therefore not in accordance with the loss of fat. All the patients lost a great quantity of albuminoid material during the treatment, the nitrogen determinations showing a reduction which varied between 80 and 235 grammes of muscular substance. Dr. Hedinger tried to counterbalance the loss of albuminoid material by adding nutrose and eggs but without success. The deficiency of albumin in an exclusive milk diet has thus been actually proved. Under the potato treatment, on the other hand, the amount of assimilated nitrogen was increased. A dietary consisting exclusively of milk was therefore unsuited for continuous use as a means of reducing obesity, but it might be taken with advantage on one or two days each week.

Neutralon.

At a recent meeting of the Verein für Innere Medicin Dr. Ehrmann gave some account of a new compound termed neutralon, which has proved useful in diseases of the stomach. It is a silicate of aluminium which dissolves in hydrochloric acid with the formation of chloride of aluminium and free silicic acid; it adheres strongly to the walls of the stomach, does not irritate the intestines, and has no toxic action. Professor Rosenheim, discussing the practical value of the compound, said that it has been found useful in hyperacidity, in nervous irritation of the stomach, and in ulceration. A teaspoonful of it was taken in water three times a day, either before or after meals. Dr. Alexander, writing to the *Berliner Klinische Wochenschrift,* stated that benefit had been obtained in 12 out of 18 cases of gastric ulcer, in which he had given it; the results were especially good in cases of hæmorrhagic ulcer, because the silicate by sticking to the bleeding spot acted as a hæmostatic; in cases without hæmorrhage the effect was not so remarkable. In 42 out of 54 cases of hyperchlorhydria a striking amelioration occurred within a few days; the pains and nausea disappeared; diarrhœa, if there was any, passed off; and the amount of free hydrochloric acid diminished. Among 23 cases of hypersecretion 4 showed no change, but in the remainder the state of the patients was improved. Neutralon was therefore nearly as efficacious as bismuth and nitrate of silver, but had the advantages of being neither toxic nor constipating. In the treatment of hyperacidity its action was not so prompt as that of salts of potassium or magnesium, but it was of longer duration.

The Use of Moro's Tuberculin Ointment in Diagnosis.

Dr. Weil, writing in the *Münchener Medicinische Wochenschrift,* recommends Moro's tuberculin ointment as a reliable test for tuberculosis. This ointment, which was of 50 per cent. strength, was applied to the skin of the upper arm or the abdomen, the effect being that in cases of tuberculosis a papular or pustular exanthem developed in from 12 to 36 hours, disappearing again after a few days. The method was applied in 65 cases of suspected tuberculosis, and in 15 the reaction proved positive, confirming the results of the physical examination of the patient. By the Moro test cases of apparently harmless bronchitis and anæmia could be diagnosed as tuberculous, the examination of the sputum showing tubercle bacilli at a later stage. On the other hand, in a case where tuberculous pleuritis was suspected, but the reaction with the ointment was negative, a malignant growth of the pleura was afterwards recognised. The ointment test is preferable to the Pirquet method and the ophthalmo-reaction, Dr. Weil says, being of easy application and free from danger without being less reliable.

Dec. 27th, 1909.

BUDAPEST.

(From our own Correspondent.)

Typhoid Fever in Hungary.

The outbreak of typhoid fever, which has already caused many deaths, is still on the increase, although the authorities are doing their best to check its spread. Isolation hospitals are being hastily built even in villages having a population not exceeding 4000 persons. Cases are isolated by force, if necessary, and yet the disease continues to spread in an uncontrollable manner. As an example of its prevalence, I may mention that in Nagyvarad, a city of 60,000 inhabitants, 395 cases of typhoid fever have been notified since August 1st, and it may be assumed that at least a hundred cases escaped notification. Up to Dec. 1st there were 51 deaths due to typhoid fever in Nagyvarad, which has an excellent water-supply and sewerage system. It may therefore be imagined how much greater must be the morbidity and the ravages of the disease in smaller towns and villages. In the Elesd district, for instance, there is scarcely one house without at least one case of typhoid fever or dysentery. Two officials, designated sanitary superintendents, who were sent by the Minister of Public Health to visit every village and to find out the cause of the epidemics, have come to the conclusion that the spread of the disease was due to the indescribable misery of the people. In consequence of this state of affairs the superintendents, without waiting for the instructions of the Minister, made arrangements on their own responsibility: they caused the houses to be whitened afresh; they filled up all the old wells; they divided the houses into certain groups, and for every group new wells have been bored; they erected temporary dwellings, and did what they could to improve the food-supply of the people by establishing kitchens where soup, meat, and vegetables were distributed daily. These arrangements—made also in other parts of the country—have cost up to the present time about 1,000,000 kronen (£40,000). At Budafok, a village near Budapest, one case of exanthematous fever has been notified. The source of the infection could not be traced because the patient, who was a commercial traveller, has travelled within the last month in Switzerland, Italy, and Germany. The authorities have taken all needful precautions to isolate him, and 16 days have now elapsed without the occurrence of a second case. The isolation of cases of typhoid fever has been very difficult until this epidemic, because the Contagious Diseases Act has not hitherto empowered the authorities to use force if necessary for the removal of patients to the isolation hospitals. Now, however, on account of the great dimensions which the epidemic has assumed, the various boards of health are invested with powers of compulsory removal.

Radium and Other Radio-active Substances.

The Ministry of Public Works in Austria has recently been considering the question of the sale of radium to the public by the State and has fixed the price at which it is to be sold. Professor Francis Esner has found that 1 gramme of pure radium can be extracted from the crude material supplied from Joachimsthal, and this will be sold out in portions of 1 milligramme which will cost 380 kronen (£16). The State will therefore receive 380,000 kronen (£16,000) for the lot. Intending purchasers, including a great many hospitals and sanatoriums, have already come forward, and in supplying them applications from the Austrian dominions will have priority over those sent from abroad. In Joachimsthal further quantities of radium have been found, and chemical work has resulted in the discovery of additional radio-active elements.

Conferment of a Medical Degree on Count Apponyi.

The *Official Journal* announces that His Majesty King Francis Joseph has graciously consented to the Budapest University of Sciences conferring on Count Albert Apponyi, the present Minister of Public Instruction, the degree of a honorary Doctor of Medicine. This academic distinction is given in recognition of his services in connexion with the Sixteenth International Congress of Medicine held this year at Budapest. It may be remembered that Count Apponyi was in London at the Inter-Parliamentary Conference.

Medical Students at the University of Budapest.

According to the recently published calendar of the University of Budapest, the number of medical students has increased to 1688, of whom 60 were females. The medical faculty of this University is one of the best attended in Europe, being exceeded in point of numbers only by Paris and Munich.

Dec. 27th, 1909.

CONSTANTINOPLE.

(From our own Correspondent.)

Foreign Medical Men.

For the first time a British qualified medical man has failed to satisfy the examiners in the so-called "colloquium," to which foreign physicians desirous of practising in Turkey are submitted. The unsuccessful candidate had come out as a missionary of a London society and the medical authorities refused to admit him to a second trial. It is evident that the Turks, who often act very hastily, have determined to limit the influx of medical missionaries into their country. I learn that in the near future every foreign medical man will have to pass the colloquium in the Turkish language and that the whole standard of the examination will be raised. Those who fail will have to take a complete medical course in the Constantinople Faculty of Medicine. Nobody can object to the raising of the standards of efficiency, but exception can be taken to the unfairness of doing so without warning. Such methods can only be prejudicial to the Turks themselves, who would be serious losers under any system of boycott.

Cerebro-spinal Meningitis.

It is reported that in the school Idadié of Macrikeuy, a district on the Sea of Marmora, three cases of cerebro-spinal meningitis have occurred. The municipality of the city has ordered a thorough disinfection of the school and its closure for a week.

Adulterated Soda Water.

A medical examination has shown that the bottled soda water produced here for drinking purposes is not of the required standard of purity, being frequently adulterated. The hygienic conditions of the factories have been found anything but satisfactory. The Ministry of the Interior has therefore advised the municipality to close all factories of soda water in which the beverage is not made according to strict hygienic requirements.

The German Hospital.

Dr. Alexander Cambouroglou Pasha, a well-known medical authority in Constantinople, who for a number of years superintended the surgical work of the German Hospital, has resigned that post, being succeeded by Dr. Orban Abdi, professor of surgery in the Medical Faculty of Constantinople. The last-named gentleman is reputed to be one of the best surgeons of the city. He has studied in the University of Bonn, and was for a time attached to the Public Hospital of Hamburg, working in the surgical clinique of Professor Hoffas.

The Austro-Hungarian Hospital.

The Austro-Hungarian Government is reported to have bought a large piece of ground at Taxim (above Pera) on which it is intended to erect a new Austro-Hungarian

Hospital. The old one at Azap-Kapou does not meet all the growing requirements of the institution. The plans of the new establishment will be submitted by an architect from Vienna. The total cost of its erection is estimated at 2,500,000 francs. It will be equipped in the most modern style. The work of construction will begin in the month of February next.

The Aviator Blériot.

The well-known aviator Blériot has been rather unfortunate in his attempt to cross the Bosphorus in his aeroplane. His flying machine struck the roof of a house at its very first ascent and was totally disabled. Blériot himself sustained several injuries and lies at present in the French hospital, but is convalescent.

Medical Matters in Parliament.

Dr. Izmet Bey has drawn the attention of the Government in Parliament to the very unsatisfactory conditions of the sanitary system, demanding strict and immediate measures of prevention. He also described in lucid terms the deplorable state of those medical men who have been, under the new *régime*, dismissed from the posts of various municipal hospitals to shift for themselves. It is satisfactory to see that the Turkish Parliament admits of such questions of public concern being discussed in an open manner.

The School for Dentistry.

A dental department, properly staffed, has been opened at the premises of the old medical school in Kadirga (Stamboul).

An Epidemic of Typhoid Fever in Saloniki.

It appears that an epidemic of typhoid fever has broken out in Saloniki, following immediately after the epidemic of virulent small-pox. The municipality is accused of being dilatory in its methods of combating the evil and of paying very little, if any, attention to the sanitary and hygienic conditions of the place, which seem to be very unsatisfactory indeed.

Dec. 17th, 1909.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Endowment of the American Red Cross Society.

FOR the purpose of providing an organisation capable of administering properly the funds received by the American Red Cross Society for relief work President Taft has named an endowment fund committee with the Secretary of the Treasury, McVeagh, as chairman, and his assistant Norton as treasurer. The President of the United States, in an appeal, says the time has come when this society should be placed on a permanent and efficient basis by an endowment fund whose income will enable it to be prepared at all times to carry out the purposes for which it was created. It is the authorised official organisation of the United States for volunteer aid in time of war or great disaster. After such disasters as occurred at San Francisco and in Italy large contributions are received by the society, but in the constantly recurring disasters, where smaller communities are stricken, the contributions are far too small to meet the need. In the emergency which a great disaster creates the society should always have such a reserve fund immediately available as will enable it to act with the greatest promptness instead of waiting for the collection of money. By enabling the society to continue and extend its system of first-aid instruction and its courses in simple home nursing of the sick, a *personnel* valuable in time of disaster will not only be secured, but instruction of constant and continuing usefulness will be provided. The society received last year from the 50 per cent. of annual dues paid into the National Treasury less than $4000, while the Japanese Red Cross, from the annual dues of its 1,440,000 members, received over $1,000,000. Compared with other countries the American Red Cross endowment is infinitesimal. It consists of but $119,620, as against the following amounts of other countries, including funds and estimated value of property—viz.: Austria, $2,474,577; France, $4,471,476; Prussia, $4,889,948; Japan, $8,080,948. The President says: "The standing of this remarkable organisation throughout the world, its importance to our own country, and its beneficent influence for peace and goodwill in international relief work commend it to the public-spirited men and women of the United States."

The New Hall of the College of Physicians of Philadelphia.

The College of Physicians of Philadelphia is the oldest medical organisation in the United States, having been founded in 1787. The society is a scientific and not a teaching body, and has a library only second to that of the Surgeon-General in completeness. Excluding duplicates, it contains nearly 100,000 volumes. It contains some rare works, such as one of the six copies of Harvey's "De Motu Cordis et Sanguinis," owned in the United States, the copy having the more rare final leaf containing errata. The museum of the late Professor Mutter was given to the College; it covers a floor space of 3500 square feet, and is provided with several galleries. The new building, with furniture and fixtures, cost $400,000; it is 108 by 150 feet, and has small and large lecture-rooms, the large auditorium having a seating capacity for 500 persons. The building has been dedicated with fitting ceremonies, President James Tyson presiding, and a large number of distinguished guests being present.

Sterilising Defectives by Operative Procedures.

Readers of THE LANCET will recall that two or three years ago I recorded the enactment of a law in the State of Indiana legalising operations on defectives in order to prevent the reproduction of their kind. The results of that law have been awaited with great interest, and in a recent paper we are able to determine its effects in the practice of surgeons of that State, though no report has yet been made of the results in institutions for the care and custody of this class. Dr. Harry C. Sharp of Indianapolis states that since October, 1899, he has been practising vasectomy in accordance with the provisions of this law and has operated on 456 cases. These cases, he says, "have afforded splendid opportunity for post-operative observation and I have never seen any unfavourable symptoms." In his experience there is no atrophy of the testicle, no cystic degeneration, no disturbed mental or nervous condition following, but, on the contrary, the patient becomes of a more sunny disposition, brighter of intellect, ceases excessive masturbation, and advises his fellows to submit to the operation for their own good. He regards this method of preventing procreation as infinitely superior to all others proposed, in that it is endorsed by the persons subjected to it; there is no expense to the State and no sorrow or shame to the friends of the individual. He operates without an anæsthetic, ligates the spermatic cord once, divides below the ligature, and leaves the lower end patulous in order that the secretion of the testicle "may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion." As to the danger that vasectomy may become popular with a certain class, Dr. Sharp advises a statute attaching criminal indictment to anyone submitting to the operation or performing the same without due process of law, which would be binding.

Radium Institute of America.

This institute was formed for the purpose of making a thorough study of radium and to discover any radiferous deposits in the United States. In order to study the therapeutic value of radium the projectors of the society will purchase the requisite quantities of the substance in Europe and establish a clinic in connexion with some hospital and administer treatment free to those who require it. The officers are:—President: Professor Chandler, of the department of chemistry, Columbia University; Vice-President: Dr. Robert Abbe, surgeon to St. Luke's Hospital; and Secretary: Professor Hallock, of the department of physics, Columbia University.

Tuberculosis "Preventorium" for Children.

This is the curious title of a hospital or sanatorium for the care and treatment of children suffering from tuberculosis who live in the crowded parts of cities. The establishment of this institution is due to the philanthropist, Nathan Straus, who has done so much to introduce pasteurised milk into New York and other cities for the benefit of children. The institution is located in the pine woods of Lakewood and was opened in May last, since which 92 boys and girls have been received. The improvement of these children has been remarkable, and it is now proposed to increase the capacity to 400.

Dec. 16th, 1909.

NOTES FROM INDIA.

(From our own Correspondents.)

Restrictions on the Importation of Eucaine.

The Government of India has prohibited the bringing by sea or by land into British India of eucaine, beta-eucaine, lactate-eucaine, and holocaine by means of the post, and restricts importation of these articles by any other means to cases in which they are imported by persons, or by their authorised agents, who have been specially permitted to import these drugs by a local government or administration or by the Madras Board of Revenue.

Increasing Prevalence of Rabies.

Rabies seems to be increasing to an alarming extent in India. The number of patients treated at the Kasauli Institute this year exceeds 1700, and fresh cases continue to arrive almost daily.

Vaccination in Eastern Bengal and Assam.

In Eastern Bengal and Assam considerable opposition to vaccination is reported in the Darrang district, from which the highest death-rate from small-pox was returned last year. In some villages, chiefly inhabited by Cacharis, a widespread refusal to accept vaccination is attributed to fear of the goddess Basanta, while similar prejudices are encountered among the Mahapurushyas of the Kamrup district, as well as among the Muttocks and the Miri tribes. The civil surgeon of Bakarganj reports, on the other hand, that mainly owing to the greater activity displayed in the presence of small-pox during the last quarter of 1908–09 the operations have exceeded those of the corresponding period of the previous year by 22,252, and mentions that from some of the affected localities "almost frantic letters were received begging for vaccinators to be sent." It is also stated that a much larger number of operations might have been performed in this district if more vaccinators were available, while the civil surgeon, Mymensingh, reports an increase of 26,300 operations, and attributes the large surplus to the good work done by the inspecting staff and to the assistance rendered by the assistant magistrate and by the subdivisional officers. Satisfactory returns also accrue from Faridpur, in which district the increase over the former year amounted to 22,500 operations.

The Sanitary Condition of Delhi Fort.

The Lieutenant-Governor of the United Provinces has appointed a committee, consisting of the Commissioner of Delhi, the sanitary engineer, and a third member to be nominated by the General Officer Commanding Meerut Division, to investigate the whole question of the sanitary surroundings of Delhi Fort, which was reported in an unsanitary condition during the last cold weather season.

Nov. 20th, 1909.

NOTES FROM CHINA.

(From our own Correspondent.)

Mosquito Suppression in Shanghai.

Malarial fever is endemic over the whole Chinese Empire and filariasis is also present in certain parts. Mosquitoes, a plague in some places, especially in those provinces where there are extensive paddy fields and native irrigation works, are tolerated with equanimity by the Chinese, and the problem of their extermination is not even considered. But in towns such as Shanghai, where there are large numbers of foreigners who are tormented during the greater part of the year by these insects, an effort has lately been made to benefit by the experiences of Ismailia and Panama, and with that object mosquito campaigns were undertaken in the two largest concessions—those of the British and French. There are four varieties ever present—viz., Anopheles sinensis, Culex fatigans, Armigeres ventralis, and Stegomyia fasciata. In February last the idea of a campaign for the suppression of mosquitoes in Shanghai was first mooted by a layman in the columns of the *North China Daily News;* it was generally received with amused scepticism, and many objections were raised. In the French Concession, however, a public subscription was started and a mosquito brigade enrolled. At the end of April an anti-mosquito campaign was inaugurated under the supervision of the British Municipal Health Department, and in both settlements the work was carried out actively throughout the summer. Stagnant waters were removed or kerosened weekly, creeks and ponds were cleaned, and all pieces of waste land were drained. Clearly worded regulations were issued and a regular house-to-house inspection, including yards, was carried out. Many foreign residents observed the regulations to the letter, but the Chinese were passive to such an extent that it was soon seen the inspectors would have to rely on their own unaided vigilance if any amelioration were to be expected. The results of these two simultaneous campaigns have been briefly as follows. In the spring there was a noticeable diminution as compared with former years. Then in June some weeks of trial and disappointment due to unusually wet weather brought the campaigns to a standstill and made the residents doubt the efficacy of the work of the brigades. The dryness of the succeeding months favoured the brigades and there was a remarkable decrease of mosquitoes, some residents estimating the abatement of the nuisance as much as 75 per cent., while others, an insignificant minority, said there was no improvement at all. As for the amount of work done by the Health Department alone, over 25,000 collections of stagnant water have been weekly oiled, and in one month (August) over 13,000 similar collections were removed in addition to the other work already mentioned. Much has been learnt during the initial year of the campaign and it is expected that it will now become an annual feature of the settlements. The whole cost of the work in the French Concession, which was on a less ambitious scale than that carried on by the Municipal Health Department in the English Concession, did not exceed 3000 taels, about £450. The full returns of the latter are not yet available.

Abdominal Wound Closed by Mesentery.

In a recent communication by Dr. Phillip Rees, Customs surgeon at Wuchow, an interesting example is given of the way in which the puncture of an abdominal wound may be closed by a protruding piece of mesentery, and so general peritonitis averted. The patient walked up the steps of the hospital, waited his turn with the other out-patients, and then stated that nine days previously he had been stabbed in the abdomen. On removing his clothes a large fan-shaped mass was seen protruding from a hole just above and to the right of the umbilicus. It was some five or six inches in length, about one inch thick at the base, and covered with bleeding granulation tissue. A quantity of pus was oozing up from the opening, and some more pus had burrowed beneath the skin all round. The mass was evidently great omentum. The treatment consisted in ligaturing the base as for an ovarian pedicle, cutting away the omentum and applying fomentations. In a few days skin had grown over the site of the wound, and the man regained good health. The only result of his accident is the possession of a double umbilicus. In this case, as in many others, the mesentery proved the patient's best friend.

The Present Position of Opium-Smoking in Peking.

Reports are constantly coming to hand of the progress the anti-opium struggle is making in all parts of the Empire. Much is being loosely written without the writers having taken the trouble personally to verify their facts. In some provinces the demand for opium continues as great as ever, and efforts are being made to meet it without official interference to more than a nominal extent. In the province of Shantung, however, where there has been of late a very great increase of opium imports, apparently from Shanghai, the authorities at Kiaochou (the Customs port) confiscated 40 cases and imprisoned the owners, thus raising an important legal point as to whether they could do so on an article which comes under Treaty regulations and has paid duty according to stipulations. The following statement of how matters stand in Peking, the fountain-head of all the anti-opium edicts, may be taken as a fairly accurate representation of the facts of the case, as it is the outcome of personal observations I have made in conjunction with Chinese assistance. As far as hospital experience goes one would at first say that opium-smoking had almost disappeared. The Chinese have now become secretive and deceptive about it, and it is now very rare for a man to seek treatment for smoking or to confess, when being treated for other complaints, that he is still addicted to the drug. But among the people about three-tenths have stopped and among the officials about eight-tenths. The latter, however, are subject to examination, and so stop for varying periods, resuming their smoking after examination. An exception must be made in the case of army officers—the habit would seem to be entirely abolished in this class of men. It is now rather difficult to buy opium in Peking unless under licence, which permits a smoker to buy 5 drachms weight. Each licence costs 10 cents and is available for three months after issue. Government regulates the amount purchasable each time so that a gradual diminution takes place each renewal. The number of opium dens is just about half of what it was 18 months ago. They are all illicit as the former public ones are suppressed. The native newspapers from time to time note cases of raids made by the police, the punishment inflicted on the owners when caught averaging £1 5*s.*, or a month's imprisonment. The price of opium has increased, the native product being double the rate before the edicts and the Indian product about one-third more. Opium pipes are difficult to purchase openly though they are bought secretly. As for morphia there was undoubtedly a great rise in the number of opium-smokers who left off opium and took to hypodermic injections of morphia at the time of the anti-opium edicts and for some months after their issue. But this craze has died down, and it is at least six months since I have seen a man come to hospital with marks of the needle-pricks on his arms. The reason for the diminution is simply an inability to procure the drug or the hollow needles. At the same time there is a certain amount of morphia-taking still; it is sold in an underhand way in Japanese chemists' shops. By those who are willing to pay the cost of this comparatively expensive luxury it can always be got, but if one were to compare Peking with other large cities such as New York there would be no difficulty in proving that the number of morphia maniacs in the latter city is very much greater. A great deal of opium is consumed in the form of anti-opium pills. After a large number of inquiries made over a period of several months the number of habitual "anti-opium" pill takers may be placed at between one-half and three-quarters the former total of opium-smokers. This means that the form of taking opium has merely been changed, for, as was shown in former articles in THE LANCET, opium is nearly always present in these pills. Fortunately this is a less baneful way—that is to say, a man can satisfy his narcotic craving in a way that does not stupefy him, sap his energies to any appreciable extent, or curtail his working hours. Many men take a pill now and then and go on with their work without inconvenience.

Nov. 22nd, 1909.

Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

M.S. EXAMINATION.

*William Stephen Fenwick, B.Sc., Charing Cross Hospital; Robert Milne, M.D., and Harold Edward Ridewood, M.D. (University medal), London Hospital; and Harold William Wilson, St. Bartholomew's Hospital.

* Obtained the number of marks qualifying for the University medal.

M.D. EXAMINATION.

Branch I., Medicine.—Arthur Beeley, B.S., University of Leeds; James Francis Blackett, B.S., University of Bristol; Meyer Cohen, B.S., University College Hospital; Arthur Fothergill, B.S., University of Leeds; Alexander Cecil Gurney, St. Bartholomew's Hospital; Walter Leopold Holyoak, B.S., St. Mary's Hospital; Habibmia I., Janmahomed, B.S. (University medal), Guy's Hospital; Lytton Pelham Maitland, B.S., Charing Cross Hospital; Edward Farminer Milton, B.S., Guy's Hospital; Basil Thomas Parsons-Smith, B.S., and Walter Patey, B.S., St. Thomas's Hospital; Jeffrey Ramsay, B.S., St. Bartholomew's Hospital; William Sidney Sweet, B.S., University College Hospital; Robert Stanton Woods, London Hospital; Arthur Stanley Woodwark, B.S., St. Bartholomew's Hospital; and Carl Ernst Zundel, B.S., London Hospital.

Branch IV., Midwifery and Diseases of Women.—Ernest Marshall Cowell, B.S., University College Hospital; John Harmer Drew, B.S., St. Thomas's Hospital; Paul Leon Guiseppi, B.S., St. Bartholomew's Hospital; James Littleton Lawry, B.S., London Hospital; Ivan Clarkson Maclean, B.S., St. Thomas's Hospital; and Emily Mary S. Mecredy, B.S., and Violet Ackroyd Turkhud, B.S., London (Royal Free Hospital) School of Medicine for Women.

Branch V., State Medicine.—Eric Henry Rhys Harries, B.S., London Hospital and University of Liverpool; Leonard Fabian Hirst, B.S., University College Hospital; and Sophia Seekings, B.S., London (Royal Free Hospital) School of Medicine for Women.

Branch VI., Tropical Medicine.—Arthur Brownfield Fry, London Hospital and London School of Tropical Medicine; George Montagu Harston, Charing Cross Hospital and London School of Tropical Medicine; Robert Archer Lloyd, St. Bartholomew's Hospital; and Shantaram Raghunath Shirgaokar, B.S., St. Mary's Hospital and London School of Tropical Medicine.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—J. N. Beadles (Sections I. and II.), Westminster Hospital; R. J. Cyriax (Sections I. and II.), St. Mary's Hospital; C. P. A. de L. Pereira (Section I.), Birmingham; and E. D. Richardson (Section I.), St. Mary's Hospital.

Medicine.—O. R. Kelly (Sections I. and II.), Westminster Hospital; B. W. Loewenberg (Section I.), Berlin; A. Y. Massey (Section I.), Trinity University, Toronto; and J. G. Morgan (Section I.), London Hospital.

Forensic Medicine.—O. R. Kelly, Westminster Hospital; J. G. Morgan, London Hospital; W. E. North Smith, Durham and St. Mary's Hospital; and A. H. Rich, University College Hospital.

Midwifery.—K. Baylis, Royal Free Hospital; J. N. Beadles, Westminster Hospital; and J. J. Hughes, Middlesex Hospital.

UNIVERSITY OF BIRMINGHAM (FACULTY OF MEDICINE).—The following candidates satisfied the examiners at the Final Examination for the degrees of M.B., Ch.B., held in December, 1909:—

Norman Alexander Boswell, Harold Gordon Browning, Mary Clarke, and Humphrey Francis Humphreys.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following gentlemen passed the examination in tropical medicine held at this school at the end of the thirty-first session, recently concluded:—

Major H. J. Walton, I.M.S.,* Dr. A. Hutton (Colonial Service),* Dr. G. D'Amico (Colonial Service),* Captain A. B. Fry, I.M.S.,* Dr. J. T. Smalley (Colonial Service), Dr. F. H. Storey (Colonial Service), Captain F. E. Bissell, R.A.M.C., Dr. C. E. Vail, Dr. B. W. Cherrett (Colonial Service), Dr. E. N. Cook, Dr. K. S. Mhaskar, Dr. W. J. Woodman (Colonial Service), Captain T. H. Gloster, I.M.S., Dr. P Day, Dr. R. McC. Linnell, Dr. G. Olpp, Dr. F. N. Smartt (Colonial Service), Captain R. F. Baird, I.M.S., Captain E. C. Hodgson, I.M.S., Dr. J. Lindsay (Colonial Service), Dr. G. H. Gallagher (Colonial Service), Dr. J. F. D'Mello, Dr. C. F. Strange, Dr. G. M. Sanderson (Colonial Service), Dr. A. G. Carment, Dr. W. B. Carter (Colonial Service), and Dr. H. Catto (Colonial Service).

* With distinction.

FOREIGN UNIVERSITY INTELLIGENCE.—*Augusta (Medical College of Georgia):* Dr. Charles J. Montgomery has been appointed Extraordinary Professor of Hygiene and Forensic Medicine.—*Baltimore (University of Maryland):* Dr. Howard J. Maldeis has been appointed Lecturer of Histology and Embryology.—*Berne:* Dr. Th. Christen has been recognised as *privat-docent* of Physical Therapeutics.—*Bonn:* Dr. Paul Krause, Extraordinary Professor and Director of the Medical Polyclinic, has been appointed Ordinary Professor.—*Bordeaux:* Dr. Cassaët, *agrégé*, has been appointed to the Chair of General Pathology and Therapeutics in succession to Dr. Vergely.—*Breslau:* Dr. Otfried Foerster, *privat-docent* of Nervous and Mental Diseases, and Dr. Ludwig Fraenkel, *privat-docent* of Gynæcology, have been granted the title of Professor. Professor Allard, formerly of Greifswald, who was recently appointed *Oberarzt* of the University clinic under Professor Minkowski, has been recognised as *privat-docent* of Medicine.—*Erlangen:* Dr. Richard Kümmel has been recognised as *privat-docent* of Ophthalmology.—*Giessen:* Professor R. O. Neumann, who is both M.D. and Ph.D., and who is now acting temporarily as Director of the Hygienic Institute in Heidelberg, has been offered the chair of Hygiene, together with the Directorate of the institute, which will be vacant by the recent appointment of Professor Kossel to Heidelberg.—*Greifswald:* Dr. O. Gross, *oberarzt* of the University Medical Clinic, has been recognised as *privat-docent* of Medicine.—*Hamburg:* Dr. Julius Kister of the Hygienic Institute has been granted the title of Professor.—*Heidelberg:* Dr. E. Kehrer, *privat-docent* of Gynæcology, has been promoted to an Extraordinary Professorship.—*Nantes:* Dr. Labbé has been appointed Assistant Professor of Natural History.—*Paris:* The Academy Prize of 1000 fr. (subject for this year, "Pathogeny of Pulmonary Œdemata") has been awarded to Dr. Hallion and Dr. Nepper of Paris. The Alvarenga Prize of 800 fr. for the best paper on any medical subject has been awarded to Dr. Leclerq of Paris for his work on "Diabetes and Exophthalmic Goitre." The Apostoli Prize of 600 fr. (open to foreigners) for the best work on electro-therapeutics has been awarded to Dr. A. Zimmern and Dr. S. Turchini, both of Paris, for their work on "The Thermic Effects of High Frequency Currents." The Francis Joseph Audiffred Prize of 24,000 fr. for a cure for phthisis has not been awarded, but a sum of 2000 fr. has been granted by way of encouragement to Dr. Moussu, Professor in the Veterinary School of Alfont, and Dr. Ch. Mantoux of Cannet for their work on the intradermo reaction to tuberculin in animals. Also 500 fr. have been similarly awarded to Dr. L. Rénon, professor *agrégé*, Paris, for his "Practical Treatment of Pulmonary Tuberculosis." The Barbier Prize of 2000 fr. for curative methods of diseases generally looked upon as incurable has been divided by the Academy between (*a*) Dr. Levaditi and Dr. J. Roché. both of Paris, for their work "Syphilis: Experimentation, Microbiology, Diagnosis"; and (*b*) Dr. P. Coyne, Professor in Bordeaux, and Dr. Banché, *agrégé* in Bordeaux, for their work "Polyvalent Serum in Bacillary Dysentery." The Mathieu Bourceret Prize of 1200 fr. for the best work on the circulation of the blood has been awarded to Dr. Léon Frédéricq, professor in the University of Liège, for his "Collection of Papers on the Activity of the Heart." The Buignet Prize for the best work on the applications of physics or chemistry to medical science has been awarded to Dr. H. Guilleminot of Paris for his "Collection of Papers on the Biological Action of the New Radiations." The Théodore Herpin Prize of 3000 fr. for the best work on epilepsy and nervous diseases has been awarded to Dr. P. Lejonne and Dr. J. Lhermitte, both of Paris, for their work on the "Myopathy of the Aged." The Laborie Prize of 5000 fr. to the author of the work which has made a marked advance in surgery has been awarded to Dr. P. Redard, of Paris, for his "Collection of Papers on Orthopædic Surgery." The Meynot Prize of 2600 fr. for the best work on eye diseases has been awarded to Dr. A. F. Terrien of Paris, for his "*Précis* of Ophthalmology" and his "Syphilis of the Eye and its Appendages." The Tarnier Prize of 6750 fr. for gynæcological work has been awarded to Dr. J. L. Faure, *agrégé* of Paris, for his "Papers on Hysterectomy."

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.—The Education Committee of the London County Council on Dec. 22nd, 1909, considered a report by the day schools subcommittee as to the charges to be made for medical treatment of their children to parents who can afford to pay. The subcommittee stated that counsel advised that the local authority was not entitled to totalise the whole of its payments for medical treatment and divide it equally by the number of children treated, but that the charge to the parent should represent, as nearly as possible, the actual cost to the Council of each individual child. The payments to be made to the eight hospitals with which the Council had made arrangements on a financial basis varied in respect of each hospital and also in respect of each of the three ailments proposed to be treated. It would be undesirable to differentiate in the charges at the different hospitals, but it would be possible to vary the charges to be made in respect of each ailment treated. It was calculated that the average cost of the eye cases would be approximately 4*s.* and of the ear cases 5*s.* The cost of ringworm treatment was not known with any certainty, and the subcommittee had not dealt with it at present. In view of the opinion given by counsel it appeared that payments by parents must be based on the number of attendances made at the hospital, and the average number of attendances for eye and ear cases might be taken at three. On this basis the cost per attendance would be 1*s.* 4*d.* and 1*s.* 8*d.* respectively. Each case should be considered on its merits, and the parents should be required to pay as large a proportion as they could. The care committees, which had in their possession the necessary information, should undertake this work. Although it was extremely difficult to fix a scale of charges which would not entail hardship in some cases, the subcommittee felt that some system should be followed to avoid any wide variation in different parts of the county. They suggested as a standard family two parents and four children, having a net income of 17*s.* 6*d.* a week. Below this figure no contribution should be demanded, but families better off by reason of having fewer children or larger incomes should be required to contribute on a graduated scale. The subcommittee also suggested a scheme on similar lines with regard to travelling expenses to the hospitals. The proposals were adopted after a short discussion, in the course of which the advocates of school clinics took occasion to point out that if their proposals had been adopted much of the difficulty of arranging a scale of payments by parents, particularly for travelling expenses, would have been avoided.

A DEVONSHIRE CENTENARIAN.—At the last meeting of the Newton Abbot board of guardians it was reported that the oldest recipient of out-door relief, a woman of Torquay, had recently died, aged 102 years and 314 days.

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The next meeting will be held in the Physiological Department, Guy's Hospital, London, on Friday, Jan. 7th, at 1.30 P.M., and will be resumed on Saturday, Jan. 8th, at 10 A.M.

DONATIONS AND BEQUESTS.—By the death of Mrs. G. A. Gassiot the following bequest under the will of her late husband, Mr. Charles Gassiot, becomes operative—namely: The principal sum allocated for the payment of her annuity of £5000 to St. Thomas's Hospital (to which Mr. Gassiot also left the residue of his estate).

THE NORWOOD SANATORIUM.—This institution, at which considerable investigations into the causes and the best means of treatment of alcoholism have been and are being carried out, has been removed to larger premises, known as The Mansion, Beckenham Park, Kent. The last report will be sent to any medical practitioner on his request.

THE BRITISH RED CROSS SOCIETY.—A largely attended meeting was held recently at Torquay under the presidency of Lady Churston, when it was decided to form a branch of the British Red Cross Society in that town. It was stated at the meeting that more financial support had been guaranteed from Devon than from any other county, and it had also a larger number of members.

LITERARY INTELLIGENCE.—A new series of "National Health Manuals" are being prepared under the editorship of Dr. T. N. Kelynack. All forms of social effort and enterprise, in so far as they touch medico-sociological problems, will be dealt with. The series, which will consist of 12 volumes, will be issued by Robert Culley. The first volume, dealing with "Infancy," will be issued early in the new year.

UNIVERSITY OF OXFORD.—An examination for a Radcliffe Travelling Fellowship of the annual value of £200, tenable for three years, will be held on Feb. 22nd and the three succeeding days. Candidates must have passed all the examinations for the degrees of B.A. and B.M., and they must not have exceeded four years from the time of passing the last examination for the degree of B.M. The successful candidate must before election declare that he intends to devote himself during the period of his tenure of the Fellowship to the study of medical science and to travel abroad with a view to that study. Papers will be set in physiology, pathology, and preventive medicine, and a subject will be proposed for an essay. There will also be a practical examination in pathology. Any candidate desiring to offer in addition a special branch of either medicine or surgery must send notice of this to the Regius Professor of Medicine, to whom all intending candidates should send their names, addresses, and qualifications, on or before Saturday, Feb. 5th.—The professor of pathology gives notice that an election to the Philip Walker Studentship in Pathology will take place in February next. The studentship was founded "for the furtherance of original research in pathology." It also is of the annual value of £200, payable quarterly in advance, and is tenable for three years. The student may be of either sex and need not necessarily be a member of the University of Oxford nor be legally qualified to practise medicine. While holding office the time of the student must be devoted to original pathological research. The place and the nature of the studies of the student are subject to the approval of the professor of pathology, but the student is bound to pursue these studies within the University during at least three terms of the tenure of his studentship. Intending candidates are requested to send letters of application along with three testimonals (one of which should vouch for the candidate's personal character and general education) to "The Registrar of the University, Clarendon Building, Oxford," so as to reach him on or before Feb. 14th. Testimonials ought to be framed with a view to setting forth the candidate's capacities for undertaking research work, and the greatest weight will be attached to those granted by heads of laboratories in which the candidate has worked. Copies of the regulations can be had on application to the registrar of the University.

London School of Tropical Medicine.—A very interesting dinner took place at the Trocadéro on Thursday, Dec. 23rd, when the students of the winter session dined under the presidency of Captain F. E. Bissell, R.A.M.C. The occasion was to celebrate a record entry of students at the school, 59 having been in attendance. The dinner, which was largely attended, included as guests of the evening Sir Patrick Manson, Dr. C. W. Daniels, and Mr. P. J. Michelli, C.M.G.

An Afflicted Medical Household. — The mournful coincidence of the death of three members of one family occurring within a few days of each other in the same house happened at Hove recently. Early in December the death occurred there of Mr. Reginald Rygate, L.R.C.P., L.R.C.S. Irel., the fourth son of Mr. J. J. Rygate, M.B., M.R.C.S., L.S.A. A few days after the funeral Dr. J. J. Rygate and his wife died and were buried on the same day in Hove cemetery. Dr. J. J. Rygate, who had retired from the medical profession, was late medical officer of health and public analyst for St. George's-in-the-East.

The Antivivisection Hospital, Battersea.—At Battersea, on Tuesday, Dec. 28th, Mr. Troutbeck held two inquests upon patients who had been under treatment at the Antivivisection Hospital. In the case of the first patient, who later died at the Wandsworth Infirmary, it was stated that although she waited nearly two hours at the hospital she saw no medical man at all. In the case of the second patient, a little girl who had received burns which afterwards proved fatal, the allegation was that the patient saw no medical man until the third day of attendance, and on one occasion waited three hours. The acting medical officer at the Antivivisection Hospital said that he was at the hospital from 9 until 11, and the nurse drew his attention to serious cases, a statement which he qualified by saying that he saw all the cases himself, but there were certain hours when he was not at the hospital. The jury returned a verdict of "Accidental death" in both oases, coupling each verdict with the rider that there had been neglect on the part of the hospital.

Medical Sickness and Accident Society.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Dec. 17th, 1909. There were present: Dr. F. de Havilland Hall in the chair; Mr. J. Brindley James, Dr. M. G. Biggs, Dr. M. Greenwood, Dr. F. J. Allen, Mr. H. P. Symonds, Mr. F. S. Edwards, Dr. St. Clair B. Shadwell, Dr. A. C. Hartley (Bedford), Dr. W. Knowsley Sibley, Dr. G. E. Herman, Dr. F. C. Martley, Dr. J. W. Hunt, Dr. W. A. Dingle, Dr. F. S. Palmer, and Dr. J. B. Ball. The records of the society for the month of November are very satisfactory. The sickness experienced was under the expectation and considerably less than had been usually experienced in the month of November. The number of new entrants has been exceptionally large and another gratifying feature of the business is the number of members who are availing themselves of the opportunity given by the present rules of increasing their sickness benefit to £6 6*s.* per week. Prospectuses and all further particulars on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

BOOKS, ETC., RECEIVED.

American Laryngological Association (Secretary: Dr. James E. Newcomb, New York City), New York.

Transactions of the Thirty-first Annual Meeting of the American Laryngological Association held at Boston, Mass., May 31st, June 1st and 2nd, 1909. Price not stated.

Cassell and Company, Limited, London, New York, Toronto, and Melbourne.

Serums, Vaccines, and Toxines in Treatment and Diagnosis. By Wm. Cecil Bosanquet, M.A., M.D. Oxon., F.R.C.P. Lond., and John W. H. Eyre, M.D, M.S. Dunelm, F.R.S. Edin. Second edition, thoroughly revised. Price 7*s.* 6*d.* net.

Hypnotism and Treatment by Suggestion. By J. Milne Bramwell, M.B., C.M. Price 5*s.* net.

Syphilis. By Sir Jonathan Hutchinson, F.R.S., LL.D., F.R.C.S. New and enlarged edition. Price 10*s* 6*d.* net.

Letts's Medical Diary for the Year 1910. Space for 54 patients' names daily. Prices 2*s.* 6*d.*, 3*s.* 6*d.*, and 4*s.* Space for 108 patients' names daily. Prices 4*s.* and 5*s.*

Letts's Office Diary No. 10 for 1910. Price 4*s.* 6*d.*

Letts's No. 36 Rough Diary for 1910. Interleaved blotting. Price 1*s.*

Letts's No. 34 Rough Diary for 1910. Interleaved blotting. Price 1*s.*

Letts's No. 31 Rough Diary (foolscap size). Price 1*s.* 6*d.*, or with blotting, 2*s.* 6*d.*

Chatto and Windus, London.

Herbert Fry's Royal Guide to the London Charities. 1910. Edited by John Lane. Price 1*s.* 6*d.*

Churchill, J. and A., London.

Allen's Commercial Organic Analysis. Volume I. By the Editors and the following Contributors:—E. F. Armstrong, J. L. Baker, G. C. Jones, E. Schlichting, and R. W. Sindall. Fourth edition. Entirely rewritten. Edited by Henry Leffmann, M.A., M.D., and W. A. Davis, B.Sc., A.C.G.I. Price 21*s.* net.

Fischer, Gustav, Jena.

Die Spezielle Chirurgie in 60 Vorlesungen. Kurzgefasstes Lehrbuch für Aerzte und Studierende. Von Prof. Dr. Edmund Leser. Price, paper, M.26.50; in Halbfranz geb., M.29.

Allgemeine Biologie. Von Oscar Hertwig. Dritte umgearbeitete und erweiterte Auflage. Price, paper, M.16; bound, M.18.50.

Die Morphologie der Missbildungen des Menschen und der Tiere. Herausgegeben von Dr. Ernst Schwalbe. III. Teil. Die Einzelmissbildungen. II. Lieferung. Price M.10.

Die Leukocytose bei Scharlach und anderen Mischinfektionen. Von Dr. H. Bennecke. Price M.2.50.

Frowde, Henry, and Hodder and Stoughton, London.

The Principles of Pathology. By J. George Adami, M.A., M.D., LL.D., F.R.S., and Albert G. Nicholls, M.A., M.D., D.Sc., F.R.S. (Can.) Volume II. Systemic Pathology. Price 30*s.* net.

Gili, Gustavo, Barcelona.

Tratado de Fisiología. Fisiología General. Por los Doctores L. Rodrigo Lavin y A. Pi y Suñer. Price, paper, Pesetas 18; cloth, Pesetas 20.

Green, William, and Sons, Edinburgh and London.

Pathogeny of the Neurasthenic States. By Dr. Paul Dubois. Authorised translation. Price 2*s.* net.

Government Printing Office, Washington.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XIV.

Hirschwald, August, Berlin.

Die psychische Krankenbehandlung in ihren wissenschaftlichen Grundlagen. Von Berthold Kern. Vortrag, gehalten im Verein für innere Medizin in Berlin am 15. November, 1909. Price M.1.20.

Kimpton, Henry, London. (Stenhouse, Alexander, Glasgow.)

Surgical Diagnosis. By Edward Martin, M.D. Price 28*s.* net.

Livingstone, E. and S., Edinburgh.

Catechism Series. Public Health. Part I. Water. Part II. Air and Ventilation, Warming, Lighting, and Climate. Part III. Sewage and its Treatment. Part IV. Vital Statistics, Dwellings, Meteorology. Part V. Epidemiology, Food, Burial, Water-closets, Disinfectants, Heating, Hospitals. Second edition, revised by W. Robertson, M.D., D.P.H. Price 1*s.* net each part, or five parts, bound in cloth, 4*s.* 6*d.*

Longmans, Green, and Co., London, New York, Bombay, and Calcutta.

A Practical Guide to the Administration of Anæsthetics. By R. J. Probyn-Williams, M.D. Second edition. Price 4*s.* 6*d.* net.

Panini Office, Allahabad, India.

The Dietetic Treatment of Diabetes. By B. D. Basu, Major, I.M.S. (retired). Second edition, revised and enlarged. Price Re. 1-8-0.

Rebman, Limited, London.

A Short Handbook of Cosmetics. By Dr. Max Joseph, Berlin. Third edition, with 151 Recipes. Authorised English Translation. Price 2*s.* 6*d.* net.

Saunders (W. B.) Company, London and Philadelphia.

Surgery, its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., and John Chalmers DaCosta, M.D. Volume V. Price, cloth, 30*s.* net; half morocco, 34*s.* net.

Treatment of the Diseases of Children. By Charles Gilmore Kerley. Second edition, revised. Price 21*s.* net.

Surgical Diagnosis. By Daniel N. Eisendrath, A.B., M.D. Second edition, thoroughly revised and enlarged. Price 28*s.* net.

Superintendent Government Printing, India, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 36. Observations on Rabies: With Special Reference to an Atrophic Form of the Disease Occurring in Animals. By Major G. Lamb, M.D., I.M.S., and Captain A. G. McKendrick, M.B., I.M.S. Price 8 Annas, or 9*d.*

Thacker, W., and Co., Limited, Bombay. (Thacker, W., and Co., London.)

Military Sanitation for Soldiers Serving in Hot Climates. By Major Robert J. Blackham, D.P.H. Lond., R.A.M.C., of the Middle Temple, Barrister-at-Law. Price not stated.

Walker, John, and Co., Limited, London.

Walker's Diaries for the Year 1910:—No. 4/94. Morocco, "back-loop" and pencil. Price 3*s.* No. 3/163. Long-grain leather, "back-loop" and pencil and pockets. Price 3*s.* 6*d.* No. 7/57. Cloth, no pencil, no pockets. Price 9*d.* No. 15/225, "Small Graphic." Long-grain leather, pockets. Price 1*s.* 6*d.* No. 17/237, "Large Graphic. Seal-grain" leather. Price 2*s.* 6*d.* Quarterly Pocket (Vest) Diary. In four parts. Binding No. 622. Seal-grain. Price 1*s.* 6*d.* "Ruby" Diary (very small for vest pocket). Seal-grain leather. Price 1*s.*

Calendars for Waistcoat Pocket:—"Happy Months" Calendar. Prices 6*d.*, 1s., and 1*s.* 6*d.* "Golden Thoughts" Calendar, Prices 4*d.* and 6*d.* Calendar Card. No. 0 (for vest pocket).

Wright, John, and Sons, Limited, Bristol. (Simpkin, Marshall, Hamilton, Kent, and Co., Limited, London.)

Lectures on Surgical Nursing. By E. Stanmore Bishop, F.R.C.S. Eng. Cloth, 2*s.* 6*d.* net; leather, 3*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Aubrey, Thomas, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Warmley (Gloucestershire) District Council.

Dixon, T. B., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol General Hospital.

Erskine, A. McConnell, M.D. R.U.I., D.P.H., has been appointed Medical Officer to the Goole Board of Guardians and Public Vaccinator to the Goole Union.

Fitzwilliams, Duncan C. L., M.D., Ch.M. Edin., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at St. Mary's Hospital.

Freer, R., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rugeley District of the county of Stafford.

Hill, Hedley, M.D. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Anæsthetist to the Bristol General Hospital.

Hudson, Arthur Cyril, M.D., B.C. Cantab., F.R.C.S. Eng., has been appointed Curator and Librarian to the Royal London Ophthalmic Hospital (Moorfields Eye Hospital).

Hughes, Gerald S., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon (with care of Out-patients) to the York County Hospital.

Keane, F., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballina District of the county of Mayo.

Minett, E. P., M.R.C.S., L.R.C.P. Lond., has been appointed Bacteriologist to the Royal London Ophthalmic Hospital (Moorfields Eye Hospital).

Morgan, F. C., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at the Bristol General Hospital.

Morgan, J. F. H., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Physician at the Bristol General Hospital.

Olver, Richard Sobey, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer for the No. 1 District by the St. Austell (Cornwall) Board of Guardians.

Robertson, D., M.B., B.Ch. Edin., has been appointed Casualty Officer to the Bristol General Hospital.

Royal, William John, L.D.S. F.P.S. Glasg., has been appointed Dentist to the Workhouse by the Clutton (Somerset) Board of Guardians.

Strain, Thomas, M.B., Ch.B. Glasg., D.P.H. Camb., has been appointed Assistant County Medical Officer to the Ayrshire County Council.

Thyne, W., M.D., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Barnet District of the county of Hertford.

Williams, H. W. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Holywell District of the county of Flint.

Wilson, C. M., M.B., B.S. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Registrar to St. Mary's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Aberdeen Royal Infirmary.—Assistant Surgeon.

Belgrave Hospital for Children, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £20 per annum, with board and residence.

Birmingham and Midland Eye Hospital.—Senior House Surgeon. Salary £85 per annum.

Bournemouth, Royal Boscombe and West Hants Hospital.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

Brighton, Sussex County Hospital.—Third House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and laundry.

Bristol Royal Infirmary.—Honorary Dental Anæsthetist.

Bristol, University of.—Demonstrators of Anatomy and of Physiology. Salaries £180 per annum.

Buxton, Wye House Asylum.—Assistant Medical Officer. Salary £120 per annum, all found.

Cambridge, Addenbrooke's Hospital.—Second House Surgeon. Salary £60 per annum, with board, residence, and laundry.

Cancer Hospital, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum.

Devonport, Royal Albert Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

Grimsby and District Hospital.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

Hôpital Français, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry.

Hospital for Sick Children, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence.

Ireland, National University of.—Extern Examiners in Chemistry, Anatomy, Physiology, Materia Medica, Medicine, Medical Jurisprudence and Hygiene, Pathology, Surgery, Ophthalmic Surgery, Midwifery.

Liverpool School of Tropical Medicine.—Research Students on Malaria, Parasitology, Pathological Chemistry. Salaries £150 to £250 per annum. Also Research Assistant at the Runcorn Laboratories. Salary £120.

London Temperance Hospital, Hampstead-road, N.W.—Pathologist and Bacteriologist. Salary at rate of 50 guineas per annum.

London Throat Hospital, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.—Physician.

Naval Forces in the United Kingdom.—Two Dental Surgeons. Salary £1 per diem, and travelling expenses.

New Zealand, Otago University, Dunedin.—Bacteriologist and Lecturer in Public Health. Salary £500 per annum.

Peking, S.P.G. Medical Missions Hospital.—Medical Man.

Preston Royal Infirmary.—Junior House Surgeon, Salary £60 per annum, with board, washing, &c.

Queen Charlotte's Lying-in Hospital.—Pathologist and Registrar. Salary £80 per annum, and lunch.

Royal Waterloo Hospital for Children and Women.—Honorary Physician to Out-patients.

St. George's Dispensary, Surrey-row, Blackfriars-road, S.E.—Assistant Surgeon Ear and Throat Department. Salary £50 per annum.

St. John's Hospital for Diseases of the Skin, Uxbridge-road, W.—Honorary Anæsthetist.

Salop Infirmary and County Hospital.—House Physician. Salary at rate of £70 per annum, with board and apartments.

Seamen's Hospital Society.—Assistant Physician and Assistant Surgeon at the Dreadnought Hospital, Greenwich.

Southampton, Free Eye Hospital.—House Surgeon. Salary £100 per annum, with board and residence.

Stirlingshire Secondary Education Committee.—Two Medical Inspectors of School Children (one female). Salaries £300 per annum, with expenses.

Stockport Infirmary.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

Surrey Dispensary, Southwark, S.E.—Resident Medical Officer. Salary £140 per annum, with apartments, coals, gas, and attendance.

Throat Hospital, Golden-square, W.—Surgical Registrar. Salary 20 guineas per annum.

Warwick, Hatton Asylum.—Junior Assistant Medical Officer. Salary £150, with full board.

West London Hospital, Hammersmith-road, W.—Surgeon.

Westminster Hospital.—Assistant Pathologist and Curator of the Museum. Salary 100 guineas per annum.

Woolwich Infirmary, Plumstead.—Assistant Medical Officer. Salary £150 per annum, with apartments, rations, and washing.

Yorkshire, West Riding.—Medical Inspector of Elementary School Children. Salary £300 per annum and expenses.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Berkhamsted, in the county of Hertford; and at Birmingham, in the county of Warwick.

Births, Marriages, and Deaths.

BIRTHS.

Dunstan.—On Dec. 23rd, 1909, at Water-lane, Brixton Hill, S.W., the wife of Walter Dunstan, M.B., of a daughter.

Newton.—On Dec. 27th, 1909, at "Tylecote" Ranmoor, Sheffield, the wife of Duncan Gray Newton, M.B., C.M., F.R.C.S. Edin., of a son.

Preston.—On Dec. 29th, 1909, at 18, Thorpe Mansions, Norwich, the wife of Frederick Preston, L.R.C.P. Lond., M.R.C.S. Eng., a daughter.

MARRIAGES.

Clare—Bell.—On Dec. 18th, 1909, at the Parish Church, Ewell, Thomas Charles Clare, M.B., F.R.C.S., to Annie Turnbull, eldest daughter of Robert Bell, M.D., of Stoneleigh, Ewell, Surrey.

Colbran—Harper.—On Dec. 23rd, 1909, at St. George's, Bloomsbury, W., C. Leslie Colbran, L.D.S. R.C.S. Eng., to Gertrude, eldest daughter of the late R. Blucher Harper and Mrs. Harper.

DEATHS.

Edgar.—On Dec. 25th, 1909 at Townhead, Settle, suddenly, James Walker Edgar, M.D.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HOSPITAL GAZETTES.

Guy's Hospital Gazette (Dec. 25th) has for its chief article an interesting account of the life of Dr. Thomas Hodgkin from the pen of Sir Samuel Wilks, whose memory carries him well back to the zenith of Hodgkin's pathological fame. He recalls the fact that although Hodgkin was curator in the Guy's Hospital museum and lecturer on pathological anatomy to that rapidly rising school from 1825 to 1837, yet he was passed over for the post of physician when a vacancy occurred on the hospital staff. Sir Samuel Wilks suggests that this may have been due to the hostility of the treasurer, an autocratic individual commonly known as "King Harrison," who was annoyed at Hodgkin's independent attitude and also, according to tradition, at his audacity in driving into the square of the hospital "with a North American Indian in full costume sitting beside him." After his retirement from the hospital Hodgkin devoted his best energies to the relief of the distress of the poor at home and of oppressed savages abroad, which earned him the recognition of Queen Victoria. Hodgkin described the disease which was associated with his name at Sir Samuel Wilks's suggestion when recording another case of it in 1865. A portrait of Hodgkin is given as a supplement to the *Gazette*. Of its remaining contents we note a poem "Christmas Camp" by Mr. Habberton Lulham, which shows his full depth of feeling.——The *London Hospital Gazette* (December) contains an interesting note by the Hon. Sydney Holland, illustrated from photographs showing "A New Patent Gaff," i.e., a retriever dog which he has trained at landing hooked salmon from a fast stream.——To the *St. Bartholomew's Hospital J urnal* (December) Dr. W. P. Herringham contributes a note on a case of Rheumatoid Arthritis treated with bee-stings, from which he draws the inference that "bee-stings relieve pain, or people would not go on with them as they do. It is evident, also, that they would not have to go on with them as long as they do, if the bees could effect a cure." In discussing medical etiquette in another part of the *Gazette* the same author pronounces the dictum: "The public would suffer more if doctors were dishonourable than if they were unskilful." This is a true and pregnant aphorism.——In *St. George's Hospital Gazette* (December) W. F. J. writes on "Spinning for Pike," and an anonymous nosologist gives a description of "Love in its Medical Aspects."——*St. Mary's Hospital Gazette* (December) contains an appreciation of the work of Mr. A. J. Pepper, who has recently retired from the active staff of the hospital. The chief remaining contribution is a paper on Anthrax, by Dr. W. L. Holyoak.

THE TRAINING OF MEDICAL MISSIONARIES.

WE have on several occasions referred to the good work which is done by Livingstone College in imparting to missionaries who intend to labour in places where qualified medical aid is unobtainable an elementary knowledge of medicine and surgery. In the annual report of the college, which has just been issued, reference is made to a speech of Dr. Butler, the Master of Trinity College, Cambridge, delivered at Livingstone College on Commemoration Day, in which he says: "It is really monstrous for devoted men and devoted women to go out to tropical climates without having obtained such knowledge of the mysteries of the human frame and of the importance of ministering to its necessities which it is possible to obtain in England." On the same occasion Professor Macalister said that the men trained at Livingstone College had taken their own proper platform as missionaries with a little knowledge of medicine, but not as medical missionaries, and they had done in their lifetime a splendid work. We are sorry to note that the financial year ended with a deficiency of £265, the subscriptions and donations being over £100 less than the previous year. The total income from subscriptions and donations was £266. The average number of students who entered for each term was 25, but 37 students in all entered for not less than one term. Of the 14 students who entered for the full session 11 were residents. Dr. C. F. Harford, the Principal of the College, concludes his report with the following words: "Increased efficiency is the great order of the day in every department of life, and if this is to be secured in missionary circles it must involve that missionaries going abroad should have some knowledge of the elements of medicine and surgery. Livingstone College exists to be a handmaid to all the missionary societies at home or abroad, and if only each will send its due quota of students to take advantage of the opportunities which the College affords the permanent success of Livingstone College will be absolutely secured."

The Medical Missionaries Society at Berne, which includes the names of the professors of the Faculty of Medicine of that University, has issued an appeal to medical men and students to enter the tropical missionary field. It is pointed out that up to the present time Germany and Switzerland have only sent between them some score of medical missionaries to the hot climates of the earth whilst English-speaking races have sent more than 500. Being deeply conscious of this disproportion the German-speaking countries have united in subscribing 250,000 francs to found an institute for working missionaries at Tübingen. The medical faculty of that town has gladly given its support, and on Oct. 20th last the institute was opened. It is equipped with all modern requirements and has apparatus and collections which will allow of a complete course of instruction in tropical diseases. Its director, Dr. Fiebig, Lieutenant-Colonel in the army of the Netherlands, has gained a large experience during the 22 years which he has been as military surgeon in the Dutch colonies, and he has considerably advanced our knowledge of beri-beri. His second in command is Dr. Olpp, who was for nine years superintendent of an important missionary hospital in China. An appeal for funds concludes by pointing out that although medical missionaries cannot expect to lay up for themselves any store of this world's riches, yet they have exceptional opportunities of bringing healing and consolation not to individuals only but to races, for many of the important lines of research which are being followed by men engaged in investigating the problems of tropical medicine may lead to results of a far-reaching beneficence that rarely fall to the lot of an individual investigator to compass. The appeal concludes with these words: "You will leave the sweets of civilisation, but you will every day find occasion to pour out all your energies, to apply all your knowledge, to satisfy your noblest aspirations, and you will know the joy which comes from bringing aid to your needy neighbour." If any of our readers are interested in this new institute they can obtain full information about it from Professor Niehans, Schänazlistrasse 57, Berne, or from Dr. Fiebig, director of the Medical Missionary Institute, Tübingen.

RASOIRS.

Le Figaro has published under this heading the following comment upon a recent annotation in our columns:—

> Le journal de médecine anglais *The Lancet* vient de partir en guerre contre les moustaches qu'il denonce comme un "nid à microbes."

Il paraîtrait qu'en ce moment,
Un groupe de docteurs s'attache
A proscrire sévèrement
    La moustache !

Ce sont des médecins anglais !
Mais on sait que la mode anglaise
Traverse le pas de Calais
    Très à l'aise.

Pour ces gens,—Molière honnit
Leurs chapeaux pointus et leurs robes,—
Tout poil de moustache est un nid
    A microbes !

C'est par lui que nous sont donnés
Les coryzas dont la tempête
Ravage et rougit jusqu'aux nez
    En trompette !

On doit le rhume et ses accès
Sternutatoires et ses fièvres
A cet ornement, bien français,
    De nos lèvres !

Docteurs ! vous sûtes nous poser
Votre séné, votre rhubarbe ;
Vous voulez, en plus, nous raser ?
    —Ah ! la barbe !

LOUIS MARSOLLEAU.

THE PHARMACOLOGY OF APOCYNUM CANNABINUM.

APOCYNUM, a member of the group of cardiac tonics, has been credited with being the most powerful of the known indirect diuretics. The pharmacology of this drug, which is official in the United States, has recently been worked out by Dr. J. C. W. Graham and described in the *Bio-Chemical Journal* of Nov. 10th, 1909. For experimental purposes a 10 per cent. tincture, an extract and apocynin, a glucoside obtained from the drug, were administered to frogs, rabbits, dogs, and cats. It was found that each of these preparations gave rise to the same series of effects in the frog when injected subcutaneously. The heart beat is slowed and increased in amplitude, after which the beat becomes quicker and irregular, death occurring in systole. When injected into the dorsal lymph sac of the frog it was found that apocynin is comparatively inactive, whereas the tincture is distinctly toxic, the minimum lethal dose being one minim. A 1·25 per cent. solution of apocynin is three and a half times less toxic than the tincture. It was further demonstrated that the tincture of apocynum is about one and a half times more toxic than the tinctures of digitalis and squill, and nearly six times less toxic than the tincture of strophanthus. Apocynum acts on the heart somewhat similarly to digitalis in causing slowing of the heart beat. Its principal action is to raise the tonus of the muscle of the heart. It does not appear to depress the nerve endings. It acts essentially on heart muscle by increasing its irritability. The action of the drug on the blood pressure is due to the combined effect of two or more factors, the increased output from the heart per minute and vaso-constriction, and when these two factors are most in evidence the drug produces its therapeutic effect. Experiments showed that apocynum causes a feeble increase of urinary flow in the healthy animal, its action being due to the increase in blood pressure and the passage of a greater quantity of blood through the kidney. Apocynum produces its diuretic effect best in patients with cardiac disease and a failing heart, by improving the circulation and so sending arterial blood to the kidneys in greater quantity. It has a penetrating, bitter taste, which gradually increases until nausea is felt. Large doses have a very toxic effect on the mucous membrane of the alimentary canal, producing hæmorrhagic areas and ulceration in the intestines. When compared with the other cardiac tonics apocynum ranks next to strophanthus as regards toxicity towards the frog's heart, while it is more toxic than digitalis and squill. It has a greater tendency to cause delirium cordis than any of the other three drugs. It is the most irritant of the four towards mucous membranes, as shown by the intense ulceration produced in the alimentary canal after the intravenous injection of moderate doses of the drug. Strophanthus is the least irritating to mucous membranes, and is in consequence the most readily absorbed. Apocynum is the most powerful vaso-constrictor of the group, and its property of constricting the blood-vessels stands in direct relationship to what is really the specific action of the drug—that is, its ability to increase the tonus of muscular tissue of every kind. In connexion with this action a greater rise of blood pressure is produced by apocynum than by the other members of the group. Strophanthus produces a comparatively small effect on the blood pressure, while apocynum causes a more immediate and sudden rise of blood pressure than digitalis or squill. There is no special difference in the action of these drugs on the kidney, which is in each case an indirect one, but apocynum appears to be the most likely to produce hæmaturia owing to its pronounced irritant properties.

A SINGULAR CAUSE OF DEATH.

AN inquiry was recently held at Highbridge relative to the death of a man, aged 52 years, who was found dead on the highway. Medical evidence showed that death was due to asphyxia. This was caused by his false teeth being wedged across his throat over the larynx, which made it absolutely impossible for the man to breathe. The medical witness stated that the teeth were simply held by suction, and as deceased was probably breathing heavily while he was walking up a hill, he might have drawn the teeth back into his throat, and added that he did not think the deceased could have released the teeth himself. The jury returned a verdict in accordance with the medical evidence.

L. F. (Stockbridge).—The question which our correspondent asks cannot be answered with the directness which he assumes. There is no trustworthy evidence that the specific infection of diphtheria is transmissible by water and the general opinion is against such a view. At the same time an impure water-supply, with other unhealthy conditions, may very probably predispose a community to an outbreak of diphtheria should the specific bacillus be introduced.

L. D.—(*a*) Authorities are practically agreed that antitoxin should be injected in all doubtful cases; (*b*) they are also agreed that it should be used in all cases where diphtheria has been diagnosed by swab-(*c*) its use is now practically universal in this country, as far as our knowledge is concerned; (*d*) we do not know of any recognised authorities who hold a contrary opinion.

Hector.—Our correspondent's interpretation is correct under the conditions of the experiment.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton) at University College Hospital Medical School: at 8.30 P.M.

Laboratory Meeting.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler).

Cases and Specimens:

Dr. Dundas Grant, Mr. Charters Symonds, Dr. Watson Williams, Dr. Dan McKenzie, and others.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Lantern-Lecture:—Dr. F. M. Sandwith: Malaria, with Special Reference to its Diagnosis and Treatment.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Annual General Meeting.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Dr. W. S. Lazarus-Barlow: Radio-activity and Cancer (illustrated by lantern slides).

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND, Physiological Department, Guy's Hospital, S.E.

FRIDAY.—1.30 P.M., Communications, &c., will be made by the following gentlemen:—H. J. Hutchens, P. C. W. Laws, and W. T. Sewell, W. J. Penfold, E. J. McWeeney, C. W. Ponder and G. Sims Woodhead, F. G. Bushnell, J. M. Beattie, T. Shennan and J. Miller, J. Ritchie and S. McDonald, N. Raw, M. S. Pembrey, C. M. Plumptre, E. G. Slesinger, and G. W. Goodhart, A. P. Beddard and M. S. Pembrey, A. E. Boycott and C. G. Douglas, C. G. Douglas, R. A. Chisolm, F. Parkes Weber, C. Price-Jones, and J. H. Ryffel.

SATURDAY.—10 A.M., Communications, &c., will be made by the following gentlemen:—W. Scott, H. Henry, J. McFadyean, J. P. McGowan, I. McKenzie, C. M. Stevenson, C. P. White, J. A. Murray, M. Haaland, B. R. G. Russel, H. Beckton, A. Bruce, D. Orr and R. G. Rows, W. E. C. Dickson, A. J. Hall, J. Fawcett and A. E. Boycott, W. H. White and A. E. Boycott. Demonstrations will be given by the following gentlemen:—C. P. White, J. M. Beattie, W. J. Penfold, and A. E. Boycott.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. E. R. McDonagh: Serum Diagnosis of Syphilis.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. S. Collier: Indications for Abdominal Operations.

WEDNESDAY.—4 P.M., Mr. E. M. Corner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. Donelan: Suppuration in the Maxillary Antrum.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. Oliver (Harrogate): The Treatment of High Blood Pressure.

FRIDAY.—4 P.M., Mr. J. G. French: Clinique (Ear, Nose, and Throat).

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. F. M. Sandwith: Malaria, with Special Reference to its Diagnosis and Treatment. (Opening Lecture).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn road, W.C.

THURSDAY.—4.30 P.M., Clinical Lecture:—Dr. D. Grant: Laryngeal Tuberculosis.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Essentials in the Study of Dermatology.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 will be ready shortly. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half year's numbers are now ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

Commencing with the issue of to-day, the rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 29th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 23	29·04	S.W.	0·02	56	53	49	51	52	Fine
„ 24	29·51	WNW	0·15	55	45	41	40	41	Hazy
„ 25	29·78	S.W.	...	64	48	35	37	38	Fine
„ 26	29·73	S.W.	0·02	62	52	38	46	47	Cloudy
„ 27	29 80	S.W.	0·04	56	54	47	48	50	Cloudy
„ 28	29·61	S.W.	0·06	58	54	50	52	54	Cloudy
„ 29	30·04	N.	0·01	59	46	44	41	44	Cloudy

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under	£0 4 0
	Every additional Line	0 0 6

Situations wanted: First 30 words, 2*s*. 6*d*.; per additional 8 words, 6*d*.

Quarter Page, £1 10*s*. Half a Page, £2 15*s*. An Entire Page, £5 5*s*.

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

Communications, Letters, &c., have been received from—

A.—Mr. J. Astier, Asnières; Messrs. R. Anderson and Co., Lond.; Mr. D. T. Anderson, Bukit Asahan; Aberdeen Royal Infirmary, Clerk to the; Mr. A. W. Alderson, Kimberley; Messrs. Adams and Co., Lond.

B.—Dr. W. H. Bishop, Wylam; Dr. J. C. Boyd, Lifford; Messrs. Bonacker and Rantz, Düsseldorf; Mr. S. L. Brohier, Lond.; Dr. P. Bynen, Breda; Dr. S. K. Basu, Malkhanagore; Mr. W. Bryce, Edinburgh; Dr. F. Baumholz, St. Petersburg; Messrs. J. Bale, Sons, and Danielsson, Lond.; Mr. C. A. Ballance, Lond.; Dr. J. W. Black, Inverness; Barnsley Hall Asylum, Bromsgrove, Clerk to the; Mr. C. Birchall, Liverpool; Dr. W. E. Barton, Lond.; Mr. F. N. Bose, Umballa; Mr. A. A. Bradburne, Southport.

C.—Dr. Harry Campbell, Lond.; Dr. J. H. Crocker, Richmond; Mr. J. H. Clements, Lond.; Sir James Crichton-Browne, Crindau; Messrs. Cassell and Co., Lond.; Mr. F. W. Clarke, Chorlton-cum-Hardy; Messrs. A. H. Cox and Co., Brighton; Mr. F. Collenette, Lond.; Dr. J. Chatterjee, Calcutta; Surgeon-Captain Napier Close, Chard.

D.—Dr. H. B. Donkin, Lond.; Dr. A. Duncan, Lond.; Denver Chemical Manufacturing Co., Lond.; Mr. H. Davies, Pretoria; Messrs. Dawson and Sons, Lond.; Messrs. F. Davidson and Co., Lond.; Dr. T. Dobson, Windermere.

E.—Dr. A. M. Elliott, Cookstown; Messrs. Eason and Son, Dublin.

F.—Messrs. Ferris and Co., Bristol; Dr. E. J. Foster, Fordwich, Canada; Mr. H. Frowde, Lond.; F. C. A.

G.—Dr. A. G. Gibson, Oxford; Dr. R. Martin Gil, Malaga; Messrs. Gordon and Gotch, Lond.

H.—Dr. R. H. Hekimyan, Amassia; Dr. M. Hanna, Haviland, U.S.A.; *Hospital Assistant*, Kolhapur City, Editor of; Hastings Urban Sanitary Authority, Clerk to; Messrs. C. J. Hewlett and Son, Lond.; Messrs. Haasenstein and Vogler, Cologne.

I.—Dr. F. Isdell, Southend; Captain A. C. Ingram, I.M.S., Madras.

J.—Mr. H. C. John, Lond.; Mr. A. Webb Jones, Alexandria; Dr. J. D. Jenkins, Ystrad; Dr. A. C. Jordan, Lond.; Mr. L. J. Jarvis, Lond.; Mr. W. R. W. James, Edinburgh.

K.—Dr. S. J. J. Kirby, Lowestoft; Messrs. King, King, and Co., Bombay; Mr. Kontoleon, Athens; Messrs. Kutnow and Co., Lond.; Messrs. B. Kühn and Co., Lond.; Dr. Knight, Portobello; Messrs. G. Keener and Co., Lond.

L.—Mr. H. K. Lewis, Lond.; Mr. H. H. Lacy, Warwick; Messrs. Lumley and Co., Lond.; Messrs. Luzac and Co., Lond.; Messrs. Lee and Nightingale, Liverpool; Messrs. E. and S. Livingstone, Edinburgh; London School of Tropical Medicine, Secretary of; Louisville Free Public Library, U.S.A., Librarian of; Major Clayton Lane, I.M.S., Monghyr; Lambert Pharmacal Co., St. Louis.

M.—Mr. G. E. Mould, Rotherham; Messrs. W. Martin and Co., Lond.; Monsall Fever Hospital, Newton Heath, Superintendent of; Mr. P. F. Mackenna, Ayr; Maltine Manufacturing Co., Lond.; Messrs. Macmillan and Co., Lond.; Messrs. Meister, Lucius and Brüning, Lond.; Dr. E. T. McDonnell, Clent; Miol Manufacturing Co., Lond.; M. F.; Mathematical Association and Association of Public School Science Masters, Malvern, Hon. Secretary to Joint Committee of; Mr. J. S. Mackintosh, Lond.

N.—Novo Belt Co., Manchester; Dr. H. Nordenstrom, Linkoping; Norwood Sanatorium, Beckenham, Medical Superintendent of; Dr. R. G. Nothwanger, Buenos Aires; *New York Medical Journal*, Editor of.

O.—Dr. Alice Oberdorfer, Eastbourne.

P.—Mr. Peter Paterson, Glasgow; Preston Royal Infirmary, Secretary of; Palitana State, Kathiawar, India, Chief Medical Officer of.

R.—Mr. E. M. Richford, Lond.; Royal Academy of Arts, Lond.; Royal Surrey County Hospital, Guildford, Assistant Secretary of; Dr. C. A. Roeder, Grand Island, U.S.A.; Mr. R. Redpath, Newcastle-on-Tyne; Royal Albert Hospital, Devonport, Secretary of; Reuter's Telegram Co., Lond.; Mr. C. J. Rule, Lond.; Royal Sanitary Institute, Lond., Secretary of.

S.—Mr. C. F. Scripps, Lond.; Society for the Propagation of the Gospel, Lond., Secretary of; St. Marylebone General Dispensary, Lond., Secretary of; Mr. A. Stenhouse, Edinburgh; S. A. Shehadi, El-Obeid; *South Wales Argus*, Newport, Manager of; Professor G. Elliot Smith, Manchester; Mr. T. S. Whyte Smith, Edinburgh, Salford Union, Clerk to the; *Shrewsbury Chronicle*, Manager of; *Sheffield Daily Telegraph*, Manager of; Messrs. Thomas Sly and Son, Salisbury; Sleeping Sickness Bureau, Lond., Director of; Messrs. Siemens Bros. and Co., Lond.; St. John's Hospital, Lond.; S. P. Charges Co., St. Helens; Messrs. S. B. Sketch and Co., Johnston; Stockport Infirmary, Secretary of; Smith's Advertising Agency, Lond.; Dr. A. N. Sen, Bhowanipur.

T.—Dr. J. Thomasson, Yarmouth, Isle of Wight; Tasmania, Chief Health Officer for, Hobart.

V.—Dr. Ralph Vincent, Lond.; Messrs. H. Vitrae, Girand, and Co., Lond.

W.—Dr. Richard Weiss, Lond.; Dr. Tucker Wise, Montreux; Mr. E. S. Weymouth, Lond.; Messrs. A. J. Wilson and Co., Lond.; Mr. A. Wander, Lond.; Dr. W. A. Wilson-Smith, Long Sutton; West Riding County Council, Wakefield, Clerk to the; Messrs. G. H. Wait and Co., Leicester; Dr. J. R. Webb, Footscray, Victoria; Dr. Martha Wollstein, New York; Dr. Waiz, Roncegno; Messrs. W. Wood and Co., New York.

Y.—Yenoh Honey Co., Worcester.

Z.—Messrs. C. Zimmermann and Co., Lond.; Dr. G. Zucchi, Florence.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. W. Anderson, Canton; Messrs. Armour and Co., Lond.; Dr. F. H. Anderson, Lond.; Ardath Tobacco Co., Lond.; Argyll and Bute District Asylum, Lochgilphead, Steward of; Dr. C. A. Adam, Elgin.

B.—Mr. E. J. Blackett, Lond.; Dr. C. Burns, Newmilns; Dr. A. J. G. Baker, Sarawak; Mr. H. Brice, Exeter; Dr. W. Brown, Troon; Mr. T. Bates, Worcester; Messrs. E. G. Berryman and Sons, Lond.; Dr. J. L. Bunch, Lond.; Mr. G. M. P. Braine-Hartnell, Worcester; Bristol University, Registrar of; Messrs. Blakiston Sons and Co., Philadelphia; Mr. J. Bryant, Lond.; Birkenhead Borough Hospital, Treasurer to the; Bradford Corporation, Treasurer to the; Dr. F. Barnes, Birmingham; Messrs. F. P. Baker and Co., Lond.; Dr. T. W. Buckley, Wellingborough; Dr. J. Barras, Govan; Dr. B. Boucek, Podebrady; Major C. R. Bakhle, I.M.S., Sukkur; Mr. P. C. Barth Bose, Midnapur; Mr. J. A. Bath, Leipzig; Mr. B. Bysack, Khetri.

C.—Mr. H. Cross, Toddington; Messrs. Cox and Co., Bombay; Dr. J. Cropper, Chepstow; Dr. T. H. Conarroe, Philadelphia; Messrs. G. Curling, Wyman, and Co., Lond.; Mr. T. J. Crean, Lond.; Dr. L. Crossley, Bath; Dr. H. G. Carlisle, Heswall; Messrs. E. Cook and Co., Lond.; Sir Thomas Chavasse, Birmingham; Mr. L. Clapham, Thorney; Dr. W. F. Crosskey, Lewes; Dr. J. G. Christie, Pontyrhyll; Dr. B. R. Craig Christie, Edinburgh; Calcutta Medical Club, Librarian of.

D.—Dr. W. A. Dingle, Lond.; Mr. R. K. Dhuru, Bombay; Dr. J. B. Deaver, Philadelphia; Mr. J. W. Dowden, Edinburgh; Mr. F. Diemer, Cairo; Dr. H. B. Day, Cairo.

E.—Dr. D. Ewart, Chichester; Dr. E. Elsmere, Leominster; Messrs. Evans, Sons, Lescher, and Webb, Lond.; Messrs. Evans, Sons, Lescher, and Webb, Liverpool; Mr. W. G. Evans, Handsworth.

F.—Dr. Digby French, Ballygar; Mr. L. Forgensen, Stockbridge; Dr. F. W. Foxcroft, Birmingham; Surgeon F. R. Featherstone, R.N., Osborne; Mr. H. Farbstein, Hull; Dr. J. A. C. Forsyth, Lond.; Dr. T. Carson Fisher, Torquay; Mr. T. R. Freeman, Monkton Combe; Mr. J. W. Fox, Southampton.

G.—Mr. J. H. Gibbs, Edinburgh; Dr. W. H. Gregory, Beverley; Dr. S. R. Gloyne, Lewes; Dr. W. Gray, West Hartlepool; Dr. G. C. Garratt, Chichester; Mr. H. T. Gray, Lond.; Grimsby and District Hospital, Secretary of; Dr. L. G. Gunn, Dublin; Dr. J. G. Garson, Eversley; Dr. J. T. Graham, Perth; Mr. A. P. Ghatak, Arrah.

H.—Mr. J. H. Harris, Braunston; Mr. F. Hichens, Redruth; Dr. L. B. Hayne, Harrogate; Dr. A. G. Heron, Dromara; Captain H. S. Hutchison, I.M.S., Moradabad, India; Dr. G. Hunter, Edinburgh; H. S.; Dr. T. A. F. Hood, Blairgowrie; Dr. W. W. Hardwicke, Lond.; Mr. P. Hoyland, Rotherham.

I.—Dr. A. C. Ingle, Cambridge; Mr. T. Iago, Lond.

J.—Dr. F. Johnston, Birkenhead; Dr. O. Jennings, Le Vésinet; Dr. Edith Jones, Bridgend; Dr. J. H. Jones, Rickmansworth; J. R. T.

K.—Dr. L. F. Knuthsen, Lond.; Dr. D. C. Kirkhope, Lond.; Dr. R. L. Keown, Monaghan; Mr. A. P. Kothare, Bombay; King Edward VII. Sanatorium, Midhurst, Steward of; Mr. A. Kidd, Gravesend.

L.—Mr. H. Le Soudier, Paris; Messrs. Loescher and Co., Rome; *La Semaine Médicale*, Paris, Manager of; Miss L. Loat, Lond.; Leeds Public Dispensary, Secretary of; Mr. F. J. Lynch, Armagh; Locum, Woodbridge; Dr. G. S. Landon, Carshalton; Dr. P. Livingstone, Rochdale; Leicester Infirmary, Secretary of.

M.—Dr. G. N. Meachen, Lond.; Dr. R. T. Maclaren, Moosomin; Dr. M. D. Morison, Old Bridgeport, Canada; Dr. V. Montenegro, Madrid; Dr. R. D. Macgregor, Lond.; Messrs. Z. P. Maruya and Co., Tokyo; Manchester Medical Agency, Secretary of; Mr. F. H. Moore, Prees; Dr. W. V. Morgan, Narbeth; Mr. N. McGowan, Haverhill; Dr. E. J. F. Moore, Lond.; Mr. J. Montford, Upton-on-Severn; Mr. A. Mercer, Syracuse, U.S.A.; Dr. R. McKinlay, Glasgow; Dr. G. S. Middleton, Glasgow; Mr. H. T. Mant, Lond.; Mr. E. Merck, Lond.; Mr. A. Mavrogordato, Lond.; Mr. E. Meadows, Otley; Dr. W. A. Milne, Lond.; Mr. D. Maguire, Templeboy; Manchester Corporation, Treasurer to the; Dr. W. H. Millar, Lond.; Dr. R. Miller, Lond.; Mr. E. Michels, Lond.; M. J. J.; Mr. E. Mahony, Liverpool; Sir C. R. McGrigor, Bart., and Co., Lond.; M.A., Baker-street.

N.—Mr. W. S. Nockolds, Lond.; Dr. C. R. Niven, Liverpool; Mr. G. A. Nadkar, Dhar; Messrs. Neale and Wilkinson, Lond.

O.—Mr. E. D. Outred, Grays; Dr. C. Ormerod, Croydon; Dr. O. W. Ogden, Newcastle-on-Tyne.

P.—Mr. W. T. Partridge, Lond.; Mr. V. S. Partridge, Lond.; Mr. D. Pettigrew, Sheffield; Mr. O. Penfold, Bendigo, Victoria; Dr. H. P. Potter, Lond.

Q.—Queen's Hospital, Birmingham.

R.—Dr. W. Robinson, Sunderland; Mr. H. B. Robinson, Lond.; Mr. R. P. Rowlands, Lond.; Mr. P. Ruat, Marseilles; Mr. G. Q. Roberts, Lond; Miss Ringwood, Haslemere; Mr. B. Roth, J.P., Enfield; Dr. A. E. Russell, Lond.; Mr. S. Rangachary, Secunderabad; Mr. T. Rose, Lond.

S.—Dr. G. A. Sutherland, Lond.; Messrs. Spiers and Pond, Lond.; Mr. T. Schillberg, Glasgow; Messrs. Scott and Bowne, Lond.; *St. Paul Medical Journal*, St. Paul, U.S.A.; Dr. W. J. Sheppard, Lond.; Dr. R. Saundby, Birmingham; Dr. W. H. Seed, Preston; Dr. H. H. Stiff, Bury St. Edmunds; Dr. F. Smith, Woolwich; Dr. E. Smith, Lond.; Swiss Bank, Lond., Manager of; Mr. L. Scudamore, Tredegar; Scholastic, Clerical, &c., Association, Lond.; Dr. A. Somerville, Leek; Dr. J. M. Schaub, Lond.; Dr. T. B. Shoolbread, Worksop; Major W. B. Sutherland, I.M.S., Saugor.

T.—Mr. J. Thin, Edinburgh; Mr. J. Taylor, Edinburgh; Messrs. J. Timpson and Co., Lond.; Mr. A. F. F. Tredgold, Guildford; Dr. Thibonneau, Cannes.

V.—Mr. A. V. Vise, Holbeach; Dr. H. E. Vincent, Horley; Messrs. Gerth Van Wyk and Co., Lond.; Dr. A. Vost, Alva.

W.—Dr. W. H. Willcox, Lond.; Dr. A. R. A. Wilhelm, Barkly East, South Africa; Lieutenant-Colonel Clayton White, I.M.S., Lucknow; Mr. E. V. R. Woodford, Abingdon; Dr. T. Whitelaw, Portobello; Mr. J. W. Thomson Walker, Lond.; W. W.; Messrs. J. Wyeth and Bro., Philadelphia; Dr. W. W. White, St. John, New Brunswick; Dr. C. P. White, Manchester; Sir Samuel Wilks, Bart., Lond.; West Suffolk General Hospital, Bury St. Edmunds, Secretary of; Western General Dispensary, Lond., Secretary of; W. D.; Mr. W. F. Walker, Dinas Mawddwy; Dr. J. H. Douglas Webster, Colwyn Bay; W. S.; Messrs. Wideumann, Broicher, and Co., Lond.; Dr. F. Whalley, Leeds; Dr. H. Watt, Hawes.

Y.—Dr. G. Young, Liscard; Messrs. A. C. Young and Co. Lond.

An Inaugural Address

ON

THE MEDICAL STUDENT AND HIS CURRICULUM, FROM A TEACHER'S POINT OF VIEW.

Delivered before the Leeds and West Riding Medico-Chirurgical Society.

By JOHN BENJAMIN HELLIER, M.D. LOND.,

PRESIDENT OF THE SOCIETY; PROFESSOR OF OBSTETRICS AT THE UNIVERSITY OF LEEDS; HONORARY OBSTETRIC PHYSICIAN TO THE LEEDS GENERAL INFIRMARY, ETC.

GENTLEMEN,—For more than a quarter of a century I have taken active part in the task of helping to pilot medical students through the curriculum appointed for them. As demonstrator and private coach, as lecturer, clinical teacher and professor, and university examiner, and as sharer in the counsels of those responsible for the carrying on of the School of Medicine in Leeds, I have been obliged to keep my attention constantly focussed on the ever-changing and ever-increasing demands of licensing authorities, and on the efforts which have to be made by both students and teachers to comply with these. I hope that I am not choosing an unacceptable topic if I speak to you for a little while on the Medical Student and His Curriculum from a Teacher's Standpoint. I am sure that it is a subject which needs the consideration of the whole profession.

The education of a medical student may be measured according to three different standards. First there is *the ideal*—that is, the best possible that can be attained by a student of first-class abilities when any reasonable demand for time and money can be met. I may say at once that I shall not spend time in discussing the ideal curriculum. When a student has brains and time in abundance his teachers' task is light. Our difficulties are in inverse proportion to the degree in which these factors are in evidence. Secondly, there is *the legal minimum*—that is, the least degree of education that is compatible with admission to the profession. This is a matter of obvious importance, and in England the legal minimum has reached a critical point of evolution which we will discuss later. Thirdly, there is *the actual standard* attained by each individual student as the net result of all that he has learned, diminished by what he has forgotten or learned amiss. It is the net amount of professional equipment which as the outcome of all his labours and sufferings, successes and failures, he carries out with him into the world of practice.

The amount of such equipment is an important consideration, for success in the struggle for existence is gained in proportion as a man exceeds the average. It is a serious question, for professional life is one long competitive examination, and when the student has, to use his own expression, "passed his final" this other severe and merciless inquisition is still before him.

The question of immediate interest to the student is how he may soonest make an end to his curriculum. The broader question which interests us is: *How far does that curriculum furnish the best possible preparation for the future?* I doubt if we could discuss a more interesting question than this: What was the actual amount of serviceable knowledge or regrettable ignorance with which we each started practice and how would we wish the curriculum to be remodelled if we could do it all over again in the light of present experience?

Keeping in mind the limitations proper to such a presidential address, I will glance at the past, the present, and the immediate future of the medical curriculum.

In looking into the medical education of the past we find much of vivid interest which appeals strongly to a teacher and which will, I think, interest you. The task of prescribing a high ideal for the medical student and practitioner is one that seems to have had an attraction for professional writers in all ages. If there is one thing that the medical student has *not* lacked it is good advice, and the crop of inaugural orations which the first of October annually produces are a polite education in themselves, but they have very ancient prototypes. You will find some words of wisdom by Susruta, a Sanscrit writer, whose date is anything from 600 to 1000 B.C. May I quote a few sentences?

> Students of medicine should receive both theoretical and practical training. First they should read medical treatises and then learn the practice of the art. The man who has nothing but a theoretical training and is unskilled in the details of treatment, knows not what to do when he comes to a patient, and behaves himself as pitiably as a coward on a battlefield. On the other hand, a doctor who is only practical does not win the esteem of the best men. Both these classes of incompletely prepared doctors are not fitted for practice any more than a bird is fit to soar into the air with only one wing. ...... Such people only obtain permission to practise when the government is careless or lax.

So that in his day there was some legal minimum. It is interesting to find this same teacher advising his students to *keep their hair and nails short and to wear white linen coats.* This, at all events, is up to date! One more piece of wisdom coming from 26 centuries back you must allow your president to quote to you:—

> Intercourse with other doctors is to be strongly recommended, for conversation with colleagues increases knowledge, confers pleasure, enlarges experience, imparts readiness of speech, and increases consideration. A man can learn even from his opponents, for [he very finely says] *the whole world may be called a teacher of the man of understanding and is a foe only to fools.*

But long before Susruta's time there were famous academies of learning in Egypt, where medicine was taught amongst other branches. Such were found at Heliopolis and Memphis and Thebes. Here were resident students living under the inspection and discipline of their teachers. These teachers were not free from some of the anxieties which others in later days have experienced. We find one of them writing to a pupil named Emena in these terms:—

> It has been reported to me that thou neglectest thy studies and seekest only thine own pleasure, wandering from tavern to tavern. But what profiteth the smell of beer? Avoid it; for it drives people away from thee, impoverishes thy wits, and likens thee to a broken oar upon the deck of a ship.

So that the "slacker" would seem to be co-eval with the pyramids.

The medical student in the golden age of Greece, in the time of Hippocrates and his successors, was trained with solicitous care. Each student was attached to one particular teacher who taught him everything, caring for his health and welfare generally. The well-known oath of Hippocrates sufficiently demonstrates the high ethical standard adopted by the Hippocratic school, and the profession was held in the highest honour, which even an approximate carrying out of such a standard would well deserve. There was, however, no restriction on practice, and anyone could practise who thought he had the requisite knowledge.

Later on in Rome, in Galen's time, we find the teacher with pupils attached to him, whom he takes with him to visit his patients, or whom he instructs in so-called *Tabernae medicinae*, which seem to have been open surgeries, where he and they live together. It is on record that the patients did not always appreciate these visits, especially when 30 students came at once. There is an epigram by Martial on his doctor Symmachus which satirises this practice somewhat forcibly:—

> I was ill. Thou camest forthwith to me accompanied by 100 pupils. One hundred ice-cold hands were laid on my body. Till then I had no fever. Now I have!

There were no legal restrictions on practice in Rome and they suffered badly from a surfeit of specialists.

The most striking example of a complete curriculum in ancient times was found in the famous school of Salerno, which flourished 900 years ago and which remained preeminent in Europe for two centuries. Hither came William the Conqueror for treatment of a wound. Amongst its teachers were some distinguished women, one of whom, named Trotula, wrote a treatise on gynæcology, which, I regret to say, I have not had the advantage of studying. But the extraordinary enlightenment of the wise men of those days is seen in the fact that their teachers of medicine were exempted from payment of taxes. O, for those golden days! Here in Italy in 1140 we find King Roger promulgating a law which reads as follows:—

> Whoever from this time forth desires to practise medicine must present himself before our officials and judges and be subject to their decisions. Anyone audacious enough to neglect this shall be punished by imprisonment and the confiscation of his goods. This decree has for its object the protection of the subjects of our kingdom from the dangers arising from the ignorance of practitioners.

In 1240 the Emperor Frederick II. gave complete rules in regard to the subjects to be studied at Salerno:—

> Since it is possible for a man to understand medical science only if he has previously learned something of logic, we ordain that no one

> shall be permitted to study medicine until he has given attention to logic for three years. After these three years he may, if he wishes, proceed to the study of medicine. In the study he must spend five years, during which period he must also acquire a knowledge of surgery, for this forms part of medicine. After this but not before permission may be given him to practise, provided that he passes the examinations prescribed by the authorities and at the same time produces a certificate showing that he studied for the period required by law. The teachers must during these five years expound in their lectures the genuine writings of Hippocrates and Galen on the theory and practice of medicine. But even when the prescribed five years of study are passed, the doctor should not forwith practice on his own account but for a full year more he should habitually consult an older and more experienced practitioner in the exercise of his profession.

If anyone practised without a licence he was liable to have his property confiscated and to be imprisoned for a year. Here, gentlemen, you have a preliminary education, a five years' curriculum, a qualifying examination, an enforced period of post-graduate study, and a sufficient penalising of the unqualified practitioner.

From very early times there have been two ways of learning the profession: first, the way of pupilage or apprenticeship; secondly, the academic method—that is, study at a school or university, and obviously the two may be combined. The school at Salerno and also that at Montpellier were real technical schools of medicine, but those who in the Middle Ages studied medicine at some of the universities found that it occupied a very modest place and was studied in a very deplorable manner, for the medical course dealt almost wholly with the writings of the ancients, grossly neglecting clinical and practical work. The greatest stress was laid on discussion and disputation and on a display of classical learning and dialectic skill. In our day there is nothing which we are less disposed to tolerate than a man of words and antiquated ideas, whose rhetorical powers are as great as his clinical experience is inappreciable, and who discourses with prolixity on what he has never seen or handled. We call him a windbag, and exclaim with Hamlet: "Words, words, words!"

Degrees in medicine could in some places be obtained with a facility that even an American bogus university could not outdo. At some of the French universities the M.D. could be bought for money. In Padua the custom was in vogue of candidates bringing with them to the examinations assistants who whispered to them the answers to the questions. In some cases the questions with appended answers were issued to the candidates before the examinations.

The sixteenth century saw the dawn of modern science, and the seventeenth and eighteenth saw the sunrise. The authority of the ancients was subverted by the introduction of the methods of inductive science and experimental observation. There were giants in the earth in those days—Galileo, Bacon, Harvey, Newton, Linnaeus, Malpighi, Boyle, Cavendish, Scheele, Torricelli, and their like. Anatomy, physiology, natural philosophy, and chemistry made rapid advance. Then came the Chamberlens with their forceps; Locke, Sydenham, Smellie, and the Hunters. New academies and learned societies were founded, the great medical schools had their beginnings, there was more dissection, and museums began to be established. Clinical teaching began at the universities, such as Leyden, at Paris, at Vienna, and there was more practical instruction outside the hospitals by the bedside. So that by the end of the eighteenth century there was a wide and ever-widening field before the medical student, and the man who had the *will* to learn and the means to enable him to seek and utilise the best training available might go through an ideal curriculum and find such teachers as the Hunters, Astley Cooper, Sir Charles Bell, Abernethy, and their followers; but there was no legal minimum and no restriction on unqualified practice, and the apothecary of those days, as the general practitioner was called, was a most irregular and uncertain quantity.

Fortunately, there are always men who can make their own curriculum, who can find out for themselves what there is to be learned and how to learn it. Many of the men who have done the most to advance our art have succeeded in spite of the want of early advantages. It is, of course, this very power of finding their way unaided that carries them first abreast and then far beyond their contemporaries. To get an idea of how a student of first-rate abilities learned his art at this time I have been reading again the life of the first William Hey, who lived in Leeds from 1736 to 1819, and was the father of Leeds surgery.

Hey began a seven years' apprenticeship to an apothecary at the age of 14, when he had to undertake some duties which his biographer calls menial. I suppose that he had to sweep the surgery floor and so on, but at the end of those seven years, being a man of phenomenal industry, he was proficient in the practice of medicine so far as it was understood in Leeds in the eighteenth century. Incidentally I may mention that he nearly poisoned himself with personal experiments on drugs. Then he went to London for two years and began by working 12 hours a day at anatomy, doing original anatomical research at the age of 21, and being, of course, most mercilessly chaffed by his fellow students for being such an unconsionable "grind." Then he went on to the hospital, working for all that he was worth, but being careful to study only one principal subject at a time and attaching himself to one teacher at a time until he had thoroughly mastered that teacher's ideas and methods, catechising him diligently for that purpose. One of these teachers, it is worth noting, was John Hunter. His father then suggested that he should go to Paris, but Hey decided not to go, in which decision he probably made a mistake, for even wise young men sometimes may with advantage have their decisions over-ruled by greater experience.

But all this is a most interesting study. You see the man making the curriculum, and not the curriculum the man. I do not defend a seven years' curriculum beginning at 14 with sweeping the surgery, but there is something to be said for this when it is contrasted with a five years' curriculum during three years of which the student never comes near a patient. How wise he was to work at one principal subject at once! How lucky he was to be able to do it! Men of this type are the joy of their teachers. They have a fine independence of external stimulus, they have their own methods of working. They are able to see without being shown, and they always seem to know a little more than you might expect. How they contrast with the men who always seem to know a little less than you expect, who want to have everything done for them, who cannot even see what is pointed out, and who surprise you only by what they forget, and who when the coach who has carried them through leaves them to themselves seldom travel much further. The most important thing that any student ever learns is to teach himself. This may seem an obvious platitude, but it is the last thing a good many medical students realise.

In Hey's day the land was full of apothecaries, some of whom were mere glorified grocers and many more who corresponded to the prescribing druggists and herbalists of to-day. In 1815 the Society of Apothecaries came to the rescue with an Act preventing anyone from practising as apothecary without passing the Hall. And then they took the first great step towards improving the curriculum by instituting a preliminary examination in general education. The medical schools of England no doubt originated in the attempt to provide for the instruction of the private pupils of the members of the staff by a process of division of labour. The opportunities before those who wished to learn become greater and greater, and from 1836 onwards the University of London began to invite medical students everywhere to come to her to be sifted with small sieves. But all this time there was no legal minimum, and the medical student needed not to be examined unless he liked—a rather serious option to put before him.

In 1858 came the Medical Act fixing a legal minimum for the first time for every practitioner. Of the work of the General Medical Council in raising the standard of professional attainment one would speak with the highest respect, but for a long time the man who wished to enter with the least possible amount of work had his way all too easy. When I joined the medical school here in the early "seventies" those of us who were in the grip of the University of London or of the F.R.C.S. course had to work all the time, and there were many others who did the same, but a single qualification was then sufficient and the course for the M.R.C.S. was not exacting. After the preliminary examination held by the College of Preceptors had been passed, and it could be taken one subject at a time, there was no examination till the end of the second winter, and that was an examination in anatomy with only one question in physiology. For the minimum man there was no examination in chemistry, physics, or biology, or materia medica. At the final there was a fair examination in surgery, a very easy one in medicine, and none at all in midwifery or anything else. The effect of having no examination in these subjects was that a large proportion of the men did not work at them. There were lectures in these subjects, but provided that the student attended enough to be signed up he did not feel it on his conscience to work at them. Consequently a large number of first and second years' men had the general aspect of men who were "having a day out," although they were always "going to begin to work next session." I think that in my day a botany lecture showed the medical student in his most vivacious phase.

But the General Medical Council was on the track of the minimum men, and a steady change has been going on ever since in the direction of greater requirements, more examinations, more subjects to be studied, more certificates of instruction received, and the pendulum has swung heavily in the other direction.

There has been a continuous raising of the legal minimum, a constant growth in the curriculum and in the demands of the licensing bodies. I am not about to weary you with the history of 30 years of medical education, but I want to compare *then* with *now*. It seems to me that ever since I have been a member of the Board of Medicine, we have had almost every year some change or other in the course which we have had to arrange for our students, and that it has been one constant effort first to understand what was wanted, and then to find a place to fit it into.

Perhaps some of you hardly realise how little power any individual school has to alter the curriculum even at a University such as we are now become. The requirements of the General Medical Council are our law, and I believe that in our own case it would not be possible to omit any single course of lectures or even to shorten one materially, without failing to comply with some regulation. Periodically our examinations are visited and our attention is drawn to any part where our inquisition is judged to lack severity. We can add what we like, but cannot subtract. Now what has it come to?

The minimum curriculum now requires five years with three examinations. The first may be taken in two or three parts, the second in one, the final in three, so that for the Conjoint Board seven separate trips to London may be needed even if one has not to be repeated, which has been known to happen. The student is examined in chemistry, physics, biology, practical pharmacy and materia medica, anatomy, physiology, medicine (including medical anatomy, pathology and therapeutics, forensic medicine and public health), surgery (including surgical anatomy and pathology), and the use of surgical appliances. He is required to take lectures in all these subjects, with practical and laboratory work. He is examined in midwifery and gynæcology and has to attend maternity cases. He has to take hospital practice and act as clerk and dresser and post-mortem clerk. He has to receive instruction in the administration of anæsthetics and vaccination and to attend the fever hospital and the lunatic asylum, and should know something about the diseases of eye, ear, skin, and throat, with some insight into practical bacteriology and the work of the clinical laboratory, and always on his bookshelves is a long row of text-books, of which he has to absorb the contents as he goes along. And if he has not done all this in five years, and especially if he has had a slip in one of his many examinations, the parents and guardians begin to question whether the young man is all that he ought to be.

As a matter of fact, recent investigations have shown that in the year 1906 the time taken on the average to complete the five years' curriculum in 1111 cases was 7 years in England, 5½ in Scotland, and 6 years in Ireland, with an average of 6½ for the United Kingdom.

From my soul I pity the medical student. Every hour of his time is taken up, and he has the harassing experience of having to hurry from one thing to another with no time to do anything thoroughly. The medical student to-day has *not* the air of a man who is having his day out. If I wished to sketch a typical medical student to-day I should not draw Mr. Bob Sawyer. I should picture a pale young man, with an anxious expression of countenance who looks as though a little more out-door exercise and physical culture would do him a great deal of good. He is hurrying from the school to the hospital with a notebook under his arm, and he explains that he is late for the wards because he has been detained at a lecture, and he confides to you that he is going up next month for the first part of his final, and that he has some hope but no certainty of getting through this time.

Gentlemen, in saying that the medical curriculum to-day is overcrowded, and that it is defeating its own purposes, I am not giving you novel opinions of my own. I am quoting the serious judgment of many of our best authorities. I would especially refer to an address by Sir Felix Semon in 1907, in which he compares the English and German curriculum in a very fair and striking manner. I would refer to an address delivered at Sheffield in 1908 by Professor E. H. Starling, and to Sir W. Whitla's address at Belfast recently, as well as to much that has been said at the meetings of the General Medical Council by Sir Henry Morris and Mr. Pridgin Teale. For more than 40 years we have had warnings from wise men that we are striving to enforce an impossible standard. See, for instance, what Dr. John Brown wrote in the preface to the first series of his "Horæ Subsecivæ." I have not time to quote this, but I cannot refrain from quoting some sentences written by O. W. Holmes in an address on Clinical and Bedside Teaching which was delivered at Harvard University in 1867 and which you will find in his collected medical essays. After a most delightful description of what bedside teaching may be, he continues:—

> When I compare this direct transfer of the practical experience of a wise man into the mind of a student,—every fact one that he can use in the battle of life and death,—with the far-off, unserviceable "scientific" truths that I and some others are in the habit of teaching, I cannot help asking myself, whether if we concede that our forefathers taught *too little* there is not a possibility that we may sometimes attempt to teach *too much*. I almost blush when I think of myself as describing the eight several facets on two slender processes of the palate bone, or the seven little twigs that branch off from the minute tympanic nerve, and I wonder whether my excellent colleague feels in the same way when he pictures himself as giving the constitution of neurin, which, as he and I know very well, is that of the hydrate of trimethyl-oxyethyl-ammonium, or the formula for the production of alloxan, which, though none but the professors and older students can be expected to remember it, is—
>
> $$C_{10}H_4N_4O_6+2HO,\ NO_5=C_8H_4N_2O_{10}+2CO_2+N_2+NH_4,\ O,\ NO_5.$$
>
> I can hear the voice of some rough iconoclast addressing the anatomist and the chemist in tones of contemptuous indignation: "What is this stuff with which you are cramming the brains of young men who are to hold the lives of the community in their hand? Here is a man fallen in a fit; you can tell me all about the eight surfaces of the two processes of the palate bone, but you have not had the sense to loosen that man's neck cloth, and the old women are calling you a fool! Now here is a fellow that has just swallowed poison. I want something to turn his stomach out at the shortest notice. Oh, you have forgotten the dose of the sulphate of zinc, but you remember the formula for the production of alloxan!"

It is easy to see how the present state of things has come about. There was need to make the average student work harder; there is so very much more to be learned in every branch of medical study than formerly; the professor in every department is now a specialist and not a general practitioner; it seems to him that in his own department every student ought to spend more time rather than less. You know how the General Medical Council tried to remedy the starving of clinical work by putting on a clinical year, and how the clinical year was promptly crowded out by the preliminary subjects and the consequent delay of students from coming over to the hospital or the handicapping of those who come over with arrears of examination work. We have reached the present state of things when only the smartest men can pass with anything like punctuality, and even then we have no confidence that they are as fit for the work of the profession as five years' studentship ought to make them.

So much, then, for the "past history and present state." Now as to the future? *Have we any measures for prevention and treatment to recommend?* It is no good to say that we must get a better set of students. We have the average man to deal with, and we know by long experience just about what he can be expected to do, and you may take it that the whip of examination has already been used for all that it is worth, and more.

If we are to make any substantial improvement in the present state of things we must throw part of the curriculum overboard. All the cargo is doubtless more or less valuable, but if we are to save the ship from sinking we must save what is most essential at the cost of what can be better spared. Now, what is the most important thing which a student has to acquire? I have no hesitation in answering that the most essential thing is that he shall acquire an adequate knowledge of *the clinical art*. By this I mean the art of clinical investigation and proficiency in certain kinds of technique in medicine, surgery, and obstetrics, which are as essential to him to master as it is to a captain to be able to take his latitude and longitude, to a carpenter to be able to use a plane and a saw, or to a blacksmith to be able to shoe a horse. Sir William Jenner used to say that a man seldom makes much advance on the equipment in regard to the use of the stethoscope and other clinical appliances and methods which he has attained when he finally leaves the hospital. To acquire the clinical art thoroughly is of more importance than to have had while yet a student a multitudinous experience of different diseases. It has been said that it is a very serious thing if a man who is just qualified does not recognise his first case of measles when he sees it. Still this is ignorance that is easily curable. But it is, indeed, a serious thing if a man just licensed to practise fails to recognise an empyema, or a tuberculous apex, or a well-marked case of carcinoma uteri or carcinoma recti through sheer omission of routine clinical examination or ignorance of what to look for or how to look. This is serious because such ignorance is so likely to persist.

Let us attempt to outline a schedule of what art and technique should be regarded as of imperative importance for every student, leaving for the time the specialist and the honours man to look after himself, and let us consider how much time is necessary for the purpose.

First of all the student must learn to take a clinical history, so that no material fact is omitted, and to make a physical examination of all the organs of the body so that no important sign or symptom is overlooked. I suppose that this may be said to be about as difficult as learning to play a musical instrument, involving not only knowledge of what to look for, but training eyes, ears, and fingers, and judgment to recognise and appreciate physical signs. This requires time and practice, and the study of such things as the use of the stethoscope and ophthalmoscope, the various tests applied to the nervous system, the reflexes, the electrical reactions, and so on.

Then there is the work of the clinical laboratory. The general practitioner must of necessity get much of this done by proxy, but certain clinical tests and microscopic and bacteriological work in the examination of urine, sputum, stomach contents, &c., and observations on the blood he should learn to do himself. Armed with such knowledge the student must observe a sufficient number of cases of disease as they become available for study. And then in addition he has to learn such bedside arts as washing out the stomach, dry-cupping, irrigating the bowel, faradisation, use of sera and vaccines, and other therapeutic measures.

On the surgical side he has to be drilled in the practice of asepsis, so that he may acquire the aseptic conscience, and some need more drilling than others. He has to learn all that is included in minor surgery—the use of bandages, splints, trusses, and surgical appliances generally; and he has a long series of manipulations in which to perfect himself, from tying a ligature and passing a catheter to tapping a chest and transfusing a patient. He has to learn a special series of diagnostic signs and symptoms in recognising surgical injuries and diseases; he has to learn to give anæsthetics; and he has to acquire experience of surgical emergencies and acute cases—a thing which is done only by hanging about the hospital and seizing opportunities, for strangulated hernias and dislocated joints and acute abdominal cases do not turn up at appointed hours.

In obstetrics he has now to learn the application of asepsis to labour by attendance first in a lying-in hospital. He has to learn the signs of pregnancy, especially external palpation. He has to attend his 20 cases, and he will have opportunities of seeing forceps applied and other obstetric operations provided he is on the spot when cases turn up and does not mind being fetched out of bed by telephone. In gynæcology he must learn to diagnose pelvic disease and pelvi-abdominal tumours and to perform minor gynæcological manipulations (and it takes a long time to get experience in gynæcology). He must have some knowledge of dermatology and of eye, ear, and throat work, sufficient at any rate to enable a general practitioner to recognise that disease is present and to see that acute conditions are not neglected. He has to see some fevers in the fever hospital and visit the asylum, and to learn the procedure of vaccination. Then there is the post-mortem room. Very few general practitioners ever make many necropsies, and a student's post-mortem work often has to last him for life. These things are best learned by a series of appointments, and we at Leeds have a very complete series of appointments which every man has to take. This needs time, but is a very good investment thereof. And the student also needs time to watch the material passing through the hospital generally, and to attend the systematic lectures and demonstrations which are given. Time is also needed to read, mark, learn, and inwardly digest the work of the day. Fill up this outline with anything which you think I have omitted. I must not omit to lay stress on study in the museum.

Here is three years' good work, work that must not be hurried and scamped. This is the part of the cargo which cannot be thrown overboard. To this must be added sufficient time for rest and physical exercise. This acquirement of the clinical art with clinical experience and ward and theatre drill should be the first charge on the years devoted to the curriculum, though it cannot come first in order of time, and room must be made for it somehow. This is the real apprenticeship to the profession, which is indispensable for efficiency. It is perfectly absurd that any of this should be sacrificed for less valuable matter or spoiled by overworrying the student about examinations in something else. But if a man does really learn all this well, then I for one believe that he may become an efficient practitioner, even though he be ignorant of some of the things which the syllabus of the Conjoint Examination Board says he ought to know, as, for instance, to quote from the latest one:—

> The synthesis of urea.
> The determination of empirical formulæ and molecular weight of organic compounds.
> The preparation of tartar emetic in well crystallised condition.
> The structure and life-history of Amœba, Protococcus, Paramoecium, and Spirogyra.
> The anatomy of Lumbricus.
> The structure of the dog fish.

I should not hesitate to place myself under the care of an otherwise competent practitioner because he was unable to distinguish between the leaves of Indian senna and Alexandrian senna, or between the aloes of Socotra and that which is imported from Barbados, or because he could not tell the right pisiform bone from the left or enumerate the branches of the spheno-palatine ganglion, or even because he was not skilled in taking tracings on a revolving drum.

Now comes the question, How shall we *make more time for the clinical course* upon which we thus emphatically insist?

First of all, it is not necessary to cram the curriculum into five years. The General Medical Council are not likely to extend the time at present, but the student can do it of set purpose. I say to parents who ask my advice, "The course is really a six years' course, if it is to be done thoroughly by the ordinary student. Don't worry the lad if he has not passed in five years. So long as he is working steadily he will be all the better for taking more time about it."

Next, it would be a great gain to require the student to obtain his knowledge of chemistry and physics before becoming a medical student. These branches are being more and more taught in schools and some even teach biology. I believe in "preliminary science" most heartily, just as I believe in a broad general education, but the present attempt to make *every* student a chemist and physicist does not work. The minimum standard exacted in these subjects is neither one thing nor the other. If a student has affinity for such studies let him take a thorough course, say a B.Sc. course or science tripos or its equivalent, before he becomes a medical student, and the more science he learns the better, but do not take the time off the five years' curriculum.

Next, the *intermediate* subjects can be cut down. As to materia medica, this is so obvious that I will not stay to discuss it. Anatomy and physiology can be cut down by omitting to teach the average student a great many details which have but little relation to the work of after life, and which no one in the profession who is not engaged in teaching ever does remember or is the worse for forgetting. This is what Professor Starling said last year at Sheffield, only he put it less crudely. He said that anatomical and physiological studies should be *directed*—i.e., directed with regard to the need of the practitioner. As a demonstrator I once knew my anatomy with some approach to thoroughness, and I heartily agree with Professor Starling. I must leave to those who have qualified last to say how far the modern course of physiology as taught could be reduced to essential principles by the omission of details, but I have the conviction that the ship might be lightened here considerably.

Lastly, I should *make the clinical course more severe than ever*; I should make proficiency in this the principal test of qualification for practice. In examination I should remember that any man who is going in for any special work is *bound* to do post-graduate study, and I should examine in accordance with the requirements of general practice. A man who is going in for sanitary work, for instance, will have to take a D.P.H. course, and the average man, therefore, may be examined as though he was not about to become a medical officer of health. I should myself treat forensic medicine much in the same way.

Post-graduate work is the crown of medical education. After keeping so many things going at once it is a luxury to settle down to study one thing at a time, and you have a feeling that now you are qualified you can begin to learn something. There is nothing that increases a man's efficiency more than taking one or more resident hospital appointments. Here at Leeds we have so many appointments that all the best men can usually get an appointment (though not always the one they ask for). This is about the best possible kind of post-graduate work, and gives a man confidence throughout his life in tackling the more serious cases that come under his care. I think you will agree with me that courses of post-graduate study are becoming more and more desirable for all of us. And there is another thing which I should like to urge.

When a newly qualified man tells me that he is about to begin general practice on his own account and he has never done any before, I ask him whether he is ready for it. Does the hospital and school curriculum teach him all that he needs to know? Had he not better go and learn something about it before he begins. The bulk of general practice is made up of small ailments for which patients do not go to hospital, and which would receive scant attention if they did. Like the law, hospitals are "not concerned with trifles." *De minimis non curat lex.* Yet the small ailments matter very much to the patients, and to study the beginnings of disease in the homes of the patients, in the environment that gives rise to them, is one of the most important things in medicine. Besides many men have a lordly hospital manner which has to be unlearned. In hospitals if patients do not please us we turn them out. In private practice if we do not please them they turn us out. The way to manage a practice has to be learned. If a student just qualified will go to a practitioner who has a large practice and a good method, will give him the proper guarantee that he will not become a local competitor, and then stay with him six months or a year, he will learn from him what will make his own start far easier, and will save him from some initial mistakes which may otherwise retard his progress appreciably. I consider that such a period of post-graduate apprenticeship is so valuable and so inexpensive (for the man will earn his keep and pocket-money), that I am sure that every man would be the better for taking it. And if instead of a general practitioner he becomes a consultant he will be the better all his days for having at least a short experience of the inwardness of general practice.

Now let me sum up. I have not discussed the ideal curriculum for the man of the highest abilities and with ample means at his disposal, but I speak of the curriculum set before the average student which actually is taking him six and a half years to get through somehow. I agree with so many other teachers in saying that it is defeating its own ends in an impossible attempt to teach every man everything, and that this is damaging the clinical work. The present state of things may be amended by letting the student study preliminary science before beginning his five years' curriculum. The more he can learn under such conditions the better, and the degree of success he attains will be a guide to the kind of degree he should aim at later.

The intermediate subjects are to be taught with strict consideration of the needs of the future practitioner, the student having the option of taking an honours course if he wishes.

The clinical work is not to be cut down but to be taken in less of a hurry and with as much thoroughness as possible, and clinical examination is to be the great test of fitness for practice, care being taken that the student is tested by cases well selected from the ordinary run of hospital work and not by clinical riddles and pathological enigmas with which only a specialist can be expected to be familiar.

Every man should feel bound to carry on post-graduate study, and should, if possible, take a resident hospital post and a post-graduate apprenticeship in private practice.

I think some of the matters now exacted at the final might be left for post-graduate study.

I do not flatter myself, gentlemen, that I carry you with me in all that I have said, but I think many of you will agree with my main contentions. After all, our difficulties are the outcome of the growth of our art. It seems to me and my contemporaries that we have lived in the golden age. Have we not seen the glorious day of Lister and the revolution of the whole of surgical work which has followed, the triumphs of the modern operating theatre, the establishment of the germ theory of disease, the reading of the riddle of malaria, and other splendid achievements of preventive medicine; the discovery of X rays and of radium; and the wonderful contributions which pathology is making to therapeutics with antitoxins and vaccines? Can those who are just beginning expect to see as great an epoch-making period as that just experienced by us?

No doubt we shall have to renounce many things which we now do steadfastly believe, and some of the newer modes of treatment may take a humbler position than their originators anticipate, as has happened before; but though the tide may ebb and flow, who can doubt that there will ever be progress onwards? We may even now be on the verge of great discoveries which will eclipse what has been done in the past, and when the youngest member on our roll to-day shall some 30 years hence, by reason of seniority, take his place in this chair, he will doubtless make a telling inaugural address by contrasting the brilliant discoveries of his day with the exploded ideas and antiquated methods which prevailed in the year 1909. So let it be! For my own part, I do not hesitate to appropriate to the future of medical science the words of the ancient Hebrew poet, who says:—

> "As for truth, she abideth and is strong for ever.
> She liveth and conquereth for evermore."
> —1 Esdras iv. 38.

(In preparing this paper free use has been made of Dr. Th. Puschmann's "History of Medical Education" (English translation by E. H. Hare, 1896), to which most interesting work the author acknowledges his obligations.)

LONDON OPHTHALMIC HOSPITAL.—The annual dinner of past and present students of the Royal London (Moorfields) Ophthalmic Hospital will be held at the Trocadéro Restaurant on Wednesday, Jan. 26th, under the presidency of Mr. Edward Nettleship, consulting surgeon to the hospital. Tickets, price 10*s.* 6*d.*, exclusive of wine, may be obtained from the honorary secretaries, Mr. Arnold Lawson, 12, Harley-street, W., and Mr. J. Herbert Parsons, 54, Queen Anne-street, W.

THE PUTNAM JACOBI FELLOWSHIP FOR WOMEN.—The Women's Medical Association of New York City offers the Mary Putnam Jacobi Fellowship of $800.00 available for post-graduate study. It is open to any woman graduate in medicine. The Fellowship will not be awarded by competitive examination, but upon proof of ability and promise of success in the chosen line of work. Applications for the year 1910–11 must be in the hands of the committee on award by March 1st, 1910, and must be accompanied by: (1) testimonials as to thoroughly good health; (2) letters as to ability and character; (3) a detailed account of educational qualifications; (4) a statement of the work in which the applicant proposes to engage while holding the Fellowship; and (5) examples, if any, of her work, in the form of articles, or accounts of investigations which she has carried out. When possible it is considered desirable that the applicant should present herself in person to the committee. Two reports will be expected from the holder of the Fellowship, one to be presented about the middle of the research and a detailed report upon its completion. As a rule, the Fellowship will be awarded but once to an applicant; in case of unusual ability a re-award will be considered. All applications for this Fellowship should be forwarded to the chairman of the committee on award, Dr. Emily Lewi, 35, Mt. Morris Park, West, New York City, U.S.A.

ABSTRACT OF THE

Fourth William Mitchell Banks Memorial Lecture

ON

RECENT OBSERVATIONS ON TUMOURS OF THE BRAIN AND THEIR SURGICAL TREATMENT.[1]

Delivered under the Auspices of the University of Liverpool,

BY HARVEY CUSHING, M.D.,

ASSOCIATE PROFESSOR OF SURGERY, THE JOHNS HOPKINS UNIVERSITY, BALTIMORE.

INTRODUCTION.

THE nervous system is acknowledged to offer more difficult and intricate problems of disease than any other structural subdivision of the body, and medicine, generally speaking, has willingly surrendered the disorders of this system to those whose inclinations prompt them to labour exclusively in this abstruse and, from a therapeutic point of view, most unpromising field. This arrangement, which has made neurology possible as a specialty, has been the chief element in the rapid furtherance of our knowledge concerning diseases of the nervous system, owing to concentration of attention upon them by a select body of men—a fact equally true of other branches which have become split off in similar fashion from the parent stem of medicine.

In one respect, however—in matters relating to surgical therapy—neurology has notably lagged behind other specialties in this general advancement. Regarding surgery as a legitimate and important adjunct to their therapeutic resources, a certain proportion of those who have made a special study of the diseases of one part or another of the alimentary canal, or of the female pelvic organs, or of the genito-urinary passages, or of the bones and joints, and so on, have trained themselves in the conduct of operative procedures, to the unquestioned benefit of their specialty. Few, if any, neurologists, however, through a personal interest in operative work, have similarly fitted themselves to undertake such surgical measures as may be demanded by certain of the maladies which they encounter. Consequently, when indications arise justifying or necessitating operative treatment the neurologist must usually turn to a general surgeon, who, without special knowledge of the physiology and pathology of the conditions of disease, is called upon to be the hands, as it were, which perform under the direction of another—a state of things comparable to that which existed in days not remote, when the herniotomist or cutter for stone was called in to operate under the direction and guidance of the physician—or worse, operated with no such control. This unfortunate relationship, under which the most serious kind of therapeutics—that of the scalpel—was left to a mere handicraftsman possessing little knowledge of disease, was the inevitable consequence of the unfortunate divorce of surgery from medicine which Sir Clifford Allbutt in a delightful essay has so well described.

No physician to-day who has the best interests of his patient at heart would for a moment think of summoning a surgeon to operate for appendicitis, let us say, unless he felt sure that the surgeon was as familiar with the diseases of this organ and their clinical manifestations as he himself, nor would he expect to be called upon to indicate by a mark on the skin where the affected organ lay or to be asked what to do with it when exposed; yet this continues to be the relationship between the neurologist and the surgeon, particularly in the case of brain tumours. It all goes to show that, if we are to regard these intracranial lesions as things mechanical which demand mechanical or operative treatment, those who are to be called upon to undertake their conduct must have fitted themselves, through preparation in the neurological clinic and laboratory, to look upon these maladies from the same point of view and with the same understanding, if possible, as the neurologist. In other words, it will benefit the specialty if certain members of the future school of neurology will perfect themselves in these matters of handicraft, so that they may be able to conduct their own operations—measures, it may be added, which require a special training, apart from that which the surgeon himself usually receives at the present day.

It is a common experience to find that the number of individuals afflicted with a given malady appears to increase as soon as particular interest is paid to it, especially if coupled with this active interest some reasonable hope of therapeutic benefit can be held out; and during the past year the number of patients with brain tumour admitted to the Johns Hopkins Hospital—a general hospital with a service unlike that of the London institution in Queen-square devoted exclusively to nervous diseases—has equalled that of the preceding 20 years, so that in Professor Halsted's clinic, with which I am associated, the percentage has increased in the past few months to four in every 100 admissions.

A fortunate combination of circumstances has given my assistant, Dr. George J. Heuer, and myself the privilege of seeing most of these cases at first hand, the larger number of them, it may be added, being sent directly to us by ophthalmologists, who have been the first to appreciate, through the accidental discovery of a neuro-retinal lesion, the possible presence of a growth, and who have come to learn that vision may oftentimes be saved through a comparatively simple operation. It has consequently become incumbent upon us to make the primary clinical study of these patients, with the necessary acquirement of some facility not only in recognising the tumour symptom-complex but in making a regional diagnosis as well. We have, furthermore, had the privilege granted us by the pathological department of making our own studies, not only of the tissues removed at operation but of the nervous system itself, in case of an operative fatality or in case death has occurred after the variable interval of relief brought about by such palliative measures as are adapted to unlocalisable, irremoveable, or inaccessible growths. These opportunities have enabled us to make certain observations of value from a purely surgical point of view, so that in a number of instances a precocious diagnosis, followed by a successful operation, has been possible at a period of the disease when otherwise these unfortunates might have been given over to therapeutic procrastination.

During the past ten months we have operated upon 64 cases of brain tumour, and such statistics as I shall present are based in large part upon our experiences with this recent group of patients. Inasmuch as they have been treated upon similar lines and under like operative conditions they are consequently more significant than any possible compilation of reported cases subjected to operation at various hands under variable conditions.

CLINICAL MANIFESTATIONS OF TUMOUR.

[The usual distinction was drawn here by the lecturer between the pressure phenomena due to the general increase of cerebral tension, which may occur irrespective of the situation and nature of the lesion, and the localising manifestations themselves, emphasis being laid on the fact that tumours may exist for years in the absence of one or both of these groups of symptoms and may even be an unexpected post-mortem finding. Though pressure symptoms are, as a rule, to be expected, they are more likely to be absent or indefinite than to appear "full-blown" in their text-book form. We may encounter (1) patients with tumours giving none of the supposedly characteristic symptoms; (2) patients with tumours producing pressure symptoms alone without focal symptoms; (3) patients with tumours producing focal symptoms alone without pressure symptoms; and (4) (what is ultimately to be expected in all) patients with tumours giving both general and focal symptoms. Tumours are often of years' duration before this final stage is reached; so that diagnoses of dementia, hysteria, psychoneurosis, migraine, headache from eye-strain, dyspepsia or nephritis, and what not, are made in the attempt to explain the vague symptomatic disturbances which may occur during the stage of an intracranial growth antecedent to the onset of those symptoms on whose presence the diagnosis is usually made. Only one of the so-called cardinal pressure symptoms—namely, the choked disc—lends itself readily to experimental investigation. This has shown it to be largely if not entirely a mechanical affair, attributable to increased tension of the intracranial fluids. Hence it is a natural conjecture that the other more subjective processes, such as headache, nausea, and vomiting, are due to the same or an allied cause. The lecturer continued:—]

Choked disc is the most important, as well as the most interesting of all the general pressure phenomena, for the discovery of which we are indebted to what Helmholtz termed his

---

[1] The lecture, the manuscript of which did not reach our hands until some time after its delivery, was copiously illustrated by lantern slides, in the absence of which it does not lend itself to publication in full. The lecturer at the outset commented on the frequent occurrence of intracranial tumours and the ease with which they may be overlooked, failure to recognise them in their early stages being one of the commonest of diagnostic errors. Neurological maladies in general are shunned by many physicians and more surgeons owing to their presumed obscurity and therapeutic hopelessness.

"optical toy," the invaluable ophthalmoscope. This instrument in its electrical form should be in the hands of every neurologist and neurological surgeon, for with this device no especial skill is needed in bringing the retina clearly into view in any surroundings, so that an ophthalmoscopic examination becomes as simple a routine as that of estimating the pupillary reflexes.

There has arisen an unfortunate terminology in regard to the retinal lesions accompanying tumour, largely due to the assertion of von Leber that the process is an inflammatory or toxic affair. Through acceptance of his views the terms "optic neuritis" and "papillitis" became firmly established, particularly in England, whence they were transported to our own.

A further confusion has arisen owing to the custom of referring to the earlier stages of the process as a "neuritis" and of reserving the term choked disc for a later period when a measurable swelling of the papilla has occurred. If these conditions are to be regarded as stages of one and the same process, which they unquestionably are, it would seem advisable to reserve one term to indicate the entire process from its early stage of engorgement to the terminal atrophy. "Papillœdema" has recently been proposed as suitable for this purpose, though it does not seem to possess any distinct advantage over the well-established designation of choked disc; and the late Marcus Gunn has suggested "tumour papillitis" with the full recognition that the process is a progressive one throughout, whatever may be its underlying cause. This term, however, not only indicates again an inflammatory lesion but one which is restricted to tumours, whereas we know that lesions which are in every way indistinguishable from the choked disc of tumour occur in common with increased intracranial pressure due to other agencies.

Recent observations, both experimental and clinical, have served to swing the pendulum back to the original views of von Graefe, Schmidt-Rimpler, and Manz, that the process, after all, is largely a mechanical one. Some arguments in favour of these views may be briefly summarised.[2] 1. It has been possible in the canine to reproduce the early stages of a choked disc by the introduction of fluid under pressure into the subdural space. This fluid, finding its way into the sheath of Schwalbe, leads to venous stasis and to the characteristic neuro-retinal œdema. 2. Provided a choked disc has not progressed to one of the later stages in which there is extensive new tissue formation due to the organisation of hæmorrhages and exudates, its rapid subsidence can usually be assured by the mere relief from pressure afforded by a decompression operation—a measure which is now daily serving as a means of preserving vision for many of these unfortunates, even though the growth itself remains untouched. It is notable, furthermore, that the swelling subsides more rapidly in the eye homolateral to the decompression owing to the greater relief from pressure on this side, even though it be the side occupied by the tumour. 3. The routine daily examination with the electric ophthalmoscope of patients after such cranial injuries as basal fractures has shown that a choked disc in the so-called stage of "optic neuritis" is of frequent occurrence, due in all probability to the cerebral œdema which follows concussion or contusion. The neuro-retinal swelling in these cases, together with the other existing pressure symptoms, usually subsides promptly after the establishment of a suitable subtemporal opening in the cranium. It may be mentioned, further, that we have evidence in support of Byrom Bramwell's view that "albuminuric retinitis" so-called may be in large part dependent upon a similar cerebral œdema. It may indeed be difficult or impossible to distinguish this condition from the choked disc of tumour, the latter often showing hæmorrhages and exudates exactly comparable to those supposed to typify the changes that accompany nephritis.

In addition to the familiar triad of headache, vomiting, and choked disc, with certain other general pressure manifestations of less moment, such as vertigo, dizziness, convulsions, and the like, there occurs in most cases of tumour a further sign to which I desire to call particular attention, for it seems to be one of the earliest and most reliable indications of an increase in intracranial pressure.

Dyschromatopsia.—In affiliation with Dr. James Bordley, it has been customary with us in the study of the eyes of these patients to test the visual acuity and to plot the fields for form and colour, in addition to the usual observations upon retina, pupil, movement, and so on.[3] It was an early experience to find the existence in many cases of an inversion, or a tendency towards inversion (interlacing) of the colour fields, a process which almost invariably affects the blue more than the other colours.

In agreement with Charcot and his school, this condition has been commonly regarded as one of the most characteristic signs of hysteria, and we were inclined to believe at first that in our patients it was merely an evidence of some functional disturbance superimposed on the organic lesion, the presence of which we were often able to demonstrate. However, as we began to see the tumour cases at an earlier and earlier stage, the majority of the patients betraying no neurotic tendency whatsoever, we came to regard the dyschromatopsia as definitely characteristic of the pressure of tumour—so characteristic, indeed, that we have become somewhat sceptical of the diagnosis "hysteria" when based upon these long-recognised alterations in the colour fields, particularly in view of the fact that a large percentage of our patients ultimately showing a typical brain tumour symptom-complex have at one time or another in the course of their disease been considered hysterical.

The dyschromatopsia, it may be added, bears no apparent relation in these cases to the degree of choked disc, and in a number of instances the characteristic distortion of the colour fields has actually been demonstrated before the ophthalmoscope disclosed the presence of the expected neuro-retinal changes. We have, indeed, come to place so much confidence in this phenomenon as an early indication of increased intracranial tension that in a few cases we have ventured to operate at a stage before choked disc has occurred, and in two instances at least the successful extirpation of a small tumour at an early date has been due to our growing faith in the reliability of this sign. The probable relation of these alterations in the colour fields to intracranial tension is indicated by the rapid return to the normal configuration of their boundaries after relief from pressure has been afforded by the usual palliative operation. It seems to be a more delicate gauge of tension even than choked disc.

Varying grades of dyschromatopsia may be associated with or may precede an accompanying contraction of the field for form. Thus, as is often the case with other of the signs of general pressure, these colour changes may possess at times a certain localising value. For example, with an intact form field we have observed in a number of instances a half-loss of the colour fields (hemiachromatopsia), which foretold a subsequent total hemianopsia. But even in these cases more or less complete inversion has been present in the half-fields of retained colour vision.

We have endeavoured to eliminate every source of error in making these observations, and should they be corroborated by others the phenomenon may prove valuable as an early sign of tumour, for if we are to look forward to more frequent operations upon these cases, the earlier, within reason, they are undertaken the greater will be the likelihood of their successful termination either as palliative or radical measures.

[*The general pressure effects.*—Here followed a discussion of the ways in which pressure effects are transmitted—through circulatory stasis, through the intermediation of the cerebro-spinal fluid, and through dislocation and change of position of the cerebral or cerebellar hemispheres. External evidence of the intracranial stasis is often as apparent through distension of the veins of the scalp and of the eyelids as it is in the retinal vessels. The part played by the cerebro-spinal fluid is highly important, and the occurrence of a secondary hydrocephalus from ventricular obstruction may often elicit the first symptoms of pressure which consequently may be relatively sudden in onset. Many of our therapeutic measures hinge on the principle of cerebral dislocation. The brain under tension tends to protrude through any opening in the skull, whether made purposefully for decompression or whether normally present, as in the case of the foramen magnum. The herniation which occurs through this normal opening makes a lumbar puncture hazardous, particularly in cases of cerebellar tumour. Herniæ occur also through the minute openings for the arachnoidal villi, as pointed out by Wolbach.

The local pressure effects.—Illustrations were given of personal experiences with tumour localisation, emphasis being laid on the difficulties which arise in connexion with cases of long standing, owing to distant symptoms. A number of the most successful extirpations have been in cases operated upon at an early stage when symptoms were not entirely conclusive as to localisation—cases in which delay until the symptoms became more definite would probably have resulted in the disclosure of a growth which could not have been removed in its entirety.

---

[2] Observations on Choked Disc., &c., The Journal of the American Medical Association, 1909, vol. lii., p. 353.

[3] Alterations in the Colour Fields in Cases of Brain Tumour, Archives of Ophthalmology, 1909, vol. xxxiii., p. 451.

Comment was made in particular upon tumours of the pituitary body, not only in regard to their characteristic neighbourhood symptoms but also in regard to the symptoms which are thought to be due to involvement of the glandular portion of the hypophysis (pars anterior). Certain experimental observations on the partial removal of this portion of the gland have made it seem probable that the condition described by Fröhlich, from Frankl-Hochwart's clinic—namely, adiposity with sexual infantilism—is due to a deficiency of this portion of the gland (hypopituitarism). A successful case of partial removal of an hypertrophied pars anterior from a patient with acromegaly, with an apparent subsidence of certain of the symptoms of overgrowth, lends further support to the view advanced by others that the syndrome of Marie is probably brought about by a condition of over-activity of this part of the gland.]

PATHOLOGICAL ANATOMY.

The clinical diagnosis of a new growth often presents great difficulties, for both the general and local symptoms may be closely simulated by a formidable array of lesions; by vascular disease—thrombosis, embolism, aneurysm, and even apoplexy; by cerebral œdemas of one sort or another, especially those of nephritis, which in rare cases may actually give definite focal symptoms; by certain chronic inflammations, such as those of ependymal origin leading to the occlusion of some one of the foramina of outlet for the cerebro-spinal fluid; and lastly, by certain conditions in which a careful necropsy may fail to reveal any lesion whatsoever, though the antemortem symptoms, general and focal, were indistinguishable from those of a new growth—the group of so-called pseudo-tumours. These latter conditions are doubtless in many cases due to cerebro-spinal fluid disturbances—an œdema or serous meningitis—the presence of which may easily elude post-mortem notice, though often clearly apparent when the cranial chamber is opened during life. The difficulties, however, do not end with the clinical diagnosis: they follow us to the laboratory, where the gross and microscopical dissimilarity of the growths, even those which from a cellular standpoint are evidently allied lesions, makes a satisfactory terminology sometimes impossible.

We have had the good fortune to enlist in our studies the interest of Dr. F. B. Mallory, of Boston, the acknowledged authority on the cyto-diagnosis of tumours, and Dr. Charles J. Lambert, of the Pathological Institute of Ward's Island, who has made some illuminating investigations on the development of gliomata, and they have kindly corrected or confirmed our anatomical diagnoses. The tissues from 72 cases during the past few years have become available to us either through operation or necropsy, and have been subjected to this rigid examination, with the following result. There have been 47 gliomas (11 of them cysts either demonstrated to be, or presumably, of gliomatous origin and 2 gliopsammomas). There have been 5 endotheliomas, 1 sarcoma (metastatic), 3 carcinomas (metastatic), 3 primary epithelial tumours, 3 syphilomas, 4 tuberculomas, 1 dermoid cyst, 1 angioma, 1 osteochondroma, 1 osteoma, and 1 unclassified tumour (a papillomatous growth of the choroid plexus). In addition there have been 5 hypophyseal tumours (1 teratoma, 1 tuberculoma, and 3 adenomas). It was somewhat of a surprise to learn that 47, or 65·2 per cent., of these tumours were actually gliomata or gliomatous cysts. Many of these in the past would certainly have been classified under sarcoma, of which there has been but a single instance in our series, if we are to make a separate group of the benign endotheliomas. As Dr. Mallory has demonstrated, a clean-cut differentiation between a glioma and a sarcoma can at times only be assured by special stains of absolutely fresh tissues or, as Lambert has pointed out, by the examination of sections taken through the entire growth, for the histological diagnosis must hinge either on the demonstration of fibrils, the preservation of which may entail the immediate fixation of fragments of tissue in a fresh state only to be obtained by surgical removal or upon an elaborate study of the topographical arrangement of the cells disclosed by large sections. Many of our tumours which in the past would have been regarded as sarcomatous prove to be gliomata in which a large part of the growth is occupied by undifferentiated cells, there being only a few isolated areas where the characteristic glial fibrillæ are to be found. Furthermore, many of these gliomata do not assume the characteristic invasive form supposed to typify growths of glial origin, but are oftentimes definitely encapsulated. Contrary to our preconceived notion, therefore, they not infrequently lend themselves, as do the endothelial tumours of the meninges, to a simple enucleation. Many of them also tend to undergo degenerative metamorphosis, to become cystic or necrosed; an additional factor in favour of an early palliative operation, which may prolong life by warding off serious pressure symptoms and thus allow a greater time for some such process to occur.

OPERATIVE METHODS AND RESULTS.

There have been under my personal observation during the past six years 130 cases of tumour or presumed tumour, of which number 109 were subjected to operation or to repeated operations. Nearly one-half of this entire series—that is, 64 cases—have been seen and operated upon, as I have said, by Dr. Hener and myself during the past ten months; and it is particularly with reference to this latter group of cases treated on fairly definite principles that I wish to give operative statistics. There have been 84 operations on these 64 cases, whether for palliation, exploration, or tumour removal. A palliative subtemporal decompression has often preceded a deliberate search for the lesion and occasionally more than one such exploration has been necessary before the growth has been found.

Radical extirpations.—The lesion has been ultimately disclosed and the attempt made to remove a solid tumour or to evacuate and permanently drain a simple cyst in 23 cases (34·3 per cent.). Three of these operations were for large tumours, and were almost immediately fatal; three patients have subsequently died, one from a cerebral thrombosis, one from the continuance of a partially removed epithelial growth, and the third from a recurrence of symptoms due to a distant cerebral metastasis as shown post mortem. There remain 16 patients (25 per cent.) who have recovered with more or less complete restoration of function, which will probably be permanent in most of them. Fortunately, in several instances the lesion was disclosed in a relatively silent or mute area, so that no post-operative palsies whatsoever are left as tell-tales of the operation. It is for this reason that extirpations of cerebellar tumours are in the long run so much more satisfactory than when tumours are removed from important areas of the cerebrum, damage to which by the growth itself or during its surgical removal is apt to leave the patient more or less defective.

Palliative operations.—In 41 of the 64 cases (63·4 per cent.) the operation amounted either to a simple premeditated decompression (subtemporal or suboccipital) for unlocalisable or inaccessible tumours, or to an exploratory craniotomy combined with a decompression in case the expected lesion was not disclosed, or, if so, proved obviously too extensive for removal. Of these 41 cases death was immediately consequent upon the cranial operation or an associated lumbar puncture in five instances; 15 of the patients lived on for variable periods, some with considerable, others with but little if any improvement, until death supervened; 21 are still living, with symptoms in complete abeyance or so far alleviated that most of them have been able to resume their occupations and thus to earn a livelihood. A number of this latter group will in the course of time doubtless come to a radical operation in case localising symptoms supervene which will justify the attempt.

Thus, in the 84 operations on these 64 patients—and needless to say we do not include a two-stage performance as a double operation—there have been eight fatalities directly attributable to the surgical procedure (an operative mortality of 9·5 per cent.). There have been no infections or wound complications whatsoever. 16 cases after removal and 21 cases after decompression are, to be conservative, greatly benefited and a number of them probably cured, making a percentage of 57·8 out of the 64 patients that have regained, temporarily at least, a full measure of health.

Clinical statistics of this sort, based upon a single year's work, are, of course, not final, for doubtless a number of these patients may be enjoying a mere temporary palliation of symptoms and may require further operative measures in the future. Still, the total subsidence of all pressure phenomena after a successful decompression can always give hope of their final disappearance, for many tumours are slow-growing, and were it not for the usual pressure symptoms which they elicit might persist for years without jeopardising vision or life. The possibility, furthermore, always remains that the decompressive defect may give permanent relief, either by furnishing sufficient room for the progress of a slowly-growing tumour or by allowing time for degenerative processes to occur in tumours which tend to undergo these changes. A number of our older decompression cases remain alive and well at the present time, some of them six or eight years since their operation.

In view of our relative inexperience in this little-trodden field of surgery these figures are encouraging; and I doubt not that those from sources such as the National Hospital at Queen-square would be even more so were they available. The statistics from some clinics, however, are distinctly less favourable. Thus in his recent monograph Oppenheim records 27 operations performed by skilful hands on selected cases during the course of three years, with only 2 patients regarded as cured, 1 improved, and 6 much improved, whereas nearly one-half of them succumbed to shock, hæmorrhage, or other operative complications. He expressed the feeling that only 3 per cent. of all cases are surgically favourable, subtentorial lesions being regarded—contrary to our own experience—as particularly unsuited for operation.

In our recent series of 64 patients, all subjected to operation whether the condition seemed promising or otherwise, the eight surgical fatalities represent a direct loss through operation of 12·5 per cent. This, however, does not allow for the fact that of the 84 operations on these 64 cases the final procedure was undertaken in a number of instances as a desperate terminal measure when, at the end of a long period of improvement following a simple decompression, localising symptoms had become sufficiently definite to justify the attempt to disclose and remove the growth. It may be added, too, that several of these eight fatalities were the immediate consequence of a lumbar puncture with continous withdrawal of fluid during the operation in order to lessen the extreme tension which was present, and thus to permit of a more thorough exploration.

There are three more or less routine surgical procedures to which I wish to call attention: the first, a simple palliative measure—the so-called *subtemporal decompression.* It became known, through the earlier explorations for tumour, that the mere opening of the cranial chamber, though ineffectual from the standpoint of tumour removal, often gave symptomatic relief in an unlooked-for degree. Sir Victor Horsley in this country, and others in America, called attention to this fact some years ago, and the purposeful establishment of a defect in cranium and dura for the relief of pressure has gradually become accepted as an operation of undoubted therapeutic value. There are many ways of conducting it, good and bad.

In view of the principles both of dislocation and of herniation that I have mentioned, the brain will naturally protrude through the defect thus made, and the protruding area will consequently lose, from œdema and rupture of fibres, a large part of its physiological activity. Hence it is wise to make the opening over as "silent" an area of the cortex as possible. With this object in view Saenger favours the right parietal region, but a defect in this situation abandons the protruding portion of the brain to the protection of scalp alone, and in case of great tension separation of the recent wound may occur, with the dreaded fungus cerebri—a complication, I think, which by proper precautions can always be avoided. Even in the absence of this complication the protrusion, under these circumstances, may become enormous and most unsightly. It being desirable, therefore, to have a more secure protection for the hernia, the subtentorial region has been hit upon as the most favourable site, and it has now proved satisfactory in a long series of cases. The defect thus established overlies a "silent" area, and with due practice the opening can be made sufficiently ample to check the pressure symptoms of most cases.

With experience and proper tools this measure becomes, for a cranial operation, a comparatively simple one. After separating the fibres of the temporal muscle through a vertical incision the muscle on each side is freed from all attachments below the temporal crest by means of a periosteal elevator. The relatively thin underlying bone is entered with a burr and then rongeured away so as to leave a 5 or 6 centimetres defect, through which the dura may be freely opened. In case the exposed membrane should be so tense as to threaten injury to pia-arachnoid with cortical rupture as a result of opening it, the risk attendant upon a lumbar puncture may have to be taken. The withdrawal of fluid will usually lessen the tension sufficiently to enable the stellate incisions to be made to the margins of the bone defect without injury to the brain. The overlying soft parts are then carefully closed in four layers—muscle, fascia, galea, and skin. With due precautions the resulting deformity is unobtrusive and usually affords complete subjective relief from pressure symptoms with a rapid subsidence of the choked disc, though it may occasionally be necessary to make a corresponding opening on the opposite side. The measure is not adapted to subtentorial lesions nor to cases complicated by an internal hydrocephalus.

All told, we have had something over 120 decompressions of this kind, not only for tumour, but for the pressure disturbances of cerebral œdema due to other causes—traumatic, nephritic, and so on—and it has become a routine measure of the greatest practical value. It rarely confines the patient for more than a few days and does not require shaving of more than a small area of the head, which is easily concealed, particularly in women.

The second procedure is the *deliberate exploration for a growth* which can be localised with reasonable definiteness and which promises to be one that may be removeable. Here the opening must be made directly over the lesion—an undesirable situation for the simple decompressive measure, as the cerebral dislocation will sometimes lead to hæmorrhage or unusual œdema into the region of the growth and thus greatly increase the pre-existing tension. There are various methods of making the necessary exposure, it being our opinion, contrary to that which is held by authorities in this country, that an osteoplastic flap should be turned down and the bone replaced if possible. If the growth prove to be one which cannot be removed, so that the operator must withdraw, leaving the measure solely as a palliative one, the defect for purposes of decompression can then be made from inside out at the site of election under the temporal muscle while the osteoplastic flap is still reflected. In this way a bony protection for the hemisphere can be preserved with the usual subtemporal defect. This *combined exploration and decompression* has proved of great value in a number of difficult cases.

Cerebellar operations, the third of the routine procedures of which I wish to speak, are most satisfactorily made with a symmetrical exposure of both cerebellar hemispheres, necessitating a wide reflection of the suboccipital soft parts. The operation is an elaborate, tedious, and difficult one, but nevertheless the results have been even more favourable than in the case of the operations through the vault for cerebral growths. We prefer to conduct the operation through what has been called a "crossbow" incision, as wide an area of bone as possible being removed so as to expose dura from mastoid to mastoid and from lateral sinuses downward, including the posterior half of the foramen magnum, for here, owing to the inevitable foraminal hernia from the crowding of medulla and cerebellum into the spinal canal, is the actual seat of war. The dura should be opened near the foramen, the chief effort being made to get below the wedged lips of the cerebellum, so as to ensure at the earliest possible moment an escape of cerebro-spinal fluid. This, I think, is often the crucial step of the operation, for if a primary dural incision is made over the tense cerebellar hemispheres the rapid protrusion through the opening leads to rupture of the cortex, to bleeding, and to operative confusion at the outset.

The early escape of fluid, which can be thus secured in most instances, is followed by an immediate settling back of the tense cerebellum, which not only lessens the risk of medullary compression during subsequent manipulations but permits a wide opening of the dura and the subsequent satisfactory exploration for the lesion and its treatment in case it can be brought into view. A wide bilateral opening of this kind is desirable not only for this reason of giving early free access to the fluid confined in the basilar cysternæ, but also to allow for subsequent dislocation outward of the one hemisphere, while the recesses of the other are being explored for the growth. The wounds in all of the cases have been closed without drainage, and with the exception of an early case in which there was a pressure slough from a stiff bandage, healing has invariably been without complication.

I have had, all told, 35 of these suboccipital operations, a number of them naturally resulting in simple decompression in case the lesion was not found or in case it proved to be of such a sort that its removal was out of the question. In these 35 cases there have been 4 deaths, one of them my first operation for a cerebello-pontine tumour which resulted fatally from a post-operative pneumonia owing to the fact that we did not at that time possess a table with shoulder-supports to ensure free breathing in a face-down position. A second case died from hæmorrhage during the manipulation of what proved to be an exceedingly vascular tumour arising from the region of the corpora quadrigemina and giving cerebellar symptoms. A third promptly succumbed, with a temperature of 108° F., the necropsy showing a condition of status lymphaticus. The fourth patient, a child, was long thought to have simple idiopathic hydrocephalus and had been treated on this basis for a number of years. The operation disclosed a gliomatous cyst, but as one of its walls showed evidence of a layer of remaining gliomatous tissue an attempt, which proved too venturesome, was made to extirpate it, and death occurred a few hours after the operation.

In 14 of these 35 suboccipital operations the tumour was not found, and the procedure was abandoned as a simple decompression with the usual degree of palliation. (Two of the patients have been subsequently operated upon ; a cyst was found and evacuated in one case and in the other a solid tumour removed.) In 15 of the cases (42·7 per cent.) the tumour was disclosed at the first operation ; of these, in 4 the lesion proved to be a more or less encapsulated intracerebellar tumour which was extirpated ; in 6 a cyst was evacuated or a portion of its wall removed ; 4 were benign, extracerebellar, lateral-recess endotheliomata, which were wholly or partially removed ; 1 was an occipital osteoma with cerebellar symptoms ; in 2 the lesion was considered irremoveable, and there was little, if any, post-operative improvement.

Thus, in this group of 35 cerebellar operations there have been four operative fatalities (11·4 per cent.), 13 successful extirpations or cyst evacuations (37·1 per cent.), 14 operations abandoned as decompressions (40 per cent.) with complete abeyance of symptoms in many instances, and two cases (5·7 per cent.) in which practically no betterment occurred. In view of the fact that cerebellar tumours are regarded by many as particularly unfavourable for operation these figures are encouraging, and we may hope for a still better showing in the future when surgical treatment will be instituted at an earlier period of the disease. Even with our recent improvement in this respect the fact that 12 of these 35 patients were blind, or nearly so, at the time of operation shows how dilatory we still are in these matters.

In closing I may be permitted a word of admonition. Intracranial surgery from a technical standpoint is unlike all other forms of surgery in that the delicate structures involved cannot be handled with sponge and clamp and ligature as can the tissues of the body with which the surgeon is more familiar. It is far easier to do harm than good by the rough and rapid operative measures so commonly employed. Familiarity with special methods of manipulating a brain under tension, of controlling hæmorrhage from the cerebral substance without insult to the tissues, of avoiding operative injury to the pia-arachnoid until actual extirpation is attempted, and countless other details which should be mastered first by operations upon the brain of animals are essential to success in this work.

Difficult though it may often be, the craniotomy itself is the least important element in the operation ; and though our surgical text-books for the most part dwell solely upon the methods to be employed in entering the cranial chamber, the vital elements are what may happen to the contents of the chamber while we are making the entry and how they are to be handled when the opening has been made.

Earlier diagnoses and more prompt interference, a wider experience in overcoming the technical difficulties of these cases, coupled with the courage to work slowly and painstakingly, these things will lead to increasingly better results in this responsible work, the success of which depends so greatly upon detail, patience, and the expenditure of time.

THE NATIONAL ANTI-VIVISECTION HOSPITAL.—At a special meeting of the board of management of the National Anti-Vivisection Hospital, Battersea General Hospital, held on Friday, Dec. 31st, 1909, to consider the comments of the coroner and juries' verdicts at the late inquests held at the Battersea coroner's court on Tuesday, Dec. 28th, 1909, it was decided that a statement should be issued by the board after its next monthly meeting to be held on Thursday, Jan. 6th.

SOME CASES OF CONGENITAL INTESTINAL OBSTRUCTION.*

BY N. I. SPRIGGS, M.D., B.S. LOND., F.R.C.S. ENG.,
LATE HOUSE SURGEON AND OBSTETRIC RESIDENT, GUY'S HOSPITAL.

THE following cases were collected by the writer with the idea of embodying them in a thesis on the subject. Upon looking up the literature, however, it was found that a recent paper by Mr. H. J. Clogg[1] deals with the same subject, and covers the ground fairly completely. This paper has been freely utilised below. The following seven cases, two of which came under the notice of the writer clinically, were, however, thought to be worth recording.

CASE 1. *Septum in ileum.*—The patient, who was admitted into Guy's Hospital under Mr. Charters J. Symonds in March, 1905, was an ill-nourished child 5 days old. There had been continuous vomiting since birth. One motion was said to have been passed; this was described as not greenish and as slimy, and was therefore probably only mucus. Progressive distension of the abdomen had been present, and was well marked on admission to hospital. The finger could be passed through the anus, but experienced some resistance in the rectum. However, firm pressure enabled nearly the whole length of the little finger to be inserted and the tip of this could be felt through the abdominal wall in the left inguinal region. Small soap, saline, and glycerine enemata were tried, but were at once returned. A catheter was passed per rectum, but could be got up no higher than the finger. No trace of meconium was seen either in the returned enemata or on the finger. Congenital intestinal obstruction above the rectum was diagnosed, and it was decided to explore, though extremely faint hopes of recovery were entertained. Upon the abdomen being opened very distended coils of intestine were discovered, and the bowel was found to end blindly in a large cul-de-sac. This was brought out through the abdominal wall, fixed with a few stitches, and then drained with a small Paul's tube. Much dark-looking matter at once came away. Very little chloroform was administered, but the child was suffering from severe shock at the end of the operation. This could not be concluded as quickly as desired, as some difficulty was experienced in replacing into the abdomen the coils of very distended bowel. In spite of the vigorous exhibition of stimulants, and the infusion of saline, the child died eight hours afterwards.

At the necropsy a complete septum was found across the ileum a few inches above the ileo-cæcal valve. This septum was covered by mucous membrane on either side. No trace was found of any peritoneal adhesions. All the small and large intestine below the obstruction was contracted and very small, being of about the diameter of a goose-quill. The rectum appeared normal as far as the finger had been passed up, but the sigmoid above this was of the same calibre as the rest of the contracted large intestine. No meconium was present below the obstruction. No other congenital defect was found.

FIG. 1.

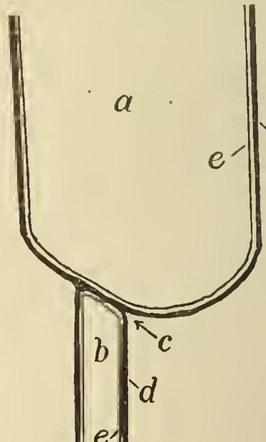


Diagram to show relative sizes of the bowel above and below the obstruction in Cases 1 and 2. *a*, Bowel above obstruction. *b*, Bowel below obstruction. *c*, Septum obstructing bowel. *d*, Muscular coat of bowel. *e*, Mucous coat of bowel.

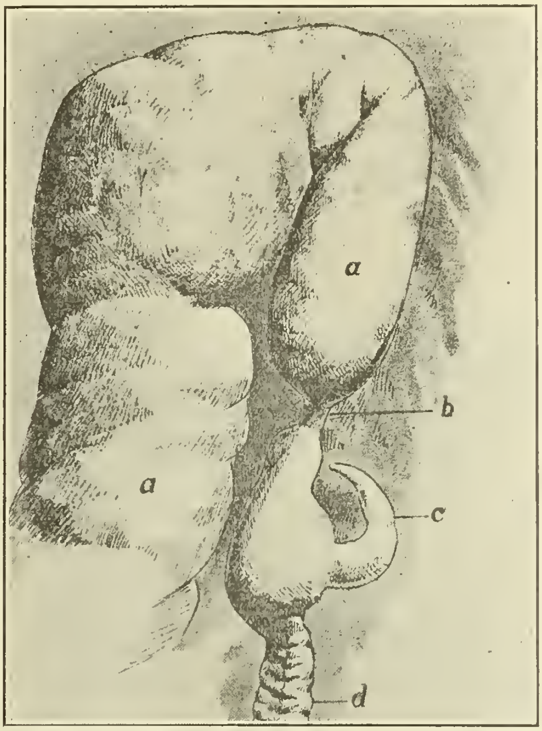
CASE 2. *Atresia of ileum.*—An infant, aged one day, was admitted to Guy's Hospital under Sir (then Mr.) Henry Howse in November, 1900. The report of this case is very scanty, so that memory alone has to be relied on for some of the details. There had been vomiting since birth, and no motion had been passed. A finger was inserted per rectum, and it was believed that "a fibrous mass" or obstruction of some sort could be felt 1 inch up the bowel. This was "partially broken down," to use the words of the report. It was considered possible that the gut might have been ruptured. The next day, as vomiting of slimy green material continued, the abdomen was explored and the colon was "found to be undeveloped." A distended coil of small intestine was therefore fixed in the wound and opened. The child did well at first but later sank and died ten days after the operation.

---

* A paper read before the Shropshire and Mid-Wales Branch of the British Medical Association at Shrewsbury. (The superior figures in the article refer to the bibliography printed at the end of the paper).

At the necropsy there was some purulent peritonitis though not generalised. The small intestine was found to end in a blind cul-de-sac 29 inches below the pylorus. The enterostomy wound was an inch or two above this. All the intestine below the obstruction is described as being of the thickness of a clay-pipe stem. There was no communication whatever between the distended and collapsed part, though the latter was pervious right up to the obstruction. There was no trace of any old peritoneal adhesion over the site of the obstruction. There was no other congenital abnormality, except that the foramen ovale was found to be widely patent.

FIG. 2.



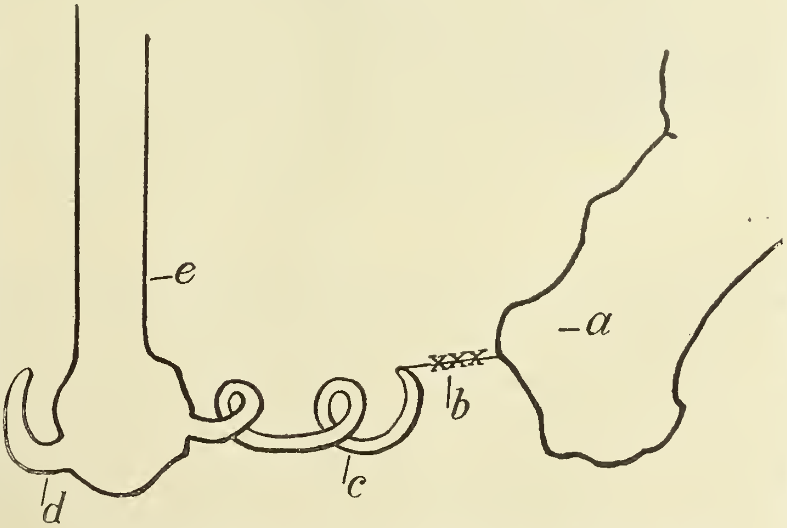
Case 3. *a*, Dilated lower ileum. *b*, Fibrous band at seat of obstruction. *c*, Appendix. *d*, Colon.

CASE 3. *Atresia of ileum.*—An infant, aged 4 days, was admitted into the Hospital for Sick Children, Great Ormond-street, on April 1st, 1900, under Mr. T. H. Kellock. There had been continuous vomiting, both after food and also when no food had been given, since birth. The ejected matter had been brown and very offensive for the last 24 hours. The abdomen was distended on admission. Laparotomy was performed and the distended coils of small intestine were traced down to an obstruction in the ileum. The bowel was drained with a Paul's tube, but the child died soon after.

Post mortem the bowels were very distended and so injected as to appear almost black. The ileum came suddenly to an end three-quarters of an inch above the cæcum. A short fibrous band about a quarter of an inch long connected the blind end with the bowel below. The bowel above the obstruction was filled with gas and meconium, and the large intestine below also is said to have had a little meconium in it. The mesentery at its attachment to the bowel was filled with blood. The large intestine was apparently normal in structure. At the point of stricture there was a break in the peritoneal covering of the bowel which was not continued over the fibrous connecting band.

CASE 4. *Atresia of ileum with loss of continuity of bowel.*—An infant, aged 4 days, was admitted to the Hospital for Sick Children, Great Ormond-street, under Mr. F. J. Steward, on Oct. 3rd, 1904. There had been no motion since birth, and there was continuous vomiting of black-looking material. The anal canal would admit the tip of the little finger, and was found to end blindly about three-quarters of an inch up. Above this a protruding rounded, rather hard mass could be felt, which bulged downwards when the child cried. This mass was explored with a trocar and cannula without result. An incision was also made backwards from the anus without finding the rectum. Later this incision was enlarged, and after considerable difficulty and the loss of much blood an open end of the bowel was found and stitched to the margin of the wound. This bowel contained no meconium, and was contracted, so that it was very difficult to stitch. The infant died in five hours.

FIG. 3.



Case 4. *a*, Dilated bowel above break. *b*, Absence of bowel, free edge of mesentery. *e*, Contracted ileum below break. *d*, Vermiform appendix. *e*, Ascending colon.

At the post-mortem examination 7 ounces of blood were found in the peritoneal cavity. 39 inches below the pylorus the bowel was found to end in a blind sac of the size of a small goose egg. Lying coiled up on the inner side of the cæcum was what looked like an extra appendix 6 inches long. This proved to be the lower end of the small intestine, which was completely separated from the distended upper portion. There was no trace of any connexion between the two blind ends, the peritoneum having a free edge. The large intestine was collapsed and of small diameter and contained a little turbid mucus only.

CASE 5. *Multiple atresiæ of the jejuno-ileum.*—An infant, aged 5 days, was admitted to Great Ormond-street Hospital for Sick Children under Mr. W. Arbuthnot Lane. On admission the infant was moribund, with fæcal vomiting. This child was said to have passed seven stools, all whitish-yellow, one of them containing a little blood. The abdomen was hurriedly explored without result, and the infant died next day.

At the necropsy the bowel was found to be cut up into divisions, with intervals containing a thickened free edge of mesentery in place of the gut. The first break was 10 inches below the pylorus and 2 inches long; then came 3 inches of bowel followed by a half inch gap; and to this succeeded 6 inches of gut followed by yet another break. In other parts the bowel was very much constricted without being quite absent, so that there were different degrees of development present. The interesting specimen from this case, as also that from Case 3, may be seen in the Museum of the Hospital for Sick Children, Great Ormond-street. A similar case to that just related, only showing more points of constriction and occlusion, has lately been reported by Emanuel.[2]

CASE 6. *Atresia of the duodenum.*—An infant, aged 3 weeks, was admitted into Great Ormond-street Hospital on Sept. 29th, 1902, under Dr. F. E. Batten. There had been vomiting, about ten minutes after food, since birth, and also progressive wasting. The vomit was in considerable quantity, with much green mucus. The bowels had been moved, only meconium being passed. The child died on the day after admission.

On post-mortem examination the stomach was found to be much dilated, as was also the duodenum, which was found to end abruptly at the point of entrance of the bile-duct. The latter was dilated, admitting the head of a probe. The stricture was quite complete and impermeable to air and water. The stricture cut firmly and seemed to be of a fibrous nature. The stomach and duodenum were filled with green fluid, with some curds. The intestine below the obstruction was collapsed and contained dark green mucus.

It is impossible to discover for certain from the post-mortem notes of this case whether the bile-duct opened into the upper or lower segment of the bowel. Most probably it was into the upper segment, in which case we may note that the intestinal contents below are described as "dark green mucus," and the child is said to have passed "meconium." If the obstruction occurred during the latter half of fœtal life, after the development of the liver, we might expect to get bile in both the upper and the lower segments.

CASE 7. *Obstruction due to an abnormal arrangement of the mesentery.*—An infant, aged 39 hours, was admitted into the Evelina Children's Hospital on Oct. 9th, 1904, under Mr. C. H. Fagge. No normal motion had been passed, and there had been vomiting of greenish-brown material since 15 hours after birth. On admission the infant was in a very bad condition, with a distended abdomen and almost imperceptible pulse. A finger was introduced 1½ inches up the rectum, which felt normal. The abdomen was opened in the left inguinal region, and as nothing like normal large intestine could be found a coil of dilated small intestine was opened and drained with a Paul's tube. Much thick meconium escaped. The child died shortly afterwards.

Post mortem the bowel was found to have been opened near the middle of the ileum. Above the opening the gut was almost empty, but below it was distended with meconium. The mesentery was absent from the last $1\frac{1}{2}$ inches of the ileum, and this and all the large intestine were retroperitoneal. At the point where the peritoneum became absent the bowel diminished in diameter from $1\frac{1}{2}$ inches to $\frac{1}{3}$rd inch. About 4 inches above the ileo-cæcal valve the small intestine had ruptured. The large intestine only contained white, soft, cheesy material. There were no signs of fœtal peritonitis, nor was any septum or valve found at the site of obstruction.

REMARKS.

The number of these cases is, of course, too small for any definite conclusions to be based on them alone, but they will serve to illustrate some of the more important points in the pathology of this condition.

Morbid Anatomy.

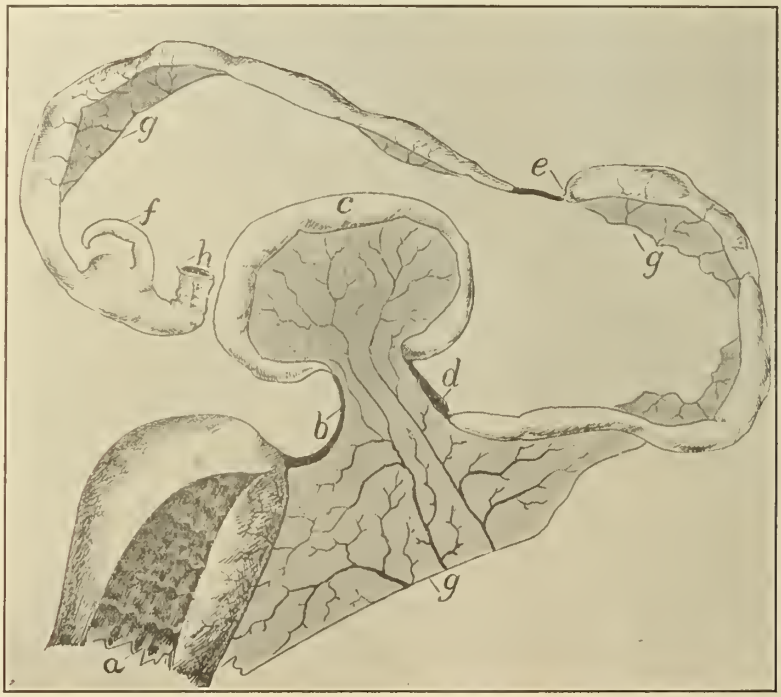
1. Congenital intestinal obstruction is most often *complete*, as in all the above cases except the last.

2. It is also generally *single*, as in four of the above cases. In Case 5 three atresiæ were present, and in Case 4 an imperforate anus coexisted.

3. The *position* of the break is most often in the lower ileum. The next site in order of frequency is by the biliary papilla. These points are well illustrated above.

4. The *obstruction itself* may be: (*a*) in the form of a septum, often obliquely placed, as in Cases 1 and 2. Such a septum is generally covered by mucous membrane on each side, and the circular muscular coat of the bowel has been shown to be prolonged into it.[3] This point is of some interest as such septa have been regarded by some as simply hypertrophied valvulæ conniventes, which contain no muscular fibres. (*b*) More rarely there is a longer or shorter fibrous band connecting the ends of the bowel at the site of the obstruction, as in Case 3. In such a connecting band glands and muscular tissue have been demonstrated,[4] giving some indication of the origin of the band. Also very rarely such a band has been found to be canalised. (*c*) As a further stage of separation the ends of the bowel may have no connexion at all, and may even be found in different parts of the abdomen; or they may be connected only by the free edge of the mesentery as in Case 4.

FIG. 4.



Case 5. *a*, Dilated ileum cut open. *b*, First break in continuity of bowel. *c*, Contracted bowel. *d*, Second break. *e*, Third break. *f*, Appendix. *g*, Cut edge of mesentery. *h*, Contracted colon.

5. *Condition of the bowel above and below the obstruction.*—The outstanding and most important feature of these cases, both pathologically and surgically, is the very contracted condition of the bowel below the obstruction. Above the latter the gut is, of course, much dilated, as it is in acquired forms of obstruction, but the intestine below is in no way comparable to the collapsed bowel seen below an acquired obstruction, as it is not merely collapsed but firmly contracted up, never having functionated. Thus we find it described as being of "the thickness of a clay pipe stem" or as "worm-like bowel." The latter term perhaps best describes its appearance.

The *content* of this contracted bowel is a little mucus, very thick and tenacious, so that considerable force is required to move it on. It is doubtful whether the natural forces are ever sufficient for this purpose, even if the obstruction be removed by operation. Sometimes the content of the bowel more nearly resembles normal meconium, even when no bile has ever reached that part of the intestine. Quite frequently normal meconium is said to have been passed, as in Emanuel's case, already quoted,[5] where five blocks existed. Again, in those rarer cases where a block exists *above* the biliary papilla, we find it stated that meconium was vomited, as in a case quoted by Galton.[6] It thus appears that bile is not a necessary constituent of meconium, as that term is ordinarily used, but that the intestinal, or even the gastric, secretions may present a similar appearance. Rolleston[7] says that in congenital obliteration of the bile-ducts normal meconium is passed soon after birth. Foster[8] speaks of meconium being found in the body when the liver is absent.

In Case 1 an attempt was made at the post-mortem examination to dilate up some of the contracted bowel; and it was found that this could be done by water pressure, the gut then assuming an almost normal appearance. The personal view of the writer is therefore that in many cases the walls of the so-called undeveloped bowel are approximately normal in structure, and that the gut is suffering more from want of distension than from want of development. Rarely the walls of the bowel above the obstruction are said to be thickened.[9] This we should not expect, the bowel having never been functionally active. In some cases there is a real defect of development, apart from the obstruction itself, as in certain parts of the bowel in Case 5.

The intestine *above* the obstruction is, as we should expect, filled with meconium, usually of a very dark colour, sometimes from hæmorrhage into it. Also hæmorrhage into the stomach has often been reported in these cases, and may account for some instances of so-called bilious vomiting. Hæmorrhage into the mesentery has also been observed.

6. *The peritoneum.*—In most cases this is apparently normal, even over the constricted part. In Case 7 the chief deformity appears to have been in the mesentery, there being no real occlusion of the bowel anywhere. No other case has, to my knowledge, been recorded like this. Pearce Gould[10] records a case in which the bowel was filled with some white material definitely stated to be mucus, which was apparently the sole cause of the obstruction. The writer has come across the reports of two other cases very similar to this, and has seen a third, so that it is evident that rarely the inspissated mucus alone is sufficient to cause a block in the intestine with fatal result.

7. *Other congenital defects* are generally absent. In Case 2 the foramen ovale was found widely patent at death (at the age of 12 days). In Case 4 an imperforate anus coexisted.

Etiology.

There are two main views: (1) the developmental and (2) the inflammatory.

1. The developmental view was put forward by Meckel [11] and developed and popularised by Bland-Sutton,[12] who holds that occlusion of the alimentary tract always occurs at the site of an "embryological event." An imperforate rectum results from the proctodæal invagination failing to reach the hind gut. An imperforate pharynx can be similarly explained, and by an excess of closure where the liver is formed as an outgrowth from the primitive intestine an imperforate duodenum may result. An imperforate ileum similarly indicates an excess of closure at the place of attachment of Meckel's diverticulum.

The following facts support this view: (1) the commonest situations of such obstructions agree with it; (2) in one case reported a duodenal septum was almost certainly due to a kind of hypertrophy of the biliary papilla;[13] (3) three specimens were exhibited years ago at the Pathological Society by Hudson [14] showing various stages of narrowing of the bowel, all at the situation of the attachment of Meckel's diverticulum; (4) this deformity is most often single; (5) the peritoneum generally appears normal; and (6) similar obstructions in the rectum and pharynx are, by common consent, of congenital origin.

2. According to the *inflammatory view* of the production of this deformity, the obstruction is caused by adhesions or cicatricial contractions following fœtal peritonitis. This view was ably supported by Theremin [15] who published an exhaustive article on the subject in 1877 and collected practically all the then recorded cases. In favour of this view may be urged: 1. Fœtal peritonitis undoubtedly occurs and the fœtus may recover from it and the peritoneum show very little sign. Fœtal ascites has been found associated with non-development of the large bowel. Adhesions in adults often disappear almost completely, and probably do so in children and fœtuses more readily still. 2. The obstruction may not be in the situation of an "embryological event" of Bland-Sutton. Thus in seven cases of duodenal obstruction collected by Perry and Shaw[16] only three were by the biliary papilla. Case 5, with three distinct blocks obviously cannot be accounted for by the developmental view as described above. Also a specimen has been shown with two distinct septa in the middle of the jejunum.[17] With regard to the alleged fœtal peritonitis, we may note that it is practically never possible to find signs of syphilis in these cases, and that other evidence of peritonitis, besides the lesion, is generally wanting. It may be, also, that the obstruction was the cause of the slight signs of localised peritonitis found in some cases, and not the effect, as has generally been assumed.

Other views are held as to the causation of this lesion.

3. A fœtal *volvulus*, or even a simple *twist*, sometimes causes a stricture. Specimens of fœtal volvuli have twice been shown at the Pathological Society,[18] and more often have been found in young infants.[19] These volvuli are sometimes formed at the place of attachment of a tag of omentum or of a persistent Meckel's diverticulum. The formation of a volvulus may account for a large loop of gut being missing—i.e., it has been cut off by the strangulating process. A volvulus caused by a persistent diverticulum is, of course, developmental in origin, so we come round again to Bland-Sutton's view. In looking at the specimen of Case 3, in which a short band intervenes between the ends of the gut, the most natural explanation seems to be that the bowel has been twisted at this point. Another fœtal accident is that a loop of bowel may get strangled, and perhaps cut off in one of the hernial orifices, as in one of Clogg's cases. Emanuel explains his case, with many atresiæ, as being due to partial volvuli, and Case 3 may possibly be explained the same way.

4. *Other causes*, or supposed causes, of this condition are—intussusception, contraction from ulceration, embolism or thrombosis of the mesenteric vessels, and enlarged valvulæ conniventes.

In *summing up* the etiology of this condition we may state with certainty that no one theory can by any stretch of the imagination be made to cover all cases, but that the majority are due to errors of development. Others are due to what we may term fœtal accidents (volvuli, torsions, or strangulations), whilst a minority are due to preceding peritoneal inflammation. Turning to the seven cases reported above, 1 and 2 support the developmental theory, and in Case 3 an accidental twist seems to have occurred. Case 4, in which a length of the bowel is missing, may be due to either a volvulus or an excess of closure of the vitelline duct. Case 5 may be due to volvuli, Case 6 is uncertain, and, finally, in Case 7 the trouble appears to have been due to deficient development of the mesentery. Of the above cases, therefore, three are almost certainly developmental in origin, four are probably so, and all quite possibly, whilst none bear any irrefutable evidence of an antecedent peritonitis.

Diagnosis.

In most cases the cause of the obstruction has not been diagnosed. Firstly, it should be ascertained whether there is any obstruction about the anus or rectum. In one of the above cases an imperforate rectum coexisted with the atresia higher up, and in another the resistance in the rectum, due to undilated bowel, suggested obstruction there and caused a day's delay in operating. The rectum having been proved to be normal, or at least not obstructed, there should be no great difficulty in coming to the conclusion that the obstruction must be due to some congenital deformity higher up.

The excessive rarity of these cases is a great hindrance to their early diagnosis. The series of cases on which the papers alluded to here were based, were collected during many years from the enormous clinical material at large foundling hospitals abroad. Thus Theremin [20] says that there were 9 cases in 150,000 post-mortem examinations in such a hospital at St. Petersburg, and there were only 2 in 11,000 necropsies in a Vienna foundling hospital. Cordes [21] collected 57 cases of occlusion of the duodenum alone, and as this is not the most frequent situation it is probable that if a systematic post-mortem inspection of newborn and stillborn infants were made in England many more similar cases would soon be reported in this country. With the above figures before us the average practitioner may perhaps be excused for failing to recognise the nature of such a case if he does happen to come across it.

Vomiting is usually the most marked feature and is present from birth. In those cases in which the child lives long enough the vomit becomes very offensive. Sometimes it is described as black, probably owing to admixture with blood. The significance of so-called bilious vomiting has already been alluded to.

Constipation is usually absolute, though not always, as the lower bowel may empty itself of its contents. The motion is generally thick mucus, perhaps tinged with brown or green. If the obstruction is above the biliary papilla, normal meconium may be passed and the gastric symptoms are more prominent. Also when the obstruction is below the biliary papilla, the motions have sometimes been described as meconium though then generally consisting entirely of intestinal secretion. The non-appearance of normal meconium after repeated enemata would be a strong point in favour of some congenital obstruction.

Abdominal distension develops in the course of the first day or two.

All these symptoms may be greatly modified if the obstruction is only partial, but this is very much more rarely the case.

Congenital hypertrophic stenosis of the pylorus has of late been much brought before the notice of the profession, and might possibly simulate obstruction lower down. In the former the symptoms are not so severe and do not usually develop till the second or third week. Sometimes, also, the hypertrophied pylorus can be felt through the abdominal walls.

Presumably *any form of acquired obstruction*—i.e., intussusception, volvulus, internal hernia, &c.—may occur within a day or two of birth. Judging from the reports of a considerable number of cases of obstruction in young infants which I have looked through, such an accident at such an age would be even rarer than the congenital obstruction with which we are dealing.

Prognosis.

The prognosis is absolutely bad. In such a condition no hope can be entertained apart from surgical interference, and as yet no case of recovery after operation has been recorded. Letoux [22] in 1903 stated that 32 operations for this condition were on record, and since then many more must have taken place. Entero-anastomosis for this condition has been recorded six times (Clogg). Had any such case recovered it would almost certainly have been published.

Treatment.

In the face of the above facts it will be a matter of opinion whether or not any operative procedures should be undertaken. Probably, if the unfortunate infant happens to be born in an institution, or in connexion with some maternity charity, where surgical help is readily available, it will be subjected to operation, whilst if it is not thus situated it will be allowed to die untampered with. If operation is decided upon, to give the child its only possible chance, two lines of treatment are open: (1) to perform enterostomy above the obstruction and so drain the distended bowel, as was done in Cases 1 and 2; and (2) to do some kind of entero-anastomosis, so connecting up the intestine above with that below the obstruction. The difficulties of this procedure are exceedingly great on account of the contracted state of the bowel below, but it is the operation of choice if the infant is seen when in good condition. Clogg suggests that an attempt might be made at the operation to distend the contracted bowel by water pressure, and in my opinion this is worthy of trial, and would certainly offer the best chance to a child.

If the operation is only undertaken when the child is very feeble from the effects of the continued obstruction, as is generally the case, the first line of treatment—i.e., simple drainage of the distended bowel—should be undertaken as quickly as possible, perhaps with only local anæsthesia. If the obstruction is not too high up in the small intestine, so that there is a considerable absorbent surface left functionating, the infant may recover somewhat in the course of a few days, and then entero-anastomosis may be undertaken with a better chance of success. In the case of duodenal obstruction simple drainage cannot be performed and gastro-enterostomy is the only line of treatment. No case of operation for this condition has, I believe, been yet recorded, but Mr. Arbuthnot Lane has operated on such a case. Gastro-enterostomy was performed and an attempt was made to squeeze on the gastric contents through the contracted bowel below. The infant was very weak at the time of the operation and died soon afterwards.

In conclusion, I should like to express my indebtedness to the surgeons and physicians on the staff of Guy's and Great Ormond-street Hospitals for their courtesy in allowing me to use their cases.

Bibliography.—1. The Lancet, Dec. 24th, 1904. 2. British Journal of Children's Diseases, October, 1905. 3. Champneys and D'Arcy Power: Transactions of the Pathological Society, vol. xlviii., p. 79; and Buchanan, ibid., vol. xii., p. 121. 4. Martens: Deutsche Zeitschrift für Chirurgie, 1900. 5. Loc. cit. 6. Transactions of the Pathological Society, vol. xii., p 101. 7. Diseases of the Liver, p. 647. 8. Text-book of Physiology, vol. iv., p. 1527. 9. Davies Colley: Transactions of tho Pathological Society, vol. xxix., p. 115. 10. The Lancet, May 6th, 1882. 11. Manual of Descriptivo and Pathological Anatomy, vol. ii., p. 384 (English translation). 12. International Journal of the Medical Sciences, 1889. 13. Perry and Shaw: Guy's Hospital Reports, 1893. 14. Transactions of the Pathological Society, vol. xl., p. 98. 15. Deutsche Zeitschrift, 1877. 16. Loc. cit. 17. Transactions of the Pathological Society, vol. xxxviii., p. 145. 18. Cripps: Ibid., vol. xxii., and G. N. Pitt, ibid., vol. xlii., p. 123. 19. Carwardine: Brit. Med. Jour., vol. ii., 1897, and Craig, quoted by Clogg, loc. cit. 20. Loc. cit. 21. Archives of Pediatrics, 1901. 22. Bulletin de la Société Anatomique de Paris, 1903.

Shrewsbury.

ON THE NATURE AND TREATMENT OF ANGINA PECTORIS.[1]

By ALEXANDER MORISON, M.D. Edin., F.R.C.P. Lond. and Edin.,
SENIOR PHYSICIAN TO THE GREAT NORTHERN CENTRAL HOSPITAL.

On the suggestion of the energetic medical secretary of the Harveian Society I agreed to write a short paper on the Nature and Treatment of Angina Pectoris in the hope that a useful discussion might take place upon a subject which, notwithstanding the attention which has been paid to it, never seems to lose interest. This is doubtless due to the fact that angina pectoris often runs a tragically fatal course, and because, great as has been the ingenuity exercised in the endeavour to elucidate its nature, no explanation yet advanced has been accepted as fully explanatory even of cases which appear clinically to belong to the same class. The various guesses at truth in this connexion have recently been set forth with lucid brevity amd yet comprehensively by Sir Clifford Allbutt when he opened a debate on the subject at the Belfast meeting of the British Medical Association, on which occasion he also again stated his now well-known view which places the site of the chief sensory phenomena in the suprasigmoid portion of the aorta. Heberden, who so well originally described the condition, states in his commentaries that he had met with about 100 cases. Stokes of Dublin, in his classical work, affirms, on the other hand, that, excluding cases of cardiac asthma, as he terms them, with thoracic distress, he had himself never met with a single case of what he understood angina pectoris to be. So remarkable a statement by one of Stokes' experience points to the necessity of a clear conception of what we understand by the term. It is an interesting fact in connexion with this statement of Stokes that the Registrar-General's returns show a disproportionately small death-rate from angina pectoris in Ireland as compared with that occurring from the same cause in England and Scotland. If we use the term in a comprehensive sense, as including all forms of cardiac pain associated with endocardial, myocardial, and pericardial states, the affection cannot be said to be of rare occurrence. If, however, we exclude cases in which the disturbed conditions due to disease of the valves are apparently active in provoking the phenomena of angina, the number of cases of that affection met with by any single observer is not by any means so great, and Stokes, I therefore think, must have distinguished sharply between the two kinds of cases when he concluded that he had never seen one. He must have felt inclined to limit the term to those cases in which the clinician discovers little amiss with the heart on auscultation and percussion, but in which, as Heberden describes it, pain, more or less severe, may arise, it may be suddenly, and also, in some cases, prove rapidly fatal. But I do not think we can now use the term in so restricted a sense, and Heberden with his 100 cases could certainly not have done so, as the clinical diagnosis of a particular lesion, except after death, was not in his day a developed science.

Angina pectoris may, therefore, for our purpose be defined as a painful affection of the heart as a whole, dependent upon disorganisation in the anatomical character, or disorder in the physiological function of one or more of the factors in cardiac action, and associated, in some cases in a marked degree, with the fear of impending death. When I speak of the heart as a whole, and of the factors in cardiac action, I mean the cardiac musculature, innervation, blood-supply and blood-content of the organ. I am aware that in speaking thus I venture to disagree with those who suggest a single key to the solution of the problem of the nature of angina pectoris. Huchard, for example, says there is only "one angina—coronary angina." It behoves me, therefore, as briefly as possible, to endeavour to justify my contention that angina pectoris may take its origin in more ways and in more situations in the heart than one. In discussing a question which has exercised so much thought, and led to so many different conclusions, I wish to do so without dogmatism, and think I can best make the attempt to lay my own views before the society within the limits of time imposed upon me by very briefly giving, by typical cases, the data on which I base my opinion. I select them from notes of about 50 cases, observed by myself, which are conveniently at hand.

Case 1.—A male, aged 20 years, suffered from severe attacks of pain over the heart, passing up to the right shoulder and down the right arm, being particularly felt at the tip of the right little finger. He had also frequently experienced pain of an acute and continuous character at the lower end of the sternum. He exhibited a double thrill on palpation over the second and third left rib cartilages, a double murmur of harsh character in the same situation, and a systolic bruit at the apex which was not traceable outwards to the left. The patient died, and on post-mortem examination showed gross lesions of the pulmonary arterial valves, the base of the pulmonary artery, the tricuspid valve, and the septal wall of the right auricle.

Case 2.—A male, aged 59 years. He had complained of "wind in the stomach" and been treated for dyspepsia for some months. He had occasional attacks of severe pain in the chest, associated with aching of the right shoulder and wrist, the latter also being affected with a sense of coldness. Pain was induced by exertion. The heart was normal in position and action. Impulse was slightly increased. The kidneys were normal. He was seen on one occasion (Feb. 28th, 1905); a diagnosis of angina was made and instructions given accordingly. He died suddenly at a railway station ten days later, after a refreshing night's sleep, simple breakfast, and quiet walk to the train. There was, I understand, no necropsy.

Case 3.—A male, aged 59 years. He had severe pain at the lower end of the sternum radiating down the left arm. There was contiuuous pain from 8 P.M. on Jan. 22nd till 7 P.M. on Jan. 23rd, when the patient died. He was admitted collapsed to the Great Northern Central Hospital and placed in a surgical ward as a possible case of ruptured gastric ulcer. On post-mortem examination there was a partially decolourised thrombus in the right coronary artery and fatty degeneration of the heart; there were no other conditions discernible to account for the symptoms. It was stated that the patient had occasionally had attacks of angina of a less severe character prior to his last and fatal attack.

---

[1] A paper read before the Harveian Society on Nov. 25th, 1909. The discussion on this paper will be found in The Lancet of Dec. 9th, 1909, p. 1670.

CASE 4.—A male, aged 48 years, short and stout. He had severe pain in the chest. The pain began in the left upper arm, and was compared by the patient to the sensation produced by encircling his arm with and inflating a Riva-Rocci blood pressure instrument. The pain spread to the chest. Both heart sounds were distinctly audible but not forcible. There was no bruit. The area of cardiac dulness was normal. The other organs were normal. He has improved much under treatment.

CASE 5.—A male, aged 63 years. Considering himself in good health, he had a few days of fatiguing sight-seeing in London, and experienced some pain in the chest, which he regarded as rheumatic. He retired to rest apparently well on Nov. 9th, 1901, and slept well. He had severe pain in the chest at 5 A.M. which passed off and recurred shortly afterwards. At 9 A.M. there was pain in the centre of the chest with radiation down his left arm to the hand. The pulse was not quickened, but during pain was occasionally intermittent. The duration was three minutes; then complete relief. Respiration was restrained but breathing was not otherwise disturbed. Recurrence about 15 minutes later; soon breathing was stertorous. The pulse was imperceptible, the heart sounds were inaudible, the face was cold and clammy, and tears were flowing down the cheeks, apparently from intensity of pain—a veritable agony. Respiration was irregular and slowing. Death occurred within 15 minutes of seizure. On post-mortem examination no valvular disease was found; there was slight atheroma of the aorta with early stage of the same in the coronary arteries. There was fat infiltration of the heart and fine fatty degeneration of muscle fibres revealed by osmic acid staining. The heart was in diastole and flaccid.

CASE 6.—A male, aged 53 years. He had breathlessness with attacks of pain in the chest passing down the left arm and up the left side of the head. He had suffered more or less for about seven years, the attacks becoming more frequent. The pulse ranged from 66 to 72. The heart sounds were normal. The heart's action was accelerated but regular during the attack. He died 25 minutes after the last seizure. On post-mortem examination extensive calcification of the coronary arteries was found. In the right coronary artery was an intra-vascular aneurysm. Internal to the muscular coat in the neighbourhood of the aneurysm was a well-marked nerve ganglion cluster. The valves were normal. Muscle on the whole was well preserved and merely showing some pigmentary degeneration.

CASE 7.—A male, aged 62 years, seen with Mr. T. Jago. Sudden supervention of the status anginosus. He had been affected four days when seen by me. The signs were characteristic. There was no bruit or enlargement of the heart. The arteries were corded. The attacks were provoked by effort. Some days after I had seen him the patient became insane. He died in a fortnight from the commencement of his angina. There was no necropsy. I mention this case as exhibiting the mental aberration sometimes met with in cardiac cases, and as an extension of the neural phenomena in the case itself.

CASE 8.—A male, aged 73 years. He had attacks of chest-pain of a mild character about seven years prior to death, which I regarded as angina but the patient as indigestion. I did not see him again till this year (1909), when he had been suffering from unquestionable attacks of angina for a month; the pain was of a burning character, arising at the top of the sternum and passing down the left arm. The blood pressure was 140–145. The pulse was 84, regular. There was no bruit. The aortic second sound was not accentuated. There was no œdema. The kidneys and other organs were normal. Occasionally there was some loose crepitation at the left pulmonary base. During the next fortnight the patient rested, and the attacks became milder and less frequent. He then went to stay with a relative at the sea-coast. He bore the journey well, only having a slight attack on arrival, which passed off without nitrites. He was apparently well and in good spirits next day. During the following night he had a severe attack of pain, for which a physician used atropine and morphia. He was seen by me 48 hours later, when he had no pain, but a very rapid pulse and feeble heart sounds. He died the next day. There was no necropsy.

CASE 9.—A male, aged 32 years. He had a musical diastolic aortic bruit, best heard over the third left rib cartilage. He had attacks of pain in the præcordia, passing down the left arm on its ulnar side, and so severe at times as to cause the patient, in evident agony, to grasp his left wrist tightly with his right hand. During attack the aortic bruit was almost hushed and the pulmonary second sound was accentuated, while the tension of the radial pulse was lowered. Other phenomena of aortic regurgitation were well marked. The attack was relieved by the nitrites. During a period of improved cardiac action angina was much less frequent and severe.

CASE 10.—A male, aged 19 years. There was well-marked double aortic valvular disease with cardiac over-hypertrophy. There were frequent attacks of pain in the chest, chiefly located over the upper part of the sternum. There was no radiation down the arm or to other parts of the chest. The fifth and sixth ribs were removed to lessen the pain-provoking thrust of the heart against them during systole. There was great amelioration of pain, but he still has to take nitrite of amyl occasionally to gain relief from angina.

I have given a very short abstract of these ten cases because they briefly reveal the clinical history of angina pectoris, and show that the site of referred pain varies. Peripheral manifestations may be to the right or to the left, and sometimes to both right and left. In rare instances pain may commence at the periphery; the "aura," as Walshe long ago pointed out, may begin in the arm. One of the cases also shows that dextral radiation may be associated with gross disease in the right side of the heart, just as sinistral radiation may be associated with gross disease in the left side of the heart. Endocarditic cases may be met with in the young, while degenerative cases usually affect later life. One case likewise shows that thrombosis of a coronary artery may be associated with a persistent and severe cardiac colic, much as an impacted calculus may induce a protracted and fatal hepatic or renal colic. Another case, the fifth narrated, that of the man who died after sound sleep in practically his first serious attack, instances a severe angina which I am heterodox enough to suggest was probably dependent upon a partial cramp of the cardiac musculature. Such a view would be regarded by some as quite untenable, but, believing as I do in the independent contractile power of portions of the heart, for which I likewise believe I have proof, I consider the suggestion rational. Yet another case exemplifies the supervention of a general psychical disorder on local anginous symptoms; and, finally, the last case, to which I shall refer again, throws some light on the nature of cardiac pain in connexion with compensatory hypertrophy when the latter is in excess by the modification of the signs which followed surgical alteration of the heart-containing thorax.

The conclusion I draw from these facts is, that the character and situation of the conditions which originate angina vary, and that the heart, if, like other viscera, endowed with low sensibility to handling and other modes of external irritation under normal circumstances, may, in the presence of lesion of its internal surfaces or severe stimulation of its nervous endowment by compression or otherwise, reveal evidences of sensibility as well marked as do other viscera in their interior and under circumstances which may be regarded as analogous.

Careful and painstaking as has been the examination of the cardiac nervous system, we cannot yet be said to have by any means a complete knowledge even of its anatomy. As one of the cases I have related shows, cellular nerve structures were found in a hitherto unsuspected situation, internal to the vascular muscular coat, and in the absence of a complete knowledge of the nervous anatomy of the organ it is premature to dogmatise upon its physiological properties as to the presence or absence of visceral sensibility in certain situations and under certain circumstances. For myself I believe that in all cases of pronounced angina pectoris the site of referred pain is in one or other portion of the heart itself, or, as Sir Clifford Allbutt maintains, at the cardiac end of the aorta. That the brachial aura of some cases argues that referred pain may also be in the somatic innervation of the chest wall, as Dr. Mackenzie suggests, may be admitted, but to admit this in no way invalidates the conclusion that it may also be intra-aortic, intravascular, endocardial, or inter- if not intra-muscular, for recent research has shown that some structures in the heart, while themselves innervated, may in portions be regarded as of mixed neural and muscular nature. In the last case which I have quoted and which I purpose showing you this evening when speaking of the treatment of cardiac pain, the persistence of post-sternal angina, notwithstanding the division of the fifth and sixth intercostal nerves and the removal of intercostal muscles, supports, I think, my contention that visceral nerves may evince sensibility as well as somatic nerves. Peripheral vascular spasm as a preliminary or primary event in the history of the attack in angina pectoris is, I believe, rare. As a secondary and aggravating event it may occur, as also may a condition of vascular laxity due to inhibited ventricular systole, the consequence, as I believe, of pneumo-gastric shock.

The treatment of angina pectoris refers to the treatment (1) of the attack and (2) of the condition. The treatment of the attack of angina pectoris may consist in the relief as rapidly as possible of a painful affection of greater or less severity, the subsidence of which without untoward accident we may anticipate almost with certainty, or it may involve a grim struggle of progressive intensity between the physician and death, in which the latter may prove the victor within a very few minutes. Tragedies of this description are rarely encountered in the endocarditic series. They are usually met with when the ordinary physical examination of the heart reveals little or nothing amiss. The attack of angina in valvular disease (which is usually aortic) is rapidly relieved as a rule by the nitrites, even when it recurs with frequency. The nitrites, indeed, merely hasten the relief which is sure to follow the rescuing acceleration of the heart's action which succeeds the primary inhibition caused by the shock of cardiac pain. The attack in non-valvular angina may require, on the other hand, a quick recourse to morphia and atropin, or to a general anæsthetic to avert a rapidly fatal issue, which even then may, and frequently does, ensue. I agree with Sir Clifford Allbutt in considering the cause of death in angina pectoris to be the inhibition of cardiac action by the shock of pain. The heart may rapidly cease to beat and die in diastole; or death may be postponed somewhat longer, the heart passing into a feeble tachycardia, very suggestive of the fibrillary tremor, noticed as the last phase in the cardiac action of animals killed experimentally by intensive or repeated electrical shocks.

The immediate danger passed, the treatment of the anginous condition or of the conditions underlying the supervention of angina has to be considered. It is scarcely necessary to insist upon the avoidance, so far as possible, of those forms of physical exertion or mental emotion which are found to provoke attacks, or upon that care in diet and in the securing of easy evacuation which is likewise indicated. The iodides and mercurials which have proved beneficial in some instances may do so without reference to old specific infection, but where it is possible to determine such with any probability or certainty treatment on these lines is the more indicated. Now that we possess in the Wassermann reaction with the patient's blood serum a fairly reliable means of determining the point with some assurance it is well to use it. Recently I found this test positive in a case of some years' standing which shows no valvular disease and a very moderate rise of blood pressure. The patient was infected 20 years ago and was not specifically treated. He is now under treatment for specific disease.

The angina of valvular disease, which is, as I have mentioned, usually associated with aortic valvular lesion, frequently occurs during periods of defective compensation when we are not dealing with a hypermyotic heart. In such circumstances we observe the attacks to subside as cardiac action becomes more efficient. In this series I believe, with Sir Lauder Brunton, that the blood content of the organ plays a part. The treatment, therefore, of this condition of comparative cardiac failure on recognised lines is that indicated during periods of greater anginous distress. In the case of the hypermyotic heart, when anginous symptoms supervene, tend to increase, and to become persistent, further measures may be justifiable. But the data for forming an opinion as to the treatment of the condition by thoracostomy, the measure to which I refer, are, so far as I am aware, only to be found at present in the history of the case which was operated upon by my colleague, Mr. E. C. Stabb, on my suggestion, in May, 1908, and which I present to you this evening, 18 months afterwards. Full particulars of his previous condition and the details of the operation, as also of the relief afforded, may be found in THE LANCET of July 4th, 1908, and a further report upon this case appeared in THE LANCET of Nov. 20th, 1909. The patient still has attacks of post-sternal angina, for which he inhales nitrite of amyl, but the diminished frequency and lessened severity of the attacks since the liberated heart has pulsated against a yielding, non-stimulating "cage," to use the felicitous expression employed by Sir Clifford Allbutt, is unquestionable. Under similar circumstances I should have no hesitation in again advising the same surgical procedure.

Upper Berkeley-street, W.

MOSQUITOES WITH REFERENCE TO IMMIGRATION AND HORSE SICKNESS,

AND NOTES ON THE DESTRUCTION OF THEIR LARVÆ BY FISH IN THE SUDAN.

By ANDREW BALFOUR, M.D., B.Sc. EDIN., F.R.C.P. EDIN., D.P.H. CAMB.,

DIRECTOR, WELLCOME RESEARCH LABORATORIES, GORDON COLLEGE, KHARTOUM.

ON returning from leave in September, 1909, I met at Port Sudan the engineer in charge of the new bridge works at Goz-Abu-Guma, a malarious spot on the White Nile about 240 miles south of Khartoum. He informed me that the bridge piles, and more especially the scaffolding, had resulted in a great accumulation of sudd, the floating vegetable matter consisting of papyrus, *vossia* grass, reeds, *pistia*, &c., which drifts down stream from the great swamp regions, and usually ends its voyage by becoming anchored to the sedgy bank. Under ordinary conditions fragments of sudd begin to appear shortly after passing Dueim on the southward journey—i.e., about 120 miles from Khartoum. He further told me that in consequence of this blocking of the current mosquitoes were exceedingly numerous, and had rendered life almost unbearable. On learning this I at once predicted that in all probability the river steamers would be bringing large numbers of adult insects into Khartoum. As a rule this is not the case. The *imagines* which have boarded them far to the south usually quit the steamers, leaving, however, a legacy of eggs, larvæ, and pupæ in their bilges which nowadays the engineers in charge generally render harmless for mischief before the boats arrive at their destination. I soon found that this very natural prophecy was correct and that the mosquito brigade in Khartoum had its hands full. No sooner did a steamer with its barges tie up and the hatches were removed than a black cloud of mosquitoes emerged and sought breeding places ashore. The majority proved to be Stegomyia calopus, but Culex fatigans was common and, of graver import, Pyretophorus costalis was likewise a visitor. Probably other species have also invaded the town, for a nyssorhynchus—a genus of anopheline not hitherto recorded in the Sudan—was taken by Mr. King. But this was not all. I learned that steamers coming in from the Blue Nile were infected in the same way, and on inquiry found that there had been a great river spill in the neighbourhood of Rufaa about 90 miles from the capital, and that the country there resembled a huge swamp.

The contrast between these two conditions producing mosquito immigration is, I think, interesting—the one artificial and due to engineering activity, the other natural and apparently unavoidable. It may be said at once that every effort was made to cope with this invasion, steamers being met on arrival and fumigated with sulphur, but if the condition persists it will be necessary to obtain a portable Clayton apparatus, for it is no easy matter to deal with wood holds, &c., by ordinary methods such as sulphur squibs. Many water collections in the town have become infected, but, so far as is known, the efforts of the brigade have prevented any larvæ or pupæ hatching out. Its resources, however, have been taxed to the uttermost, and this state of things shows the necessity for constant and continuous labour in everything pertaining to mosquito reduction. Happily, although Khartoum had been very free from culicidæ for a long time the brigade had not been abandoned or reduced in numbers, and thus it was possible to attack the winged hosts in full strength and with unabated vigour. Had this not been so the results of several years' work would have been speedily nullified. As it is, no case of locally acquired malaria has, so far, been notified.

An interesting fact, however, is that a small epidemic of horse sickness (dikkop or blue-tongue) broke out in Khartoum. The disease was prevalent up the Blue Nile, and one is led to ask if the invasion by mosquitoes was in any way associated with the outbreak of this disease. Nothing definite is known regarding the etiology of the latter, but the work of Theiler, Pitchford, and others goes to show that some insect, and probably a mosquito, is the carrier of the virus. The said virus is of the kind termed ultra-visible, as is the virus of yellow fever. We know that the latter is conveyed by Stegomyia calopus, and here in Khartoum we have seen an invasion of the town by this mosquito which has been brought to the city by steamers coming from regions where horse sickness is at present epidemic and is usually endemic. It may be a mere coincidence, it has been impossible to carry out any experimental work on the subject, but it is possibly somewhat suggestive and seems worth recording if only to ascertain if any similar concatenation of circumstances has been noted.

Another point, however, to which I wish to direct attention is the investigation now proceeding in the Sudan as regards the utility of fish as destroyers of mosquitoes in their water stages. A zealous and interested official some time ago suggested the introduction of the small "millions" fish Girardinus poecilloides from Barbadoes to cope with larvæ in swamps, irrigation channels, large pools, and like collections of water. The question was referred to me and I found myself opposed to the idea, partly because I knew the difficulty of transporting these fish and the possibility that they might not take kindly to new surroundings, partly because, like the proud Syrian of old, I was tempted to reply, "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel?" In other words, one was of opinion that there was no use going outside for what might very well be obtained at home. I know that Captain Flower, director of the Zoological Gardens in Cairo, employed young "bulti" (Tilapia nilotica) in the tanks at the aquarium of Gezira and found them most efficient in keeping the water free from mosquito larvæ, and it was reasonable to suppose that many Nile fish were effective, especially as it is found that when fish are present in any pool left by the falling river mosquitoes do not breed out therein.

There were two points, however, requiring attention. If any water collection is stocked with fish these are apt to be speedily cleared out by natives or birds, such as kingfishers, which are very plentiful. Moreover, as is explained later, fish which attain any size are not suitable for use on irrigated land. Hence it was desirable to find a small and greedy fish which would offer no temptation to the native, which could be used in irrigation channels, and which, though not immune from the depredations of fish-loving birds, yet was so prolific or could be used in such numbers as to make these ravages of little account. The type of fish desired was that known in India as the chilwa, Chula argentea, which is said to be more efficient than "millions," as not only does it devour the larvæ, but, being a surface-feeder and an eager fly-taker, it is deadly to the adult mosquito, especially to the female intent on egg-laying.

Mr. Harold King, our entomologist, was going up the White Nile in the Floating Laboratory on a voyage of discovery and I asked him to take every opportunity of studying the question. Mr. King is an excellent field naturalist and admirably fitted to carry out such an investigation. His report, which I append, will be found of interest and value, and it would appear that in Cyprinodon dispar we have obtained the fish we require. This, as Mr. King remarks, remains to be proved, but the following letter, kindly sent me by the acting manager, Sudan Plantations Syndicate, in whose irrigation channels the fish are being tested, is at least promising:—

> DEAR SIR,—In reply to your favour of the 19th inst. I have examined the small canal into which the fish have been introduced.
>
> The canal is about 30 metres long and about half a metre deep, and the opening to the larger canal is closed with gauze wire netting to keep other fish out. Although the still water is now lying 25 days there are no signs of mosquito larvæ.
>
> The fish are alive and seem to feed on flies on the surface of the water and are most active in the early morning.—Yours faithfully,
>
> ALEX. MACINTYRE.

Like Mr. King, I have fed Ophiocephalus obscurus (*vide infra*) on the larvæ of Pyretophorus costalis and noted how the latter were devoured before they reached the bottom of the jar. The following is Mr. King's report:—

> While on the White Nile, between the dates of April 17th and July 19th, I carried out some investigations with Nile fish with a view to ascertaining what species, if any, were likely to be of value in controlling mosquitoes by feeding on their larvæ. In most of the swamps where mosquito larvæ abounded shoals of small fish of various species also occurred, but from the fact that the two throve together it was evident that the fish were not likely to be of very much use. Numbers of these fish were captured, placed in jars, and offered mosquito larvæ, but with one exception they refused them until they had passed one or more days without food. The exception was a fish found in a khor between Gebel Ahmed Aga and the river. In this khor very few mosquito larvæ could be found—a search of nearly two hours resulted in less than a dozen specimens being taken—but there were present numbers of the young fry which has been identified by Mr. G. Boulenger of the British Museum as Ophiocephalus obscurus.
>
> This fish feeds greedily on mosquito larvæ, thrives well in captivity and in stagnant water, and appears to be an ideal fish for the purpose for which it is wanted, except in one respect—viz., size. When full-grown it attains a length of 35 cms. As fry, inhabiting shallow waters, such as are found in swamps and river spills, this fish would no doubt prove of value, for it is in just such places that mosquitoes breed. On the other hand, though the fish would flourish in large irrigation canals and the fry could reach the smaller gadwals on irrigated land, the latter are frequently so constructed that the young fish, on increasing in size, could not regain the parent canals and would perish. Hence this species of fish is not likely to be an economical means of dealing with mosquito larvæ in such situations.
>
> Some thirty specimens of O. obscurus are still living in a jar in the laboratories.
>
> During May I met Mr. Butler, Superintendent of Game Preservation, who told me of a small fish—Cyprinodon dispar—which lives in Khor Arbat, about twenty-two miles from Port Sudan. He very kindly furnished me with some notes on its habits, and recommended that it should be given a trial, as it appeared to him to be likely to give good results. He further said that while no mosquitoes are noticeable in the vicinity of that khor they are plentiful near other similar khors where C. dispar does not exist.
>
> Accordingly, on Sept. 6th, I left for Khor Arbat, and having spent three days there returned to Khartoum on Sept. 12th. There were myriads of the fish in the khor, but at first I had considerable difficulty in persuading them to live in captivity. Eventually I found that while if placed in jars nearly full of water most of them died within twelve hours, yet if given only about two inches of water over a layer of sand they could be transported fairly easily. One hundred and one living specimens reached Khartoum and were there offered mosquito larvæ which they took readily. This, however, is not conclusive proof that C. dispar feeds on mosquito larvæ in its wild state as the specimens had been unfed for two days when the larvæ were given them, none being obtainable at Khor Arbat.
>
> As these fish did not thrive in jars I wrote to Mr. MacIntyre, acting manager of the estate at Zeidab, belonging to the Sudan Plantation Syndicate, Ltd., asking him if he would allow them to be placed in a gadwal on the Company's estate for purposes of experiment. This he readily agreed to, so on Sept. 19th I took those that were still alive—about seventy in number—to Zeidab and the following morning liberated them in a short length of gadwal, which Mr. MacIntyre very kindly had filled with water. This gadwal is not used at present for agricultural purposes, and the pipe connecting it with the canal has been netted to prevent other fish gaining access. This was done in order that the C. dispar might be given every chance of establishing themselves before being subjected to the possible ravages of other and larger fish.
>
> The specimens liberated at Zeidab were all immature, as it was found that partially grown fish withstood captivity better than did adults.
>
> When full grown C. dispar attains a length of 8 cms., and in all stages appears to prefer shallow water.
>
> Should the gadwal in which these fish were liberated remain free from mosquito larvæ during the coming year, while similar gadwals in the immediate vicinity serve as breeding places for these pests, I think sufficient proof of their value will have been obtained to justify an effort being made on a larger scale to establish C. dispar throughout all the gadwals on the Sudan Plantation Syndicate Ltd.'s estate and on other similar farms where great difficulty is experienced in controlling mosquitoes.

Attached is the account of Cyprinodon dispar given by Boulenger in his monumental work on "The Fishes of the Nile":—

> This species has not actually been found in fresh water in any part of the Nile Basin, but as it seems to be widely distributed along both coasts of the Red Sea, in tidal pools and at the mouth of the rivers, and as it is known to occur in hot springs in Arabia and Persia and in fresh water in Cutch, it will probably be found in inland waters in Egypt in the neighbourhood of the Red Sea. It is included here on this supposition.
>
> C. dispar is very closely allied to, and difficult to distinguish from, C. fasciatus, but it grows to a larger size, it has only 9 to 10 rays in the dorsal fin, and 10 or 11 in the anal, and the caudal fin, which is truncate, is marked in the male with two or three crescentic black bands; the dark and light crossbars on the body, which are more or less distinct in the female, are replaced in the adult male by numerous round light (in life blue) spots. 16 to 20 teeth in each jaw. 26 to 28 scales in the lateral line, 22 or 24 round the body. Grows to a length of 80 millimetres.
>
> In describing this species, Rüppell observed that it is found all round the Red Sea, in salt water, but that it occurs also in the thermal freshwater of Hadjer Elme near Tor. Mr. Lort Phillips also found it in a hot spring at Makulla, Persian Gulf, and the type specimens of C. stoliczkanus, Day, were obtained in a small nearly quite freshwater stream at the village of Joorun, in Cutch.

It would seem that this fish could be also utilised for dealing with Culex salus in the latter's aquatic stages which are passed in salt or very brackish water.

Khartoum.

RECENT RESEARCHES ON THE ANATOMY OF THE HEART.

BY ARTHUR KEITH, M.D. ABERD., F.R.C.S. ENG.,
CONSERVATOR OF MUSEUM, ROYAL COLLEGE OF SURGEONS OF ENGLAND;
AND
IVY MACKENZIE, M.A., B.SC., M.B. GLASG.,
CARNEGIE RESEARCH FELLOW.

SOME three years ago Dr. Martin Flack and one of the writers published a paper[1] on the muscular connexions between the various parts of the heart and summed up the results of other researches which had been published at that time. In that paper a small mass of peculiar muscle and nerves was described—a mass a little bigger than a grain of wheat—which was constantly found at the termination of the superior vena cava in the right auricle and to which we gave the name of sino-auricular node. Because of its intimate connexion with nerves and the peculiar structure of its muscle fibres—similar to those of the auriculo-ventricular node described by Aschoff and Tawara at the commencement of the bundle passing from auricles to ventricles—we supposed that the sino-auricular node might prove to be the starting point of the heart's contraction.

Dr. Walter Koch,[2] working in the laboratory of Professor Aschoff, has fully verified and also extended our description of the sino-auricular node. He found also, as Keith and

---

[1] A. Keith and M. Flack: Journal of Anatomy and Physiology, 1907, vol. xli., p. 172. See also THE LANCET, April 11th, 1906.

[2] W. Koch: Deutsche Medicinische Wochenschrift, 1909, No. 10; Münchener Medicinische Wochenschrift, 1909, No. 46.

Flack stated, that the sino-auricular node had no special muscular connexion with the auriculo-ventricular node except through the general musculature of the auricle. Dr. Ch. Thorel[3] has reached a different conclusion; he found by serial sections of the human right auricle that these two nodes were connected by a differentiated strand of tissue. We have been unable to find such a connexion in the hearts of smaller mammals in our series of sections. We are still of opinion, not only that these nodes are devoid of a special connexion, but that they represent two quite different autogenetic systems in the heart. Professor Aschoff,[4] in a recent excellent summary of recent work on the pathological anatomy of the heart, cites the experiments by Hering, Langendorff, and Lehmann as favouring the theory that the sino-auricular node is the point of origin of the heart's contraction.

We have recently cut and examined a series of hearts of the eel, frog, tortoise, lizard, pigeon, sparrow, and of many mammals, with the view of throwing more light on the nature of the sino-auricular node of the human heart. The result of our investigations has been to show that all those areas of specialised or primitive musculature—such as have been described as nodes—are really areas where the musculature of the heart comes into an extremely intimate contact with the nervous system, that nodes are really neuro-muscular contacts. We found that those areas of the heart of the tortoise which Gaskell found to have the greatest power of originating the heart's impulse, and those of the eel which MacWilliam found were the most automatic, were areas made up of a mixture of nerve and muscle fibres. The appearances led to the belief that in these areas the nerve fibres become actually continuous with the muscle fibres, and that there are nucleated fibres which, from their structure and staining reaction, appear to be intermediate between nerve and muscle fibre. To the cardiac areas which we regard as made up of nerve and muscle fibres we propose to give the non-committal name of "nodal tissue."

The wall of the sinus venosus of the eel, in which the great veins end, is made up of nodal tissue, but this is accumulated and the nerve element is more abundant at the bases of the venous valves which mark the junction of sinus and auricle. In the frog this tissue is massed mostly in the left auricle, at the termination of the pulmonary vein, but it extends also on to the right auricle. We were able to verify the fact that the part of the left auricle (vestibule) in which the pulmonary veins end is a derivative of the sinus venosus. The nodal tissue of the frog occurs at the sino-auricular junction, but instead of being continuous round the whole extent of that junction, as in the eel, it is concentrated in one part.

As one ascends the scale of animals the concentration becomes more marked. The nodal tissue is in intimate connexion in the frog with Remak's ganglion, which it would be more convenient to name, as it really is, the sino-auricular ganglion of the heart. The condition in the tortoise and lizard is very similar to that in the frog; the nodal tissue, however, is now more directly connected with the right auricle, although, as in the frog, the chief centre of its distribution is at the termination of the pulmonary vein (vestibule) in the left auricle, where it has a close connexion with the sino-auricular (Remak's) ganglion. The nodal tissue forms almost a complete circle round the junction of sinus and auricle, its chief distribution, as already mentioned, lying at the termination of the pulmonary vein. In the bird's heart the sino-auricular tissue is not in evidence in the form in which it is present in the heart of other vertebrates. The sino-auricular node is represented by small neuro-muscular stations scattered along the sino-auricular junction. The sino-auricular ganglion, still in relationship with the vestibule of the left auricle, is also reduced in extent.

In the mammalian heart the sino-auricular nodal tissue is concentrated on the right auricle, chiefly along the sino-auricular junction and in front and on each side of the termination of the superior vena cava. In the heart of the mole this tissue is peculiarly abundant at the sites just mentioned, as Keith and Flack[5] have described. We have now found that in the lowest type of mammalian heart—that of the Monotreme Echidna[6]—the nodal tissue is abundant and peculiar; it lies superficially along the junction of sinus and auricle, especially in that part of the junction known in human anatomy as the sulcus terminalis. The tissue is seen as leashes of superficial nucleated fibres passing downwards on the surface of the auricle where they become continuous with the ordinary muscular fibres. In the hearts of rodents the nodal tissue has an extensive distribution along the sino-auricular junction, but in the higher mammals, as in man, it tends to become concentrated at the termination of the superior vena cava.

Thus it will be seen that the sino-auricular nodal tissue becomes less in amount and more concentrated in position as one passes from the lower and more automatic to the higher and less automatic type of hearts. As the animal becomes more specialised the heart loses its independence and becomes more a part of the general organisation. The nodal tissue becomes less in amount; the cerebro-spinal nerves enter into a more direct relationship with the cardiac musculature.

We come now to deal with the auriculo-ventricular nodal tissue. In the mammalian heart this tissue is represented by the reticulum or node in which the auriculo-ventricular bundle commences. On its discovery Aschoff was inclined to regard this node as the automatic centre of the heart. The node is situated in the septal wall of the right auricle near the orifice of the coronary sinus. Aschoff's original hypothesis as to the nature of the node was supported by the investigations of his pupil Dr. Walter Koch,[7] who observed that the tissue of the nodal region contracted in the dying heart when all the other parts had ceased. Professor H. E. Hering's experiments support the view that the highest automatic centre of the heart is the sino-auricular. On anatomical evidence the auriculo-ventricular node must be regarded as a lower centre.

In the evolution of the heart the nodal tissue at the auriculo-ventricular junction has, like that at the sino-auricular junction, undergone reduction and concentration. In the heart of the eel the auriculo-ventricular nodal tissue forms a complete ring. It is composed of reticulated fibres situated at the inner margin of the auriculo-ventricular orifice. It receives numerous nerve fibres from the plexus of nerves surrounding this orifice. The nodal tissue is inserted between the annular fibres of the auricular canal and the inner longitudinal fibres of the ventricle. In the frog's heart, although the ring of tissue is complete, there is evidence of concentration, for it is more abundant at certain points, and this concentration becomes more marked in the reptilian heart. In the bird's heart the auriculo-ventricular nodal tissue is reduced in amount; it is represented by scattered points situated chiefly near the base of the inter-auricular septum, where the nerves and muscle form small nodes. In the mammalian heart the ring becomes reduced to the auriculo-ventricular node at the commencement of the bundle distributed to the ventricles.

It is very probable, as Dr. James Mackenzie[8] has supposed, that in cases of continued irregularity of the heart the inception of the rhythm of the heart has been taken on by the auriculo-ventricular node, owing perhaps to a lesion of the sino-auricular node. In some of Dr. Mackenzie's cases of continued irregularity one of us found that the sino-auricular node was more isolated than normal, with signs of fibrosis, but the appearances varied in different cases, and the technique employed in their examination was too crude to allow definite inferences to be drawn.

Our investigations have made certain that the single strand of muscular communication now known as the auriculo-ventricular bundle is peculiar to the mammalian heart. In the fish, frog, and reptile this bundle is represented by the inner vertical fibres of the ventricle which issue from the auriculo-ventricular ring of nodal tissue; as the nodal tissue becomes concentrated the inner vertical fibres also become reduced until only the strand connected with the remnant of the nodal ring remains in the mammalian heart. We see in the reduction of the ring and of its ventricular strand the same process at work as in the rest of the heart—viz., a reduction in the automatic power of the ventricle and its greater subjection to the central nervous system.

---

[3] Ch. Thorel: Münchener Medicinische Wochenschrift, 1909, p. 2195.

[4] L. Aschoff: Medizinische Klinik, 1909, Nos. 8 and 9. Professor Hering's latest results have just appeared in the Münchener Medizinischen Wochenschrift, No. 17, 1909.

[5] A. Keith and M. Flack: Journal of Anatomy and Physiology, 1907, vol. xii., p. 172.

[6] For the heart of this animal we were indebted to Professor J. P. Hill. A consecutive series of excellent sections was prepared for us by Wm. Chesterman, Oxford.

[7] W. Koch: Ueber das Ultimum moriens des Menschlichen Herzens. Inaugural Dissertation, Freiburg-im-Breisgau, 1907.

[8] J. Mackenzie, Quarterly Journal of Medicine, 1907, vol. i., p. 39.

The condition in the bird's heart puzzled us greatly. There was no bundle to be found, although certain muscular connexions between the right auricle and ventricle were found. We hoped to get a clue to the condition in the bird's heart in that of the Echidna, but there we found a large and typical bundle with many points of resemblance to the form found in the hearts of ungulates, but we also found considerable remnants of the extensive auriculo-ventricular connexion which prevails in lower vertebrate hearts, especially round the right auriculo-ventricular orifice. One of these remnants demands mention because it throws light on the nature of the auriculo-ventricular node. In the heart of Echidna we found that this node gave off not only the bundle but also a leash of fibres which descended at once to the septal wall of the right ventricle, independently of the bundle, a connexion which we also noted in the heart of the rat. This direct connexion we regard as a remnant of the complete circle of inner ventricular fibres. On the left side of the heart of the Echidna there was an auriculo-ventricular connexion consisting of ordinary muscle fibres. In the bird's heart the muscle connexion between the auricles and ventricle is found on the lateral and mesial side of the right auriculo-ventricular orifice, but these connecting fibres are not of a markedly specialised type.

Two recent papers demand mention. Dr. E. J. Curran[9] has drawn attention to the bursa or lymphatic space that surrounds the bundle, a circumstance that leads him to infer that the bundle is passive during contraction of the heart. He traces the connexions of the auriculo-ventricular node to both auricles; our sections show that the closest connexion of the node is with the septal fibres of the left auricle and with the annular fibres of the right. Dr. R. Retzer[10] has inferred, from an investigation of developing hearts, that the auriculo-ventricular bundle is a special downgrowth of musculature of the sinus venosus within the ventricles—an interpretation with which we totally disagree. On the other hand, we think there is much to be said in favour of Dr. Retzer's hypothesis that the bundle may have much in common with the spindles of voluntary muscles, although the analogy is denied by Dr. Gordon Wilson.[11] Sherrington showed that these spindles are the points from which the sensory nerves of muscles commence—points at which coördinating impulses arise. These muscle spindles persist after section of all the nerves of a muscle; Keith and Miller have shown that the ventricular ramifications of the bundle persisted years after the bundle in the human heart had been severed by a gumma. We are of opinion that experiments will show that the bundle is not only for the conduction of impulses from auricle to ventricle, but that through the bundle the condition of the ventricle is continually affecting the condition of excitability of the auricle. The bundle appears from its nature to be not only a conducting but a coördinating mechanism.

Professor Aschoff[12] and his pupil Dr. Nagayo have shown that the transparent appearance and large size of the Purkinje (bundle) fibres of the ungulate heart is due to the presence of glycogen. Of great significance in unravelling the method in which the impulse is conducted from one chamber of the heart to another is Professor Wenckelbach's[13] discovery that a sino-ventricular rhythm may occur in the human heart, a rhythm which MacWilliam observed in the eel's heart many years ago.

One of the chief results of our investigation has been to impress upon us the necessity of studying the special musculature of the heart in its relation to the extraordinary abundant nerve-supply of that organ. The excitable regions of the heart are those where the nerves come into a specially direct connexion with the specialised tissue which we have named nodal. We have not touched on the abundant nerve-supply to the sinuses of Valsalva at the commencement of the aorta and round the auriculo-ventricular orifices which we regard as end stations for sensory reflexes. The nerve plexuses at these regions are so close that zigzag experiments could not possibly sever all the nerve connexions between auricle and ventricle. We are also of opinion that an entirly fresh description of the nerves to the heart is necessary, and that the fundamental differentiation must be into those nerves which supply the venous base or commencement of the heart (derived from the lower cervical sympathetics) and those which supply the terminal end or arterial base of the heart. It is those nerves which end in the venous base which appear to exercise the inhibitory and accelerating effects on the heart through the specialised nodal system. Dr. Martin Flack[14] has given an excellent summary of the recent literature dealing with aspect of cardiac research.

A CASE OF SIMULTANEOUS SUPPURATIVE APPENDICITIS AND PERFORATED GASTRIC ULCER.

BY C. A. MOORE, M.S. LOND., F.R.C.S. ENG.,
SENIOR HOUSE SURGEON, BRISTOL GENERAL HOSPITAL.

THE patient, a female, aged 18 years, was sent in to hospital by Mr. J. Lewellyn of Kingswood on Oct. 17th, 1909, under the care of Mr. R. G. P. Lansdown. The previous history contained nothing of importance except that she had twice been under Mr. Lewellyn's care with symptoms of gastric ulcer, the last time six months before admission. She had also suffered from several attacks of pain and tenderness in the right iliac fossa, but not severe enough to lay her up. The present illness commenced on Oct. 16th. She had not felt well all day and had taken no solid food. At 8.30 P.M. she had a sudden attack of pain in the left side of the abdomen so severe that she fainted and was sick. The pain became less, but the sickness continued until 5.30 A.M. next day. The bowels acted after taking an aperient.

On admission at 9.30 P.M. on Oct. 17th the patient had a typical "abdominal" expression, with sunken eyes and dilated pupils. The pulse-rate was 136 and the quality poor; the temperature was 99·8° F. The abdomen moved very imperfectly, especially in the lower part, where the distension was also more marked than above. There was considerable rigidity all over, well-marked in the epigastrium, but perhaps more so in the right iliac fossa. There was nothing definite to be felt except a sense of thickening in the appendix region. There was distinct tenderness in the left loin, but none in the right, and rectal examination was negative. The right loin was dull, and the dulness did not shift. The rest of the abdomen was tympanitic, the stomach area was increased, and the liver dulness only just appreciable as a narrow zone of impaired resonance. The diagnosis lay between appendicitis and perforated gastric ulcer, and it was decided to explore the appendix first.

At 11.30 P.M., 27 hours after perforation, Mr. Lansdown operated. A small incision was made at the outer border of the right rectus. Much odourless peritoneal exudate escaped and the appendix was found covered with lymph, and swollen and congested, with a hard bulbous end. It was rapidly removed by crushing and inversion. As this could obviously not explain the whole of the symptoms a median incision was made above the umbilicus. On opening the peritoneum odourless gas in large quantity escaped, together with more fluid. A brief search revealed a perforation in the anterior wall of the stomach towards the cardiac end and nearer the lesser curvature. There was much surrounding induration, and the perforation was partially sealed by plastic lymph. It was closed with a purse-string suture and the fluid in the immediate vicinity mopped up; very little stomach contents escaped. The upper wound was closed in layers, and through the lower a cigarette-drain was passed into the pelvis. The appendix after removal was slit up, was found to contain pus, and the mucous membrane at the tip was ulcerated.

The patient bore the operation well. The Fowler position was adopted and a pint of hot saline solution was given by the rectum every four hours. The drain was removed, and mouth-feeding commenced on the third day. Her after-progress was rapid and uneventful, and she was discharged well with the abdominal wounds sound and able to take ordinary diet on Nov. 13th.

---

[9] E. J. Curran: Anatomischer Anzeiger, 1909, Band xxxv., p. 89.

[10] R. Retzer: Anatomical Record, 1908, vol. ii., p. 149.

[11] J. G. Wilson: Proceedings of the Royal Society, 1909, vol. lxxxi., p. 151.

[12] Nagayo: Verhandlungen der Deutschen Pathologischen Gesellschaft, 1908 (Keil), p. 150.

[13] Wenckelbach, K. F.: Archiv Maladies du Cœur, 1908, No. 2.

[14] Flack, M.: Further Researches in Physiology. Edited by L. Hill. London, 1909.

Remarks.—The association of hæmatemesis with appendicitis and other serious abdominal lesions has been noted by many observers, especially Treves, Dieulafoy, and Lucas-Championnière. It has generally been ascribed to a toxic necrosis of the gastric mucous membrane. The present case, however, must be put in a different category, and the only one resembling it is one published by Matheson.[1] A girl, aged 19 years, with a previous history of gastric ulcer, was recovering from a severe attack of appendicitis when she was seized with severe hæmatemesis and symptoms of perforation. On account of her grave condition no operation was undertaken, and on her death a few hours later no post-mortem examination was obtained. Kelly and Hurdon [2] also quote a case of Treves, but no details are available.

One can only speculate as to the probability of connexion between the two lesions, or as to their having a common cause. It is worth remarking that the girl was not anæmic, nor had she any sign of oral or other sepsis, the teeth being good. The previous history suggests that she had undoubtedly suffered from gastric ulcer in the past, and probably also from attacks of mild catarrhal appendicitis. Inasmuch as Robson and Moynihan[3] give the mortality of cases of perforated gastric ulcer operated on from 24–36 hours after perforation as 87·5 per cent., recovery from the simultaneous presence of two such grave lesions must be regarded as most gratifying. Important factors contributing to this result were the comparative emptiness of the stomach at the time of perforation, and Mr. Lewellyn's prompt recognition of the grave condition of the patient.

I am indebted to the kindness of Mr. Lansdown for permission to publish these notes.

Remarks by MR. LANSDOWN.—In operating upon so grave a condition as perforation of a gastric ulcer I think the following three points are of the greatest importance in contributing to a successful result: (1) speed in operating, as great as is consistent with thoroughness; (2) care in avoiding damage to the peritoneum by not using antiseptic lotions, and only swabbing up the fluid in the immediate vicinity of the perforation; and (3) the protection of the patient from exposure to chill by covering him completely with a dry sterile towel with an opening in the centre, the edges of which are fastened to the edges of the wound by towel-clips.

Bristol.

TWO CASES OF POISONING BY MASSIVE DOSES OF TRIONAL, WITH RECOVERY.

BY J. S. MACKINTOSH, M.R.C.S. ENG., L.R.C.P. LOND.

CASE 1.—The patient was a lady, aged 37 years, who, about 10 P.M., swallowed 185 grains of trional and 20 grains of veronal and also the bottles which had contained the drugs, after crushing them into powder. Seen next morning she would move her eyelids on being asked in a loud voice to open her eyes, but gave no other sign of consciousness. Her face was flushed; the eyelids were a little puffy. Pulse, respiration, and temperature were normal. There was no coldness of the extremities. The pupils were not contracted and reacted to light. Treatment consisted of washing out the stomach and then introducing a cup of strong coffee through the funnel and tube, spraying menthol into the nose, applying strong smelling-salts at short intervals of time, and injecting 1-40th grain of strychnia nitrate hypodermically. During the afternoon coma deepened and urine high in colour was passed involuntarily. The face became congested, the lips blue, and the eyelids œdematous. The strychnine injections and application of smelling-salts were continued and a draught containing 1 drachm of magnesium sulphate in solution was administered every four hours. The urine, examined by Dr. G. L. Eastes, showed only a minute trace of hæmatoporphyrin, though it was the colour of tawny port wine. Towards night the coma showed signs of passing off. During the whole of the second day the patient slept profoundly, though she could be roused to take food and medicine, the magnesium sulphate being continued four-hourly. On the third day full consciousness returned. The patient still had a bluish look about the face. There was a rise of temperature during the next three days, touching 103° F., and then gradually subsiding. The glass caused no symptoms beyond a few small scratches about the inside of the mouth, unless it contributed towards the rise of temperature. There was at no time any vomiting, rash, Cheyne-Stokes breathing, or blistering of fingers, nor were the after-effects of the severe character described as following some cases of trional poisoning, there being little in the patient's condition at the end of a week which could be ascribed to the drug itself. Dr. W. Hale White kindly saw this case with me in consultation.

CASE 2.—The patient was a lady, aged 40 years, who swallowed 125 grains of trional in tablet form. Seen 20 hours later she was lying in a semi-comatose condition but would open her eyes when addressed. Her respirations and temperature were normal, the pulse 120 but strong, and her colour a little pale but not bluish or dusky. The treatment adopted was washing out the stomach with a solution of sodium bicarbonate (1 drachm to the pint), followed by injections of strychnine, the application of smelling-salts to the nose, and the administration of magnesium sulphate, as in the first case. The patient was somewhat congested about the face during the second day, but in 48 hours from the time I first saw her the physical effects of the overdose had passed off.

Recorded cases of poisoning by the sulphonal group show that toxic symptoms from cumulative doses are much more dangerous than when poisoning results from a single large dose, a proposition borne out by the two cases just described.

Hampstead.

A SIMPLE APPARATUS FOR PRODUCING RHYTHMICAL VARIATIONS IN ELECTRICAL CURRENTS.

BY NORMAN E. ALDRIDGE, M.B., C.M. EDIN., D.P.H.,
MEDICAL OFFICER IN CHARGE OF THE ELECTRO-THERAPEUTICAL DEPARTMENT, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.

IN your issue of Nov. 13th, 1909, p. 1418, Dr. H. Lewis Jones, in a most interesting paper, calls the attention of electro-therapeutists to the extreme value of rhythmical variations in electrical currents. By the courtesy of Dr. Lewis Jones, I had the opportunity some months ago of seeing these currents in operation at St. Bartholomew's Hospital.

I have made, at the cost of a few pence, and have used for some months, a simple apparatus which produces rhythmical variations in battery or coil currents as efficiently as the expensive apparatus mentioned in Dr. Lewis Jones's paper, and I venture to think that its efficiency and smallness of cost may render it of interest to others.

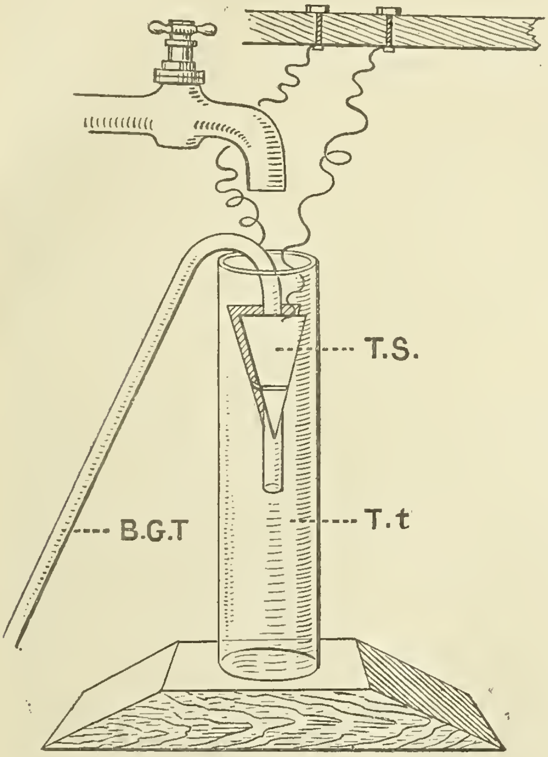
The principle is a varying water resistance, the variations of which are produced by syphonage. The following are the component parts of the apparatus: 1. An ordinary test-tube 6 inches long with a diameter of half an inch. This stands upright in a hole cut in a block of wood. 2. A bent piece of glass tube, one arm being 5 inches in length and the other 3 inches, with a bore diameter of a quarter of an inch. 3. Two triangular-shaped pieces of thin sheet copper 2½ inches long with a base of just under half an inch. To the base of each copper strip is soldered a piece of flexible insulated wire. The strips are tied top and bottom by silk to each side of the short arm of the bent tube, small notches or holes being made in the strips for this purpose. The points of the strips reach to within a quarter of an inch of the bottom of the glass tube. The short arm of the tube with the copper strips attached is now inserted into the test-tube, care being taken that the strips do not touch one another, and the apparatus is placed under the tap. The flexible wires are carried to terminals screwed into a shelf or neighbouring piece of wood. If the flow of the tap is carefully adjusted to a slow dribble the test-tube can be made to fill and syphon itself from 10 to 18 times a minute with absolute regularity. One cord from the battery or coil is attached to one of the terminals mentioned, and from the other terminal a cord is carried to one of the electrodes to be used; the other electrode is attached direct to the vacant terminal of the coil or battery. The strength of the current is governed by the same means as would be employed if the water resistance were not in circuit. It will be found that the current rises from zero when the tube has syphoned, to maximum when the tube is filled. By placing a milliamperemeter in circuit I find by the deflection of the needle that the rise is regular and even, but, of course, the fall is somewhat more rapid than the rise.

---

[1] Matheson: Brit. Med. Jour., 1901, vol. i., p. 1201.

[2] Kelly and Hurdon: The Vermiform Appendix and Its Diseases, p. 415.

[3] Robson and Moynihan: Diseases of the Stomach, p. 161.



T.S., Copper strips. T.t., Test-tube. B.G.T., Bent glass tube.

I have used my apparatus with bi-polar arm baths, and with the four-celled baths with complete satisfaction, and I see no reason why it should not be equally satisfactory with a full-sized bath.

Southampton.

Medical Societies.

LIVERPOOL MEDICAL INSTITUTION.

Demonstrations of Specimens.—Solid Carbon Dioxide.—Heart-block.

A MEETING of this society was held on Dec. 16th, 1909, Mr. T. H. BICKERTON, the President, being in the chair.

Dr. J. M. HUNT showed a case of Vincent's Angina and referred to the differential diagnosis between it and diphtheria and syphilis; there were two other cases in the same family.—Dr. E. E. GLYNN demonstrated the characteristic fusiform bacilli and "spirilla" from the case, both in smears and with the dark-ground illumination.

Mr. C. THURSTAN HOLLAND demonstrated Solid Carbon Dioxide, the method of preparing it in the form of sticks from the cylinder of gas, and explained its uses for the removal of nævi, &c.

Dr. HUBERT ARMSTRONG read notes of a case of Heart-block occurring in a boy aged 5½ years. The symptoms began in July, 1909, about a week after an alleged fall upon the head. At first there were severe headache, occasional delirium, a temperature of 104° and 105° F., with pulse 48 and lower. There were no other symptoms, and the nature of this febrile attack, which lasted five days, is not clear. The patient recovered, but a fortnight later had a series of epileptiform attacks accompanied by profound syncope, and lasting over five days, on the second of which he was admitted to hospital. After admission he had eight convulsions in three days, and in the intervals there was great cerebral irritation, so much so that the case was regarded as one of meningitis until lumbar puncture revealed a normal cerebro-spinal fluid. This irritability disappeared 24 hours after the last "fit." The pulse-rate during the first ten days varied erratically between 28 and 84. It then became constant between 50 and 60 for five days, when it rose to above 100 for four days. It then fell to between 40 and 50, and has maintained the same rate to the present. Simultaneous venous and radial pulse tracings taken by Dr. John Hay during this last period showed typical dissociation of auricular and ventricular rhythms, the auricles beating about 70 when the ventricular rate was 45. The phenomenon was also demonstrated on the fluorescent screen. There have been no further epileptic fits since the third day after admission, and the child, except for a little cyanosis and that he is incapable of much exertion, at present appears quite comfortable. There is a slight mitral regurgitant murmur, but the cause of the heart-block is undetermined.

Dr. JOHN HAY read a paper on Heart-block, Complete and Partial, in which he referred to six cases of Adams-Stokes disease which had been under his supervision during the last two years. Five of these cases were of the arterio-sclerotic type; the sixth was apparently caused by a severe gonococcal infection in a young woman. The patients exhibited all the grades of severity, ranging from slight attacks of vertigo and transient blurring of consciousness with bradycardia to grave syncopal and epileptic seizures. The insidious onset of the malady was referred to, diminution in the area of cardiac response being in some instances the first disturbing feature. Records were shown demonstrating the actual transition from partial to complete block, and the return from complete to a 2 to 1 rhythm without the appearance of any subjective symptoms. The pathological findings in the disease were referred to and treatment was considered. One of the cases had been greatly benefited by potassium iodide and the gonococcal case had improved after the exhibition of a gonococcal vaccine.

The case and paper were discussed by the PRESIDENT, Dr. W. MCAFEE, Professor T. R. GLYNN, Sir JAMES BARR, Dr. J. H. ABRAM, Dr. T. R. BRADSHAW, and Dr. R. J. M. BUCHANAN, and Dr. HAY replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

The Conduct of Gynæcological Cœliotomy.

A MEETING of this society was held at Manchester on Dec. 17th, 1909, Dr. J. W. MARTIN (Sheffield), the President, being in the chair.

Dr. A. J. WALLACE (Liverpool) opened a discussion on Preparation and After-treatment in Cases of Gynæcological Cœliotomy. After dealing with the personal element in the patients, the importance of oral antisepsis was insisted upon. It was held that special dieting was of little value, since patients who were fed on ordinary diet up to the evening prior to operation day did just as well as those who were starved or semi-starved. In the same way special purgation was quite unnecessary, one or two free evacuations on the day before operation being considered sufficient. Skin preparation was held to be of great importance, and Dr. Wallace detailed the evolution of the method he used at the present time. The old method of scrubs and compresses was condemned, both as being unscientific and as causing the patient discomfort at a time when placidity ought to be aimed at. The guiding principles were to avoid softening of the skin, with consequent detachment of epithelium and oozing of septic materials from the skin gland ducts; it was better to harden, to "tan" the epithelial layer, and to constringe the glandular orifices; finally, the hardened surface should be rendered antiseptic. Von Herff's method of using acetone supplied the first two requisites, and the third was obtained by combining iodine with it. Dr. Wallace had the abdominal skin rubbed for several minutes with a mixture of equal parts of acetone and spirit, and then painted with a 3 per cent. solution of iodine in acetone. The results gained by this method were the best yet obtained. In special cases Döderlein's "gaudanin" was employed in addition; this gave an absolutely aseptic surface of thin rubber. As an alternative, solutions of the various gums in acetone had been tried and found to give excellent results. In after-treatment the semi-recumbent position was advocated in all cases for the first 12 hours, because this position was associated with absence of, or greatly lessened, post-operative nausea and vomiting. The use of morphia was discussed and advocated. Unlimited water was allowed, and feeding with solid food begun on the second day. Opening of the bowels within the first 24 hours cut short pain from flatulence and permitted the patient to settle down sooner than would otherwise be the case. The duration of the stay in bed should be as short as was consistent with safety to the patient, and it was held that the majority of laparotomy cases could be allowed to get up much sooner than had hitherto been considered either possible or safe. Certain conditions had to be fulfilled before a patient could be permitted to rise from bed, amongst the most important being the existence of a desire on the part of the patient to get up. Some 46 cases of laparotomies for various gynæcological conditions had been allowed to rise from bed at periods varying from the third to the tenth days, and, with one exception, all these cases had progressed more quickly than those who had been kept on their backs for longer periods. The single exception developed a mild phlebitis on the second day after rising.

Dr. Mary H. F. Ivens (Liverpool) said that she had for some time allowed her patients to get up early, with great advantage, she thought, and no ill effects. She was opposed to the use of morphia.

Dr. W. Blair Bell (Liverpool) deprecated free purging before operation, as it lowered the blood pressure. He always gave atropine before an operation in order to raise the blood pressure, lessen shock, and lessen buccal and bronchial secretion. He avoided the use of morphia, but gave bromidia, in a rectal saline, to a restless patient. As regards early rising, he pointed out that animals did themselves no harm by moving about freely within a few hours of an abdominal section. He had on several occasions been very pleased with the beneficial effect of pituitary extract in cases of post-operative intestinal paresis.

Dr. A. Donald (Manchester) always prepared the skin after the patient was anæsthetised. He avoided the use of morphia if possible, and preferred to keep the patient in bed for 14 days at least.

Dr. W. E. Fothergill (Manchester) urged the importance of careful cleansing of the mouth, nose, and throat before operation. He preferred solid to liquid diet both before and, as soon as possible, after operation; when fluid was necessary it should be in the form of some preparation containing sugar, such as raisin tea. He believed that the formation of adhesions could be lessened by frequent small doses of nux vomica. He found that patients derived considerable comfort from a sandbag on the abdomen. Patients should be kept in bed for three weeks.

Dr. J. E. Gemmell (Liverpool) gave hyoscine and atropine before operation; less anæsthetic was then required. He considered that mental and physical rest, when the patient was in pain, was best obtained by one-eighth of a grain of morphia; this might be repeated if necessary.

Dr. T. B. Grimsdale (Liverpool) at one time used to wash out the stomach before the patient left the operating-table. Vomiting was certainly lessened in this way, but the advantage was not sufficiently marked to warrant him in advocating this as a routine measure. He also gave morphia to relieve pain, and kept the patient in bed for three weeks.

Dr. A. W. W. Lea (Manchester) liked to have the patient in bed for at least two days before operation. He had found alum in enemata of considerable value in intestinal paresis. He gave morphia.

Dr. D. Lloyd Roberts (Manchester) had a rooted objection to the use of morphia. He kept patients in bed for one week, when possible, before operation and for three weeks after.

Dr. W. K. Walls (Manchester) laid stress on the mental preparation of patients; it was of great importance to gain the patient's confidence. She should not be kept waiting in bed too long. Free preparatory purgation was likely to increase post-operative vomiting. The after comfort depended very largely on the way in which the anæsthetic was given.

Dr. H. Leith Murray (Liverpool), as the result of bacteriological experiments, had shown that an iodine-spirit solution was not so strongly bactericidal as a solution of iodine in acetone.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on Dec. 17th, 1909, Dr. J. B. Hellier, the President, being in the chair.—Mr. H. Secker Walker showed a case of Chronic Glaucoma in a woman, aged 71 years, treated in the left eye by a modified La Grange operation—i.e., excision of a wedge-shaped piece of sclerotic just above the corneal margin—and a peripheral iridectomy, which might be quite small. The result was a weak spot in the sclerotic, through which filtration might take place. The pupil remained circular.—Dr. A. G. Barrs showed a case of Banti's Disease in a woman, aged 29 years, who had two attacks of hæmatemesis occurring respectively nine months and three months ago. Ascites appeared subsequently. The spleen was greatly enlarged. The abdomen had been tapped on several occasions. Examination of the blood showed marked anæmia of the chlorotic type.—Mr. H. de C. Woodcock demonstrated Detré's Reaction to Differentiate Human from Bovine Tuberculosis. He also showed 12 patients to demonstrate Woodcock's Blister Reaction. He considered this reaction to be superior to both Calmette's and von Pirquet's reactions. He described the technique as follows. Two small blisters were placed one on each side of the sternum and kept on for 12 hours. The blistered surfaces were washed with ether and with chloroform and were allowed to dry for five minutes. One drop of Koch's tuberculin (O. T.) was put on a piece of oiled silk cut so as to cover one of the blistered surfaces to which it was then fixed by gently rubbing the oiled silk in order to press the tuberculin into the skin. The other, or control, blistered surface must also be rubbed in the same way while covered with oiled silk. After 12 hours the control surface was still pale while the surface to which the tuberculin had been applied was very red and had a rosy halo round it.—Professor H. Littlewood showed two cases of Gastro-enterostomy with recurrence of the symptoms. The first patient was a man, aged 38 years, with chronic ulcer of the lesser curvature of the stomach for which posterior gastro-enterostomy was performed in 1907. The second operation was performed in March, 1909, when changes were found suggesting the commencement of spheroidal-celled carcinoma. The second patient was a man, aged 31 years, on whom posterior gastro-enterostomy for duodenal ulcer was performed in 1905. The second operation was performed in 1909.—Mr. Alexander Sharp showed a man, aged 45 years, with Audible Tinnitus. He complained of a "scraping noise" in the right ear which began 12 years ago after a "chill" and has been constant ever since. The power of hearing and the appearance of the membrana tympani were normal. The murmur could be heard if the observer placed his ear close to the patient's ear. With the otoscope the "scraping noise" was heard very distinctly. It was not unlike a very harsh cardiac murmur, and was synchronous with the pulse. Turning the head to the right side modified the sound, and it could be made to disappear by firm pressure over the right carotid artery. Heard with the stethoscope it was very loud and could be recognised over any part of the head.—Mr. Walter Thompson showed a man on whom Gastrostomy for Malignant Disease of the Œsophagus was performed 12 months ago.—Dr. A. L. Whitehead showed a case of Mastoid Disease with Extra-dural Abscess and Temporo-sphenoidal Abscess, for which the radical mastoid operation was performed on Sept. 30th. Recovery was uneventful.—Dr. A. Bronner showed a case of Hypertrophy of the Mucous Membrane of the Trachea in a man, aged 55 years, causing recurrent attacks of laryngitis, demonstrated by direct laryngoscopy.—Mr. S. W. Daw showed a case of Compound Fracture of the Humerus with fixation of the lower fragment to the shaft by a metal plate and screws, so restoring continuity and enabling passive movements to be made on the third day.—Dr. C. Oldfield showed a patient who had been operated on for Ectopic Gestation to near full term. There had been retention of fœtus for 12 months, suppuration of the sac, and rupture into the colon. The menses stopped in the early summer of 1908. The only time that the patient was seen by a medical man was a year ago, when she appeared to be at full term. On Nov. 27th the abdomen was opened and a fœtus was extracted from a sac, which also contained foul fæcal pus and gas. On the left side in the depths of the sac there was a button-hole opening into the bowel, from which yellow liquid fæcal matter ran freely. Formed fæces were now passed voluntarily per anum, and the wound discharged only a little greenish pus.—Mr. B. G. A. Moynihan showed a case of Dysphagia occurring in a woman, aged 38 years, for whom gastrostomy had been done elsewhere two years ago for supposed malignant disease of the œsophagus. The diagnosis of cardio-spasm was made and the use of the X rays revealed an enormously dilated œsophagus along which peristaltic waves were seen to travel. A bullet attached to a silk thread was swallowed and 27 feet of the thread passed down the œsophagus until the bullet was recovered from the rectum. The twisting of the silk in the intestine gave a fixed point so that the oral end of the silk being held taut a hollowed bougie could be passed over it into the stomach and the cardio-spasm overcome. The patient has gained weight and was taking food much better than formerly.—Dr. W. H. Maxwell Telling showed a case of Headache occurring at intervals due to Nodular Mycsitis of the Muscles of the Neck in a man aged 28 years. The muscles presented numerous nodular and doughy thickenings, which have almost entirely disappeared under massage, with alleviation of the headache.—Other cases were shown by Dr. T. Wardrop Griffith, Dr. E. F. Trevelyan, Mr. H. Collinson, and Mr. Michael A. Teale.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Dec. 10th, 1909, in the out-patient department of the Western Infirmary, with Professor R. Muir, the President, in the chair, and took the form of a clinical and pathological demonstration by the staff.—A large number of card specimens were shown, and the following cases were demonstrated:—Dr. J. Walker Downie: (1) Case of Stenosis of the Larynx; (2) a boy recently operated on for Removal of a Large Thyro-hyoid Cyst; and (3) some recent cases of Radical Operation for Cure of Empyema of the Antrum of Highmore, &c.—Dr. J. Stoddart Barr: Cases illustrating (1) Congenital Syphilitic Disease of the Labyrinth; (2) Auditory Vertigo; and (3) some of the Pathological Appearances seen in the Tympanic Membrane and Tympanum during the course of, and consequent upon, Chronic Otorrhœa.—Dr. J. G. Tomkinson: A series of cases including (1) Ichthyosis Simplex; (2) Pityriasis Rubra Pilaris; (3) Extensive Rodent Ulcer; (4) Tubercular Ulcerative Syphilide treated by intramuscular injection; (5) Syphilitic Elephantiasis, treated by intramuscular injection; (6) Generalised Lupus Vulgaris; (7) Lupus Erythematosus; (8) Extensive Favus, treated by Sabouraud's method; and (9) Tinea Tonsurans, treated by Sabouraud's method.—Dr. J. Crawford Renton: (1) Two cases of Excision of the Elbow-joint, with X ray photographs showing reproduction of the bones removed; (2) Pylorus removed for malignant disease (recovery); and (3) Cancer of the Colon (two cases).—Dr. J. H. Nicoll: A case of Hypertrophic Stenosis of the Pylorus; also several cases of the condition treated by operation.—Dr. R. Stockman: (1) Case of Tetanus; and (2) case of Amyloid Disease.—Dr. W. MacLennan: (1) Case of Splenomegaly with Blood Changes; and (2) case of Acromegaly.—Dr. R. Barclay Ness: (1) A girl, aged 5 years, with Chronic Polyarthritis and Enlargement of the Lymphatic Glands (Still's disease); and (2) a man with Addison's Disease.—Dr. Alexander MacLennan: (1) Four cases operated upon for Cubitus Varus (with special reference to the prevention and treatment of the deformity); and (2) a case where a Toenail was Transplanted to the Thumb.—Dr. Cruickshank (for Dr. Dalziel): (1) Case of Multiple Chondromata of Fingers; and (2) a series of patients operated on for Malignant Disease of the Tongue, Fauces, &c.—Dr. A. B. Sloan: A case with Marked Retraction of the Heart to the Left, due to fibroid changes in the lung.—Dr. Archibald Young: A case after operation for Forward and Upward Dislocation of the Head of the Radius.

PRESENTATION TO A MEDICAL MAN.—At the annual distribution of medallions and certificates in connexion with the Midland Railway Ambulance Corps (Bristol division), which took place at St. Philip's Station, Bristol, on Dec. 20th last, Dr. James Smith Mather was presented with a handsome carriage rug in appreciation of his services as honorary surgeon to the corps for the past six years.

Reviews and Notices of Books.

The Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc. Lond., F.R.C.P. Lond., Emeritus Professor of Medicine and Clinical Medicine at University College; Consulting Physician to University College Hospital and to Brompton Hospital for Consumption and Diseases of the Chest. Tenth Edition, with Appendix, 1909. London: H. K. Lewis. Pp. 1410. Price 12*s.* 6*d.* net.

IN our review of the tenth edition of this work, which was published in THE LANCET of Jan. 20th, 1906, p. 163, we expressed the favourable opinion which we had always held of this well-known text-book, and pointed out the additions which had been made since the previous edition had been published. The volume before us is a re-issue of the tenth edition, with an Appendix, dated 1909, bringing the treatise up to date. Dr. Roberts rightly points out that the changes and developments affecting the progress of modern medical science and practice are so numerous and rapid that it has become an almost impossible task to keep up with them during the revision of a general work of this kind so as adequately to incorporate their results in the text. This applies more particularly to the investigations which have been made in the domain of the infectious diseases. A brief summary of the more striking and real advances which have been made is therefore given in the form of an appendix.

When the article on immunity contained in the tenth edition of the book was written Sir Almroth Wright's "opsonic theory" had hardly been enunciated. Dr. Roberts has therefore taken the opportunity of considering this doctrine from a general point of view and indicating its chief practical bearings, and it is further referred to in relation to the more prominent individual infective conditions with which it has been more particularly associated. The phenomena of auto-inoculation and of hetero-inoculation are described and their practical applications are discussed.

In the consideration of enteric fever, the interesting problem of typhoid carriers is mentioned, and the question of diet in this disease is touched upon. Seibert's milk-free fluid diet is referred to, the advantage of the method being, according to this observer, the elimination of fermentation of undigested milk. With due precautions, however, Dr. Roberts is still in favour of a milk diet in the majority of cases.

The occurrence of numerous epidemics of cerebro-spinal fever in different countries during recent years has given opportunities for investigation which have led to important results, and the various facts which have been brought to light as regards the nature, spread, and treatment of the disease are here duly chronicled.

Sleeping sickness and Malta fever also receive attention, and the agency of goat's milk in spreading the latter malady is fully admitted. The pneumococcus infections are also discussed, and a good account is given of the various manifestations which may be met with as a result of these infections.

Attention is drawn to a few of the more prominent points in connexion with the innumerable investigations which have been carried out during recent years in relation to tuberculosis. The discussion which has taken place as to the relationship between "human" and "bovine" tuberculosis is touched upon, and the use of tuberculin in diagnosis and treatment is briefly considered. Dr. Roberts supports the opinion, now generally held, that when properly carried out and duly regulated the treatment of tuberculosis by tuberculin and sera is of decided value.

Short accounts are also given in the Appendix of advances which have been made as regards the nature and treatment of other diseases, the usual classification being adopted of considering the maladies under the particular systems of the body which they affect.

The complete work is now bound in one volume, which renders it more convenient both as a text-book and for reference. We have only cordially to repeat our former favourable opinion of the book.

Klinik und Atlas der Chronischen Krankheiten des Zentralnervensystems. By Professor Dr. AUGUST KNOBLAUCH, Director of the City Infirmary of Frankfort-on-the-Main. Berlin: Julius Springer. 1909. Pp. 608. With 350 illustrations in the text, some coloured.

THE common reproach that "on the Continent they do things better" is in particular true of the utilisation for teaching purposes of the abundant clinical material of infirmaries and poorhouses. The elegantly printed and illustrated volume under review is a fresh proof of this contention. Some years ago a holiday course of three weeks on the chronic diseases of the nervous system was projected by Dr. Knoblauch, and conducted by him at the City Infirmary of Frankfort. Its success was such that what was originally intended to occupy a week or two in summer has now developed into a regular series of clinical lectures and demonstrations held weekly throughout the winter terms. The material at this infirmary, we venture to say, is not necessarily more abundant or more varied than what is to be found in many of our large English infirmaries, but when it is, so to speak, transformed into a set of lectures such as this book contains we are astonished at the instructiveness and interest that may thus be provided.

While the variety of the clinical cases no doubt constitutes the charm of the lectures, from the point of view of the audience, it is at the same time somewhat of a drawback when we take up the book. The subjects range from herpes zoster to leprosy, and from hysteria to cerebral tumours. We have chapters or sections on osteomalacia, athyreosis, cretinism, idiocy, infantilism, and exophthalmic goitre, and on other topics whose connexion with the central nervous system is still more problematical. The author has endeavoured to introduce some sort of system into his work, and has grouped his material under the headings "Diseases of the Muscles," "Diseases of the Cerebral Section of the Cortico-Muscular Paths," and so on; yet we find no fewer than 150 pages, or a quarter of the book, devoted to tabes and disseminated sclerosis, while the symptoms of cerebral tumour are dismissed in two. There is little that is new or novel in the volume; many of the diagrams are borrowed from accepted text-books; on the other hand, the photographs of patients are altogether admirable, and so far as they go are not surpassed by any atlas of nervous diseases with which we are acquainted.

One of the most readable chapters in the book is that on myasthenia and Thomsen's disease. Dr. Knoblauch lays great stress on the presumed existence in all vertebrates of two kinds of muscle fibre—the "quick" and the "slow." The former are pale in colour compared with the more ordinary "red" muscle fibres and are readily distinguishable by the naked eye in the muscles of birds and mammals. The pale fibres are the first to respond to an innervation, but they tire almost immediately, whereas the red fibres react more slowly but thereby are capable of continuing the innervation. Basing his theory on these statements, Dr. Knoblauch declares that a pathological increase of the pale at the expense of the red fibres in myasthenia gives us the key to the mystery of the disease. The alteration in the proportion of pale to red is in all probability of congenital origin. *Vice versâ*, in myotonia congenita or Thomsen's disease we have a condition where there is a pathological diminution of the pale fibres and corresponding increase of the red. Such theorising is no doubt suggestive, but the basis of ascertained fact on which it is erected is at present exceptionally inadequate, if not entirely mythical.

The chapters on tabes and disseminated sclerosis are well written and very complete, but, of course, they cover familiar ground and might well have been more concise. One or two remarks are rather surprising. We are told that in about 50 per cent. of cases of the latter "an ophthalmoscopically visible true optic neuritis" is met with. We are further told that the transience of the sensory changes in disseminated sclerosis, as compared with their permanence in hysteria, is an important point in differential diagnosis. Statements such as these are so grossly inaccurate that they detract much from the favourable impression which a first glance through the volume affords.

One of the obvious advantages of work in an infirmary is that a patient suffering from a chronic disease may be kept more or less permanently under observation, and his case may be followed for years, with opportunity for re-examination from time to time. A well-known case in point is given in detail by Dr. Knoblauch, that of a patient diagnosed in 1878 as suffering from general paralysis, and presenting at that time an unusually complete picture of the disease. At one time death was daily expected, but the patient began to improve, so much so that an entire disappearance of the symptoms led to his case being published in 1884 by Tuczek as one of general paralysis cured. Shortly thereafter it was found that his knee-jerks were no longer obtainable, and signs of tabes began to appear. His case was followed carefully till his death in the infirmary in 1898, when the characteristic degenerations of tabes were found in the cord, the usual pathological indications of general paralysis being conspicuous by their absence. Thus the case became one of permanent value in the literature, a result to a great extent attributable to the infirmary system.

This handsome volume will, we think, prove most attractive to those who have the good fortune to be familiar with the cases therein described, and will serve to refresh the memory by its photographs and diagrams. Its general interest is slighter, for as a clinical atlas it is incomplete, and as a textbook it is unsystematised.

The Arteries of the Gastro-Intestinal Tract with Inosculation Circle. By BYRON ROBINSON, M.D., Professor of Gynæcology and Diseases of the Abdominal Viscera in Chicago College of Medicine and Surgery. With 88 figures. Chicago: Chicago Medical Book Company. 1908. Pp. 222.

THE author of this monograph has borrowed the style and language of a vendor of patent medicines to describe a most excellent series of observations on the distribution of the arteries to the abdominal viscera. In this work he brings together the results gained during the dissection of 65 human subjects; the variations in the origin and distribution of the abdominal vessels are tabulated, and 88 most faithfully executed drawings are reproduced showing the "inosculation circles" of the abdomen. "The intention of this book," writes the author in the preface, "is to expose from the solid ground of nature [*sic!*] anatomy and physiology of the *arteries* and *inosculation circles* of the gastro-intestinal tract for the utility of medicine and surgery." He does not hesitate to allow his candid friend, Dr. Thomas G. Atkinson, to state in an introduction to the monograph, that "the influence of this contribution to anatomy and physiology upon medicine and surgery can hardly be over-estimated," and that "probably no one man has made more original or valuable contributions to anatomical knowledge " than the author of this monograph. Although we cannot endorse Dr. Atkinson's statements, we freely admit that those engaged in "the progressive advancement and blooming of intestinal surgery" (to borrow the author's phrase) will find here a more detailed account of the blood-supply of the intestinal tract than elsewhere.

Dr. Byron Robinson claims what he names the "inosculation circle" as his special discovery. His real discovery, of course, is not the anatomical fact that the arteries to the stomach and bowel form anastomoses, but the meaning he attributes to anastomosis. The object of the "inosculation circle" is, in his opinion, "to engorge its peripheral viscus and to transport blood volume from one viscus to another." Further, he supposes that each "inosculation circle" has a nerve mechanism which leads to a circulatory engorgement of the organ supplied by that circle. Few medical men will be prepared to accept Dr. Robinson's explanation of arterial anastomoses, and yet it is doubtful if the orthodox explanation accepted by most medical men is much more satisfactory.

Diseases of the Pharynx and Larynx. By Dr. E. J. Moure, Surgeon, Nose, Ear, and Throat Department, Faculty of Medicine, Bordeaux. Translated and adapted by J. Malcolm Farquharson, M.B. Edin., F.R.C.P. Edin., Lecturer on Diseases of the Nose, Ear, and Throat, School of Medicine, Royal College of Surgeons, Edinburgh. With 210 illustrations. 1909. London: Rebman, Limited. Pp. 403. Price 12*s.* 6*d.* net.

Dr. Moure's work as a laryngologist has a world-wide reputation, but his book on the pharynx and larynx is not well known in England. Dr. Farquharson has performed a most useful task in editing an English edition. We are immediately struck with the skilful subdivision of the various diseased conditions, especially in diseases of the pharynx, which is far more minute than is usual in English treatises, and must, if the teaching in Dr. Moure's book be followed, facilitate the selection and application of appropriate remedies. Under pathology of the pharynx we find erythematous angina, pemphigus, acute catarrhal angina, acute tonsillitis, herpetic angina, acute ulcerative lacunar tonsillitis, ulcero-membranous angina, pseudo-membranous angina (non-diphtheritic), diphtheritic angina, and tonsillar and peritonsillar abscess, the latter being variously subdivided. It must be obvious that however skilful the writer may be who groups these numerous anginæ under a few heads, his readers will have usually greater difficulty in selecting an appropriate remedy than if they referred to a work with greater minuteness of subdivision. It is also of far greater interest to the student to find that the usual "sore-throat" has so many varieties. And in great measure the same close attention to detail is exhibited in the portion of the book bearing on diseases of the larynx.

Numerous prescriptions are to be found in the text and will be of quite as much value in their way as the descriptive text is in its way, for it is well known that patients with experience of French and English medicines consider the former the less objectionable.

Dr. Moure's book, so admirably translated by Dr. Farquharson, should receive a ready welcome, and will be of considerable value both to teachers and to students.

LIBRARY TABLE.

Bau und Entwickelung der Mundhöhle des Menschen unter Berücksichtigung der Vergleichenden Anatomie des Gebisses und mit Einschluss der Speziellen Mikroskopischen Technik. Lehrbuch für Zahnärzte, Aerzte, und Studierende. Von Privat-dozent Dr. Guido Fischer, Zahnarzt und Leiter der zahnärzlichen, der Königlichen Universität Greifswald. (*The Structure and Development of the Human Mouth.*) With 18 plates and 340 illustrations. Leipsic: Werner Klinkhardt. 1909. Pp. 436. Price M. 16.—This is an elaborate and interesting account of the mouth in man, considered especially with reference to the structure of the mouth in many of the lower animals. From the position of the author as dental surgeon in the Dental Institute in the University of Greifswald it is only natural that in this book more attention is paid to the teeth than to most of the other structures of the mouth, but the other parts are by no means neglected. The first chapter deals with the cavity of the mouth in general. The second is concerned with the lips, the cheeks, and the muscles of mastication, while the third deals with the tongue and the glands of the mouth. Two chapters are devoted to the bones of the jaw, and then come several chapters concerned mainly with the structures of the teeth. In the second part we have the comparative anatomy of the teeth in the various classes of mammalia. This is a very interesting section, and is well illustrated with reproductions of photographs from the jaws of many of the lower animals. In the third part of the volume is given a very complete account of the microscopical anatomy of the teeth, both during development and when fully formed. In the fourth part the author has provided an excellent description of the methods of examining microscopically the various tissues composing the teeth. He describes their decalcification, their hardening, imbedding, staining, and cutting. The whole work is satisfactory in design and execution, and we would specially praise the very numerous illustrations which adorn its pages; some of these are coloured, and, taken altogether, they represent the most modern aspect of book illustration. A work such as this should prove of interest not merely to dental surgeons, but to all the members of the medical profession.

Home Exercises for Health and Strength. By Filip Sylvan, M.D. Berlin. London: Eveleigh Nash. 1909. Pp. 122. Price 2*s.* 6*d.* net.—This little volume consists of two equal parts. The second, or essential one, presents a series of 35 excellent photographs illustrating simple exercises which require no apparatus, but are such as anyone could perform in his bedroom. Each exercise is briefly and sufficiently described in simple language. To those who would have the patience and perseverance to follow them, these exercises would undoubtedly be useful. The first half of the book consists of a somewhat turgid and unnecessary introduction, into which anecdotes of Solon and Anacharsis are dragged, together with a tirade against the use of alcohol by nursing women, which may be perfectly justifiable, but which has nothing to do with gymnastics. It is not admitted by all obstetricians that the promiscuous practice of gymnastics tends to easy parturition, as Dr. Sylvan suggests. All Greek scholars will resent the spelling of "Sythian"; it is indefensible.

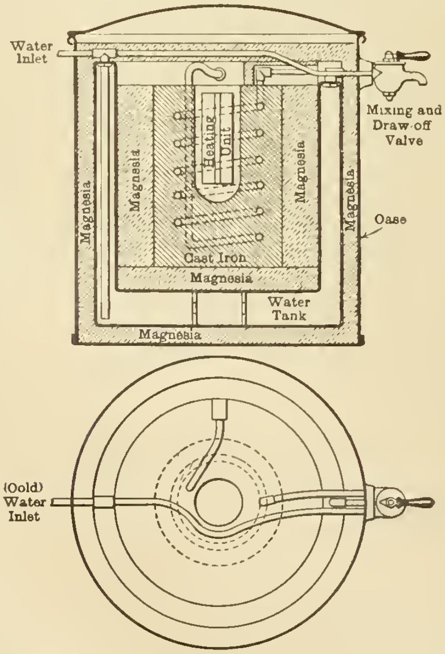
The Common Weal: a Study of the Federal System of Political Economy. By Alfred P. Hillier, B.A., M.D. Edin. London: Longmans, Green, and Co. 1909. Pp. 162. Price 4*s.* 6*d.* net.—The established custom of this journal has been always to eschew political controversies unless they have an essential and direct connexion with medicine. So well understood is our rule that it is probable that we have only been favoured with this work for notice on account of the fact that the author is a physician. Dr. Hillier has lived a good part of his life in the South African colonies, and has had wide contact with social and economical conditions in the British colonies and America. Dr. Hillier has also, by his work on the treatment of tubercle and his writings on the subject, commanded a deserved attention from the medical profession. He is not an amateur in medicine, and a perusal of this book shows that he is not an amateur in political economy. It is not our province to comment on such a question as Tariff Reform unless an author argues that the practice of medicine is affected one way or another by its proposals. Dr. Hillier advocates a British and intercolonial Zollverein. He is clearly familiar with the literature of the subject, and especially with its classics—Adam Smith, Hamilton, and List. The writing is moderate and restrained in tone, and the reasoning sustained and effective. This is a notable addition to an already large literature on a subject which is commanding much public attention.

The New Baby Book. Revised and improved edition of "How to Manage a Baby." By Mrs. FRANK STEPHENS. London: Horace Marshall. Price 1*d.*—The publishers claim for this little book a circulation of 200,000 copies. We can quite imagine that this is true, and if so it is a matter for congratulation. The information cannot fail to be of use to any young or prospective mother. The directions in general are sound, well arranged, and easily to be understood, while they do not encroach upon the province of the medical man. Cocoa is not so nutritious as the author seems to think, and what is the oily substance in colostrum which "supplies the necessary purgative"? But, as we have said, the pamphlet as a whole is good.

New Inventions.

THE "THEROL" ELECTRIC WATER HEATER.

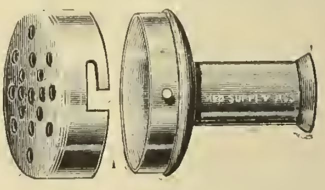
SO far the attempt to utilise the electric current for domestic heating purposes seems to have failed principally because the amount of current used is extravagant for the result obtained, the electric energy expended being incommensurate with the calorifying effect produced. The successful application of the electric current for heating purposes can be, however, provided by carefully insulating the heat which can be generated from it. An important step in this direction has been made by Messrs. Spagnoletti, Limited, of Goldhawk Works, Goldhawk-road, London, W., who aim at the storage of electrical energy in the form of heat, for which purpose they construct an electric water heater called by them the "Therol." The apparatus was recently described to us by this firm as one which supplied a satisfactory answer to some observations we made in an annotation in THE LANCET of Nov. 20th, 1909, in which reference was made to the important economies which would be effected if only greater attention were given to the insulation of our domestic heating arrangements. The construction and working of the Therol heater will be understood from the accompanying illustration. In its simplest form the apparatus consists, in the words of its inventors, of a block of iron cast about a coil of pipe and encased in a thick coat of heat-insulating material. The block of iron is continuously heated by means of electricity, and water, when required, is passed through the pipe. By this means a constant current is taken from the mains and hot water is always available in any quantities provided the average amount does not exceed a certain quantity depending upon the fixed amount of electricity consumed. The most important fact about the Therol heater, to our mind, is that the heat is stored and is always available, and a temporary cessation of the supply of current does not entail a cessation of the supply of hot water but only a reduction of the amount available. If, therefore, the heater is disconnected during the hour or so of the lighting peak it has, as far as the central station is concerned, a load factor better than 100 per cent., for it gives an increased consumption without requiring any addition to the plant or capital of the station to meet its demand. This advantage is the outcome of an efficient system of insulating and storing the heat produced by the electric current.



It is stated that the cost of the electricity used is very small and compares favourably with that of gas used in hot-water apparatus. Lastly, apart from the great convenience of having a hot-water supply always available, the system obviously disarms any adverse criticism that could fairly be based on hygienic considerations. There are no objectionable products of combustion to deal with, and there is no danger of any kind attending its operation. It answers admirably in hospital and surgical practice.

IMPROVED INHALER.

THE inhaler shown in the figure has suggested itself to me for the inhalation of medicated air in the treatment of diseases of the respiratory tract. Its special features are: 1. It consists of two simple parts, having nothing to wear out or go wrong. 2. It is made of a light but strong white metal, which admits of it being boiled in soda solution and thus easily rendered aseptic after use. 3. It admits of no erosion in contact with the atmosphere or absorption of septic matter. 4. It is unbreakable and can be used with both hands free, and thus allow the user to follow his or her usual vocation.



Method of using it.—A pellet of absorbent wool is [dipped into any suitable medicament and then placed in the centre of a small round plate of the same material. The wool plate is then folded in over the pellet and placed in the mouthpiece. The end-piece is fixed on by means of a bayonet catch. Begin using by blowing strongly outward; this clears the wool from the mouth-piece. The inhalations should be done by long, slowly drawn inspirations until the lungs each time are fully inflated. The breath should be held for some time and then allowed to pass out by the nostrils. This inhaler has been made for me by the Medical Supply Association, of 228, Gray's Inn-road, London, W.C.

Maida-vale, W. ALEXANDER ROSS.

THE JOHN HERBERT WELLS FUND.

THE following is the ninth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	*s.*	*d.*
Messrs. Parke Davis and Co.	10	0	0
Dr. A. C. Inman	5	0	0
Dr. R. Reginald Miller ...	3	3	0
Mr. Adolph Tuck	3	3	0
Hon. Mrs. Henry Littleton	3	3	0
Dr. Philip Frank	2	2	0
Rt. Hon. Lord Avebury	2	2	0
Mr. Arthur L. Baxter ...	1	1	0
Mr. F. J. Dryhurst... ...	1	1	0
Lieut. H. M. Inman, I.M.S.	1	1	0
Mr. Harold Clapham ...	1	1	0
Capt. J. Hay Burgess, I.M.S.	1	1	0
Anonymous (Sierra Leone)	1	0	0

THE LANCET.

LONDON: SATURDAY, JANUARY 8, 1910.

The Recent Work of the Local Government Board.

THE authors of Blue-books—for each has, we believe, many—must sometimes feel a little disappointment at the want of enthusiasm with which their painstaking efforts are received by the public; in fact, the cynic has said that the surest route to an unknown grave is to be a writer of Blue-books, an opinion which, although not wholly true, has a substantial basis. Blue-books, more especially those which take the form of records known as annual reports, are not, as a rule, attractive reading; they do not appeal to the imagination, and it is but rarely that any expression of opinion is ventured upon from one cover to the other. They are written nearly always in a dry, unattractive style with no digressions and with but rarely any illustrations to relieve the monotony of their story or to lighten the burden of their statistical tables; and, lastly, they of necessity appear when some of the facts which they contain, and which would otherwise have been full of interest, have passed into history, or at any rate have become more or less common knowledge. Yet Blue-books form our most important literature; only through them do we possess a continuous record of our national business year by year and a knowledge of the highly complex machinery under which the administrative world works. We have heard the Civil Service spoken of as a great conspiracy of silence, a description of it which in these days of *réclame* is an eloquent testimony to its merits. Governments come and go with all their disturbing influences, but the Civil Service, adapting itself to the exigencies of the situation, and serving each side with equal loyalty, holds on its way; and of its *personnel* little is ever heard until perchance an occasional unknown name appears in the honours list and the worker passes to his well-earned retirement. Of all the Government departments the one which is in closest touch with the daily lives of the people is the Local Government Board, and the mere perusal of the index of any of its annual reports will suffice to show this. Hitherto these reports have been published in one volume which of late years has become a somewhat unwieldy tome, but it appears that in future certain of the parts are to be published separately, an arrangement which will save expense to the public as it will enable those who wish to inform themselves of, say, Poor-law only to purchase separately that part of the report in which they are interested. Part II. of the report for 1908, which is now before us, deals with (*a*) county council administration; (*b*) public health and local administration; and (*c*) local taxation and valuation; and of these sections it is the second which will have the greatest interest for readers of THE LANCET. It is, however, important to note that certain of the matters dealt with in this section will be more fully treated of in the forthcoming annual report of the medical officer of the Local Government Board which we shall notice in due course. All we propose to do now is to bring before our readers the activity of this great department by briefly mentioning some of its recent work.

Since the year 1871, when the Local Government Board was constituted, there has been sanctioned by the department the borrowing of money by urban and rural authorities amounting to the enormous total of £184,262,578, a large proportion of which has been devoted to matters connected with the public health—a fact which indicates the heavy responsibilities which devolve upon the Board in sanctioning these loans and in auditing the accounts to which they in part relate. In the matter of the compulsory purchase of land not otherwise obtainable there were issued during 1908 19 Orders, a number which should be very materially increased under the provisions of the Housing and Town Planning Act which has just received the Royal Assent. The voluntary employment of adoptive Acts is a subject that in a measure indicates the progress in sanitary conception made by local authorities in the country, and we are told that up to Dec. 31st, 1908, no less than 703 urban and 318 rural authorities had adopted that very useful measure the Infectious Disease (Prevention) Act, 1890, while steady progress has been made as regards the adoption of Part III. of the Public Health Acts Amendment Act, 1890. Records are furnished in the report of the work carried out under the Alkalies Acts, the Burial Act, and the Canal Boats Act, as well as under the Housing of the Working Classes Act, while there is a very useful summary of the operations of the Metropolitan Asylums Board for the year 1908. During that year 31,447 cases of "fever" and diphtheria were notified, 22,071 of which were scarlet fever. Of these scarlet fever notifications 90·9 per cent. were admitted into hospital, the corresponding percentages of diphtheria and enteric fever cases being 81·4 and 50·4. The fatality rate of the scarlet fever was 2·6 per cent., of the diphtheria 9·7 per cent., and of the enteric fever 16·3 per cent. The laboratory work of the Metropolitan Asylums Board is gradually undergoing extension, and in addition to 23,500 doses of antitoxin supplied to the fever hospitals in 1908 a large amount of diagnostic and clinical work was carried out. As bearing upon this class of work reference may be made to an important appointment made last week by Mr. BURNS in connexion with the pathological work of the Local Government Board. One of the pathologists of the Royal Commission on Tuberculosis, Dr. ARTHUR EASTWOOD, has been appointed an additional medical inspector, and the immediate object of this appointment will be to apply to public health work the very important results obtained by the Royal Commission referred to, and by this means to ensure the freedom of foods from tuberculosis. But it is also intended to extend investigation into the pathological methods of the diagnosis of diseases, and arrangements have already been made for the necessary assistance and laboratories. The amount of work devolving upon the Local Government Board in dealing with the annual reports of medical officers of health may be gathered from the fact that in 1908 there were received in the department 1126 reports from urban districts and 678 from rural districts, and during the same year we are glad to see that as many as 87 local authorities made regulations under the Dairies, Cowsheds, and Milkshops Order, 1885, there being at the end of 1908 only 159 local authorities without such regulations. It is reported, too, that 100 local authorities have at the end of this year arranged for the periodical inspection of milch cows. All this betokens a purer milk-supply.

Water-supply and food-supply are fully and freely discussed in the report. As regards the important subject ot London's water-supply, great progress has recently been made in facilities for the storage of river water prior to filtration, the storage capacity of the Thames valley being in a fair way to amount to 7500 million gallons, and in the Lea valley it already amounts to 2400 million gallons. This additional storage should very greatly increase the security of the water-supply of the metropolis, since all recent work has shown the value of such storage in reducing the number of organisms present, in destroying the vitality of pathogenic organisms, and in increasing the life of the filters, and thus London is by way of presenting to the world an unparalleled example of a population of many millions supplied in great part from a river polluted with sewage effluents over many miles of its course and yet, owing to its careful filtration, doing so without any clear signs of mischief as regards water-borne diseases. It seems to us that the experience of London in a matter such as this cannot be disregarded by the epidemiologist, and it has to be remembered that in former years, when the storage was much less and the filtration less carefully carried out, the same tale as regards absence of water-borne disease had to be told. The risks of filtration are, as the experiences of Hamburg and Altona have taught us, very considerable, but there is, nevertheless, something about enteric fever in London in the past which it remains for the epidemiologist of the future to unravel. The subject of the sale of foods and drugs is another difficult and important subject which is gone into in the report under notice in considerable detail, and attention is drawn to the eminently undesirable practice of inviting applicants for the post of public analyst to state the terms upon which they are prepared to accept the appointment. In the view of the Local Government Board, with which we are in entire agreement, the offering of such appointments "on tender" is open to strong objection. We are also glad to see that the Board is encouraging the practice of informal sampling of food for analysis as the best means of determining the quarters in which a formal attack should be made with the view of bringing habitual offenders to light.

We have not tried to touch upon the subject of county council administration or upon that of local taxation and valuation, nor have we said anything about that overwhelming subject the Poor-law, concerning which such portly volumes have recently been written by the majority and minority of the recent Royal Commission. But all these subjects—indoor and outdoor relief, the treatment of pauper children, medical relief, the care of the insane, together with the subject of unemployment and the rapidity with which motor-cars traverse our streets—are subjects which are controlled by the Local Government Board, and which are guided, in so far as the public is concerned, quietly and unostentatiously by the permanent secretary of the Board, and by his colleagues, the assistant secretaries. Whatever mutations the political kaleidoscope has in store for Mr. BURNS, he must, it seems to us, feel that he has presided during a highly important period over a department of which he has every reason to be proud and which has afforded him an admirable field for his abilities.

◆

The Functions of the Parathyroids.

SINCE the discovery of the parathyroids in 1880 by the Swedish anatomist SANDSTROEM, their function has been more or less of an enigma, and various views have been put forward widely different in character. Recent experimental and pathological investigations have, however, established that when they are diseased or injured the peculiar condition of tetany, which has itself been for long the subject of speculation and hypothesis, frequently results. The whole subject is reviewed in an interesting and instructive manner by Professor ISAAC OTT and Dr. JOHN C. SCOTT in a collection of papers entitled "Contributions from the Physiological Laboratory of the Medico-Chirurgical College of Philadelphia, Part XVIII.," of which we have received a copy. They state that in man there are usually four parathyroids: two on each side, situated in front of the vertebral column just behind the posterior margins of the lateral lobes of the thyroid gland. They are reddish-yellow or reddish-brown in colour, and their size and shape correspond to those of a small grain of Indian corn. They are in close relation with the inferior thyroid artery, from which they usually derive their blood-supply. It has been shown by W. N. BERKELEY of New York in 125 necropsies that they may be as numerous as five or six, but there may be only two or three, or even one. Developmentally they arise as thickenings of the epithelium on the dorsal aspect of the third and fourth visceral clefts. Small accessory parathyroid granules have been found by ERDHEIM in the thymus, and these thymic parathyroids have been found and removed in animals by Professor OTT and Dr. SCOTT. Histologically, the cells in the parathyroid are very different from those in the thyroid. They are described as being of two types—the chief cells and the oxyphile. They form a colloid material which, unlike that of the thyroid, does not contain iodine. Removal of the parathyroids in animals causes tetany, with partial paralysis, especially of the extensors, trembling in all the muscles followed by a series of convulsive attacks, during which the temperature rises, the condition beginning in from 24 to 48 hours. Chemical analyses in cases of tetany in infants show changes in the calcium salts in various organs—e.g., QUEST found the amount of calcium in the brains of three infants dying from tetany to be small, and his results have been confirmed by MACCALLUM and

Voegtlin, who also found that the calcium content in the muscles and in the blood was one-half the usual amount. Oddo and Sarles found that the urine in the tetany of infants contained an increased amount of calcium phosphate, and Silvestri held the view that tetany and eclampsia could be explained by a diminution of calcium in the organism. On the basis of these observations certain salts of calcium have been employed in the treatment of tetany both in the human subject and in animals with good results.

This view that tetany is due to a hypocalcification or to a defect in the metabolism of the calcium salts of the organism resulting from interference with the functions of the parathyroids has, however, not passed unchallenged. The defects in the calcium salts have not been found by all observers, and it has been shown by Beebe that strontium salts are as effective in the treatment of tetany as those of calcium. Numerous observers, including MacCallum and Voegtlin, have found a high percentage of ammonia in the urine and in the blood. Pfeiffer and Mayer found a toxic principle in the serum of 6 out of 17 dogs with tetany after removal of the parathyroids, and they suggest that the ablation of these organs leaves a poison in the blood. A modification of this view is put forward by Berkeley and Beebe, who suggest that the parathyroids form enzymes, which are of great importance in the processes of nitrogenous metabolism, and that the cause of tetany is not lack of calcium but a disturbance of metabolism giving rise to a poison. Professor Ott and Dr. Scott give an account of their experiments. They find that removal of the parathyroids alone causes tetany, that there is a coöperative action between the parathyroids and the pituitary body, and that tetany is not due to want of calcium but to a poison in the blood, the calcium changes being only an epiphenomenon. They state that the tetania parathyreopriva can be greatly benefited by pituitary extract, calcium and strontium salts, and by parathyroid extract, and that the grafting of a parathyroid is a cure for tetany. They also record the results of their investigation of the physiological properties of a nucleo-proteid separated from the parathyroids. This substance proves to be a powerful diuretic, exerting a greater effect in this direction than any other glandular extract, not even excepting that of the pituitary. This action is exerted upon the renal epithelium directly. This substance was also found to increase uterine contractions and intestinal peristalsis.

Some interesting studies of the condition of the parathyroids in various pathological conditions are referred to by Professor Ott and Dr. Scott and are worthy of note as suggesting some new possibilities in treatment. Berkeley and Lundberg have independently suggested the use of parathyroid extracts in paralysis agitans, and cases of this disease have been reported in which changes have been found in the parathyroids. In gastric tetany, in the cases quoted, there do not appear to have been marked changes in the parathyroids, but in some of them parathyroid extract proved to be of value in treatment. In like manner it has been suggested that the tetany of pregnancy and eclampsia are due to parathyroid insufficiency and can be relieved by parathyroid treatment. Post-operative or surgical tetany after removal of the thyroid is doubtless due to coincident removal of the parathyroids, and transplantation should be attempted. Berard and Alamartine have collected from the literature 29 cases of tumours of the parathyroid, of which 3 were malignant. In 24 of the cases the tumour was formed solely of parathyroid tissue. The subject of disease of the parathyroids is obviously one which requires further investigation, and the interesting work of Professor Ott and Dr. Scott should serve to stimulate this and to encourage more extended trials of the therapeutic effects of parathyroid extracts.

◆

Enteric Transmission by Chronic Carriers.

It may be remembered that on several occasions during the late session questions were asked in the House of Commons as to the nature of the treatment which certain military patients were undergoing at the Millbank Hospital. These men were themselves in good health, but being "typhoid carriers" were being treated with antityphoid vaccines, in order, if possible, to put an end to their infectivity. A report has just been issued by the Director-General of the Army Medical Service, dealing with this subject, in continuation of a preliminary memorandum issued in June last.[1] The cases admitted to Millbank Hospital were seven in number, all convalescents from India, and all said to have been "carrier" cases. Two of these were discharged to duty after repeated examinations of the dejecta had failed to recover the typhoid bacillus. As to the remaining five cases particulars are afforded in the report just issued, which contains full details of the treatment adopted, and is accompanied by explanatory charts. Two cases were treated by administration of cultures of lactic acid bacilli; in one case, after three weeks' treatment, the typhoid bacilli disappeared from the stools for four days; they then reappeared and continued in practically undiminished numbers for another week, after which time they disappeared finally, the man being discharged to his duty two months later still free from typhoid excretion. In the other case the result was not definite; the typhoid bacilli excreted diminished in number after a time, but again reappeared in the stools in equal abundance; this case is still under treatment. Three cases were treated with antityphoid vaccine, at first with prophylactic vaccine prepared from a non-virulent strain, and afterwards with a specific vaccine prepared from the carrier's own strain of bacillus typhosus; in two of these a rise was noted in the agglutinins and opsonins during the administration of the specific vaccine, but the excretion of specific bacilli in the urine continued and seemed to be unaffected; in the third case the excretion of germs in the stools showed an intermission for several weeks, but unfortunately the man contracted diphtheria and the experiment came to an end. Two cases were treated with sodium benzoate and acid phosphate of soda in order to increase the urinary acidity and bring about destruction of bacillus typhosus. In one the acidity was brought up to + 33 and the bacilli diminished from 2700 to 7 per cubic centimetre of urine; but in spite of continuance of treatment the urinary acidity again fell and the typhosus excretion increased. In the other case, in spite of a rise in acidity, the excretion of bacilli continued without appreciable diminution.

---

[1] See The Lancet, June 26th, 1909, p. 1840.

It is evident that a great deal of work has been expended on this experiment, but it can hardly be said that so far any clear result has been obtained. As regards the excretion of typhoid bacilli in the stools, it seems doubtful if their numerical count, varying from less than two, up to nearly two hundred, millions per gramme of fæces, often apparently without reason, can be relied on. It is admitted that this "enormous variation is probably to be explained by the varying consistency of the stools, some containing more water than others." Drying would have injured the bacteria and therefore could not be employed; but a measurement of the total quantity of fæcal matter day by day and the application of the figure so obtained to the number of germs per gramme might have materially affected the calculation, or expression, of the total daily output of typhoid bacilli. (Possibly the fæces were brought up to a constant bulk day by day, but this is not stated.) As it is, the "enormous variation" in typhosus excretion can hardly, in our opinion, be proved to have had any relation to the administration of the lactic acid bacilli. The research is difficult and laborious, but we hope that it will be continued. In explanation of the probable reasons why the treatment has not proved effective the report refers to JOSEF KOCH'S recent demonstration of the condition of the gall-bladder in a fatal enteric case—viz., that it is "thickened and filled with papillomatous processes containing homogeneous masses surrounded by necrotic areas"; the homogeneous masses are "collections of typhoid bacilli, the toxins of which had killed the surrounding tissues." Supposing similar changes occur in the typhoid carrier, it follows that "no cure can result in such cases until all the contents of the necrotic areas have been discharged, which may be the work of years."

The report concludes with the recommendation of the Advisory Board that "since arrangements are now being made for early treatment on discovery of these cases, it is desirable that any man ascertained to be a carrier should, after a period of observation in England not exceeding three months, be discharged from the service, unless he elects to remain in hospital for treatment." This recommendation has been approved by the Army Council. From the military point of view no doubt the authorities are justified in getting rid as soon as possible of the incubus of the "carrier." But we know that "the smallest worm will turn, being trodden on," and even the humblest private soldier who has enlisted to defend his country or to see the world may object to being confined to hospital "until all the contents of the necrotic areas have been discharged, which may be the work of years." By the present decision of the Army Council he must in that case leave the service, with, we suppose, no compensation for his loss of time and, possibly, of bodily vigour. It seems to us that every man so discharged, and smarting under a grievance, might be a powerful opponent to the recruiting sergeant. This, however, is a matter which no doubt the Army Council has already considered. From the point of view of public health, it appears that some objection may be raised. The man discharged from the army because he is excreting bacillus typhosus is *ex hypothesi* a possible focus of disease which has been contracted in service. He is returned to civil life in a presumably infective condition. The recommendation of the Advisory Board, approved by the Army Council is, that "the medical officer of health for the district in which he will reside should be notified." We fear that many of these discharged soldiers will not "reside" in any district, but will be wandering about from place to place, seeking for work and discharging bacillus typhosus here, there, and everywhere, under no conceivable sanitary supervision. We understand the military position—the authorities want to get rid of the "carrier": but from the non-military public health point of view we suggest that, so long as he is in the service, the "carrier" is under control and supervision, and can in time be made innocuous, whereas after discharge he would be in most cases (possibly in all) free from either supervision or control, and likely to be a spreader of disease throughout the community.

Our remarks have been based on the consideration that typhoid "carriers" are to be regarded as infective, as to which there seems to be ample proof. Besides the classical outbreaks described by KOCH and his assistants in Westphalia and the Rhine Province, and by Dr. D. S. DAVIES at Brentry and Brislington, the report mentions three similar outbreaks in India in 1906–07 and a series of cases at Aldershot in 1908. We learn that the Indian Government, impressed with KOCH'S results, established at Naini Tal in the Himalayas a depôt for enteric convalescents, where accommodation should be provided away from other troops, and from which carrier cases might be invalided to England for further investigation and treatment. We are confident that this has been a wise policy and that the results will amply justify the expenditure incurred. There does not, however, appear to have been any enteric outbreak amongst the troops at home traceable to convalescents returned from the South African War, and as these are, we believe, computed to have numbered about 20,000 or more, some proportion would presumably be carriers and capable of spreading infection. The admissions for enteric fever in the home garrison for the 10 years 1890–99 were 1·3 per 1000; in 1900 they were 1·3; in 1901, 1·6; in 1902, 1·2; since then they have varied between 0·6 and 0·8 per 1000. No spread of infection, therefore, has apparently occurred in the home army. Nor were there any series of outbreaks throughout the country traceable to this cause on the return of this enormous body of theoretically infective persons from South Africa during 1900–02. The great majority of these men went to their homes for a longer or shorter period, and, it goes without saying, no general measures of prevention against spread were taken. Apparently, therefore, the danger is, at any rate in this country, not urgent; none the less, practical medicine should adopt all preventive measures that have been proved to be useful, and amongst these segregation of enteric convalescents is certainly one. The present method of treatment that has been adopted by the Army Council is therefore to be welcomed, except that we should prefer that the army authorities would retain their "carrier" cases themselves—whether in or out of hospital they would be under military discipline—and not unload them on to the community at large, where we fear they would be neither controlled nor controllable.

Annotations.

"Ne quid nimis."

COSMETICS.

IN every age women, and not infrequently men, have been accustomed to use cosmetics in order to improve their complexions, their hair, or their appearance in general. It is needless to do more than mention the leading case of Jezebel, and in the days of Imperial Rome we find Caligula using a cosmetic to give an added and fictitious dignity, for he is recorded to have sprinkled gold dust in his beard for the purpose of obtaining a superhuman appearance. In earlier classical times women used to paint or apply sundry medicaments to their faces to assume a complexion which they did not really possess. Thus Xenophon in his Oekonomikos makes Ischomachus point out to his wife the absurdity of rougeing, for as he says, "the truth may come out any day." So well was the deceitfulness of the practice recognised that the same word "fucatus" was used in Latin to express both "painted" and "false." Classical satirists and in later times Christian Fathers inveighed against cosmetics in unmeasured terms without much result. For the former we need only refer to Juvenal's scathing lines (Sat. VI., 459-472) in which he describes the rich lady with her face plastered with a paste made of bread-crumb and asses' milk: "Even were she to be exiled to the North Pole she would take her drove of she-asses with her and her face is so covered with plasters and medicaments that you don't know whether it is a face or a sore." For the latter there are many passages in Tertullian and Jerome, while Clement of Alexandria says (Paedagog. III., c. 2): "Not once but thrice are those women worthy of destruction, who use the emanation of crocodiles, who anoint themselves with the froth of the sepedon, who smear their eyebrows with black and their cheeks with rouge." The "sepedon" was a kind of serpent. As for the emanation of the crocodile, it was, according to Pliny (H. N. XXVIII., 8, 28), obtained from the land crocodile, which lives on the most highly scented flowers, and therefore is full of the most pleasant-smelling substance which, "if smeared on with cypress oil, takes away blemishes on the face; if used with water removes all diseases of a creeping nature. It gives the complexion a bloom and removes freckles and other disfigurements." It is difficult to identify this substance, but it was a valued toilet application. It may have been some substance analogous to ambergris. Despite the invectives of satirists and Fathers, cosmetics continued and continue to be used, and, as Dr. Max Joseph[1] very properly suggests in the preface of a little handbook which has prompted these remarks, owing to the subject being neglected by the medical profession it has "unfortunately passed into the hands of unqualified persons." It was not always thus, for nearly every mediæval treatise on medicine contains a section entitled "De Decoratione," in which are given innumerable recipes for complexion washes, rouges, hair dyes, and the like, together with prescriptions for making the breasts firm, for removing wrinkles on the abdomen after childbirth, and other matters of an even more intimate nature. Dr. Joseph in his introduction rightly points out that "cosmetics is not a special science: it is merely a department of dermatology." His simple little book is divided into sections dealing with the cosmetics of the skin, the hair, the nails, and the mouth. The first portion is naturally far the longest, and many recipes are given for complexion washes, powders, ointments, and rouges. The chapter on the hair includes some sound remarks on seborrhœa. Dr. Joseph says of the cosmetic art, "In no other domain do quacks follow their trade so shamelessly," and a glance at the "health column" of any lady's paper or at the advertisements in the popular magazines will show the truth of his statement. Were medical men in general to take a little more heed of the cosmetic art it would be better both for their patients and themselves, and they will find Dr. Joseph's unassuming little book useful. In another edition sundry misprints should be corrected.

A MEDICAL BRANCH OF THE NAVY LEAGUE.

WE cordially invite everyone to take note that a branch of the Navy League has been established, or is in course of establishment, composed of members of the medical profession. An influentially signed letter in this issue describes the new movement. The Navy League is one which has done much good in drawing the attention of the country to the supreme importance of our navy, to the strength and efficiency of which we owe our existence as a nation. We take no heed of party politics here, and we deplore, surely in common with most patriotic citizens, the fact that the state of the navy, which is alleged to be now satisfactory beyond common belief and now unsatisfactory to a deplorable point, should be used as a political counter. But the need of knowing where we are is one that we all must appreciate, as also is the feeling that this generation ought to hand on to posterity unimpaired that position among the nations which our forefathers won for us. The Navy League is chiefly an educational body, and members of the medical profession, who travel widely and meet all sorts and conditions of men, obtain opportunities of acquiring and disseminating information which may be of supreme importance. We can conceive that the formation of a medical branch of the Navy League has great possibilities for bringing about a wider comprehension of the vital problems of our national life, and in that belief we wish it all success.

THE MEDICAL STUDENT AND HIS CURRICULUM.

WE publish in another column an admirable presidential address delivered before the Leeds and West Riding Medico-Chirurgical Society by Dr. J. B. Hellier, President of the Society and Professor of Obstetrics in the University of Leeds. Dr. Hellier sets out very clearly the now thoroughly recognised fact that the time of the medical student is over-occupied and that the statutory period of five years no longer suffices for the average man in which to obtain his qualifications. He faces the awkwardness of this situation by simple recommendations which we are glad to see are very much in line with those made in the series of articles upon medical education which were published in the columns of THE LANCET during the last quarter of 1909. Dr. Hellier's main recommendations are that we should leave off pretending that the medical student's curriculum is of five years' duration, when it actually lasts six years or more; that such things as the details of pharmacy and the minutiæ of anatomy should no longer be committed to memory by the student; and that the preliminary scientific subjects should be mastered by the student before joining the medical school proper. All of these recommendations it is, of course, possible to criticise. It is certainly fair to a medical student that his parents should know that it will probably be six years before he is qualified, for at the present time undoubtedly many hard-working students fall under the suspicion of being lazy or stupid because they do not complete the course in the statutory time. But among medical students there is, of course, a large class that does not work until it is obliged to. These men are not lazy—medical students have little opportunity of being lazy; they only work better under stimulus. This class, if it takes six years to pass when the statutory time is five years, will surely take seven years to pass when matters have been arranged so that qualifications would not be expected for them in less than six years. With regard to the whittling down of instruction in anatomy, there would be considerable difference of opinion as to where it would be reasonable to stop, and if the preliminary subjects could be dealt with by the student before he began his professional studies proper there might be no need for altering the curriculum in this direction. We cordially agree with Dr. Hellier's view that the best entrance to practice is to serve for six months as an assistant in a good general practice. Every young medical man who does this is made thereby into a more efficient public servant; and although the utility of the proceeding is not so obvious when consultant or special practice is being considered, still, experience of the working of a general practice is often of the greatest value to a consultant.

---

[1] A Short Handbook of Cosmetics. By Dr. Max Joseph (Berlin). Authorised English translation. London: Rebman Limited. 1910. Pp. 87. Price 2s. 6*d*. net.

THE POSITION OF COUNTY MEDICAL OFFICERS OF HEALTH UNDER THE HOUSING AND TOWN PLANNING ACT, 1909.

THE Local Government Board has addressed a Circular Order concerning the Housing and Town Planning Act, 1909, to the county councils, drawing attention to certain of its provisions. The very important section relating to the appointment and duties of county medical officers and to county public health and housing committees runs as follows:—"Section 17 of the Local Government Act, 1888, empowered county councils to appoint and pay a medical officer of health, or medical officers of health, and authorised a county council and a district council to enter into an arrangement for rendering the services of the officers so appointed available in the district of the district council. Section 68 of the new Act makes it obligatory upon every county council to appoint a medical officer of health (Sub-section (1)). The duties of the medical officer of health of a county will be such as may be prescribed by General Order of the Board, and such other duties as may be assigned to him by the county council (Sub-section (2)). The Board will in due course issue a General Order on this subject. Sub-section (3) provides that the power of county councils and district councils to make arrangements with respect to medical officers of health under Section 17 of the Act of 1888 shall cease, without prejudice to any arrangement made previously to the passing of the new Act. Sub-section (4) confers on the medical officer of health of a county for the purposes of his duties, the same powers of entry on premises as are conferred on a medical officer of health of a district by or under any enactment. Sub-section (5) provides that a medical officer of health of a county shall be removable by the county council with the consent of the Board, but not otherwise. He is not to be appointed for a limited period only, but the county council are empowered, with the sanction of the Board, to make any temporary arrangement for the performance of all or any of the duties of the medical officer of health of the county, and any person appointed by virtue of any such arrangement to perform those duties or any of them is to have, subject to the terms of his appointment, all the powers, duties, and liabilities of the medical officer of health of the county (Sub-section (6)). A medical officer of health of a county appointed after the 3rd of December, 1909, is by Sub-section (7) prohibited from engaging in private practice, and from holding any other public appointment without the written consent of the Board. Sub-section (8) directs that an Order under the section prescribing the duties of county medical officers of health shall be communicated to the county council and shall be laid before Parliament as soon as may be after it is made, and, if an address is presented to the Crown by either House of Parliament, within the next 21 days on which that House has sat after the Order is laid before it, praying that the Order may be annulled, His Majesty in Council may annull the Order, which shall thenceforward be void, but without prejudice to the validity of anything previously done under it."

RABIES IN INDIA.

WE have received the eighth annual report of the committee of the Kasauli Pasteur Institute issued by Major Bruce Seton, I.M.S., its present secretary, together with the report of the officiating director, Captain R. M. Carter, I.M.S. The report deals with the year 1908, and the total number of patients treated was 1389, as compared with 1349 in 1907. The increase has been confined to native patients, for the number of Europeans has fallen from 433 in 1907 to 342 in 1908; the former year, however, was remarkable for its high admission rate amongst Europeans. The British army furnished 131 patients; the Indian army, 99; European civilians, 159; and Indian civilians, 1000. Since the starting of the Pasteur Institute of Southern India at Coonoor, the number of patients sent to Kasauli from Madras has fallen from 94 to 2, and those sent from Bombay have been reduced from 163 to 124. Cases from Burma will in future probably go to Coonoor instead of Kasauli, but the numbers have not yet been affected. Of the 1389 persons treated at Kasauli in 1908 the percentage of failures was only 0·36, which is the lowest figure reached in the history of the institute. The method of preparing the vaccine now used is that introduced by the late Professor Höyges of Budapest, which differs from Pasteur's original method in that the vaccine emulsions are prepared from fresh instead of dried spinal cords. These can be diluted to any proportion, and the advantages over the old method consist in simplicity of preparation, accuracy of dosage, and lessened disturbance of the patient. Up to the end of 1908 some 2500 patients have been treated by this method and the results would appear to justify the modification in treatment introduced in 1907. The institute gives every facility to those bitten in any part of India, and the director telegraphs his opinion on any case on receipt of either a letter or a telegram. The wisest procedure to adopt in the case of dog bite is to cauterise the wound immediately, to secure the animal if possible and keep it under observation segregated for ten days. If, at the end of the tenth day after inflicting the bite the animal is alive and well, it is not suffering from rabies. If, however, the animal shows any symptoms of rabies the patient should proceed to a Pasteur Institute immediately, and bring with him portions of the dog's brain in bottles preserved in glycerine or Zenker's fluid. He should be accompanied by all persons bitten or licked by the infected animal, and should further try to gather as much information as possible about the animal so as to discover whether other animals or persons have been infected. All such animals should be segregated for six months, and all infected persons should undergo Pasteur treatment at once. Two series of statistics embodied in the report are of peculiar interest as showing instances in which hydrophobia actually resulted from the bites of a rabid dog or jackal. In the case of 108 persons bitten by supposedly rabid dogs and untreated 44 died, and of 154 persons bitten by supposedly rabid jackals and untreated 48 died. Men of all castes avail themselves of the institute treatment, and there is no doubt about the practical value of the good work that is being done. As regards the past year, an Indian correspondent writes that the alarming increase of rabies has caused a large increase in the number of patients treated at the Kasauli Institute. The attention of the Commander-in-Chief was directed some time ago to the prevalence of the disease in cantonments, and a circular letter on the subject has been issued to all divisional generals from the quartermaster-general's office at army headquarters. It is therein suggested that, with a view of keeping rabies under control, certain general measures should be adopted as far as practicable, in cantonments. These include the registration of all dogs, together with a small tax, in return for which a badge would be issued to be attached to the collar, the use of the latter being compulsory; ownerless or stray dogs to be seized, and if not claimed in 72 hours to be destroyed. In cases where native residents might object to the taking of animal life, impounded dogs could be made over to them on a guarantee of safe custody. Another suggestion is that a non-commissioned officer or man (European or Indian) should be appointed to destroy ownerless and rabid dogs on an outbreak of rabies occurring. These are very sensible suggestions, and it is to be hoped that they will be given effect to, for owners are not asked to do very much to contribute towards the public safety. In hill stations such as Simla and Mussoorie the tax and badge system has been applied, and we believe that it works satisfactorily. It is, of course, impossible to stamp out rabies in India, as the disease is common among jackals, but much may be done in cantonments to keep down the number of ownerless dogs. It is essential, however, that municipal committees should coöperate with the military authorities, for action, to be effective, must be combined, in places where cantonments are in close touch with the native town.

SOME HYGIENIC ASPECTS OF MODERN LOCOMOTION.

THANKS to the urgent representations of our public health authorities, the pioneers of the modern accelerated methods of travelling have been made to realise that while speed and economy are desirable objectives, they must not be attained without any regard at all being given to health considerations. Our readers may remember that some years ago we were amongst the first to point out that the new (as they were then) tube railways were becoming a serious menace to health owing to the accumulation of human exhalations in the tunnels, stations, and lifts; there was practically no means of ventilation provided, the engineers having considered that the train going through the tunnel pushed a column of air in front of it and drew one in behind it. But they disregarded the fact that the stale air was not changed for fresh air. Our apprehensions were ridiculed in many quarters until a scientific investigation of the air "on the tubes" was made which proved our view to be correct. Amongst other things there was shown to be present in the air an amount of carbonic acid largely in excess of that normally present in the air outside. Our evidence of pollution was based on the simple observation that the air possessed that peculiar stale, frowsy smell common to air badly polluted by human exhalations. The smell was very obvious even in the street where the lifts were discharging passengers. In spite of the denials which reached us from the representatives of the tube companies themselves we had the satisfaction of learning what their real feeling about the matter was, for shortly after we published our complaints steps were taken to pump out the stale contaminated air of the tube, and to replace it with a fresh supply. The result now is that the condition of the air in the tubes is splendid and there is no trace left of that stale quality which made it nauseating before the excellent system of ventilation was introduced. The tubes are swept out constantly with volumes of fresh air and there are not a few passengers who think that the draught is excessive and that the supply of fresh air is pushed to an extreme, and that in remedying one evil another has been introduced. The mischief done to health (if any) by a strong draught of fresh air needs no attention compared with the well-known and marked poisonous effects of breathing air which has infiltrated through the lungs of thousands. All this is very satisfactory to those who recognise the value of applying hygienic principles, and we welcome again the obviously, though perhaps not completely, successful efforts which are being made to reduce the nuisances occasioned by motor traffic. Not only, for example, have the smell and noxious fumes of the motor omnibus been reduced, but the noise and clatter of the motor machine have distinctly been diminished. This is a matter of common observation, especially when the experience is recalled of the terrorising vehicles which motor omnibuses were when they were first introduced in the streets. They made hideous noises, emitted a nauseous smoke, dropped oil over the roads, and were generally a source of annoyance and nuisance to the public. The motor omnibus is not a perfect vehicle now, but it has been greatly improved, and the improvements have related largely to considerations of health. The offences created were so objectionable that there can be no mistake about their having been removed to a large extent now, and the improvement can scarcely be explained by saying we have got used to the new kind of vehicular traffic or have resigned ourselves to its terrors.

A BIBLIOGRAPHY OF TRYPANOSOMIASIS.

THE Sleeping Sickness Bureau has issued a "Bibliography of Trypanosomiasis"[1] embracing all known original papers on the subject published prior to April 1st, 1909, and including also reference to works and papers on tsetse-flies, especially Glossina palpalis. The compilation, which was undertaken by Mr. C. A. Thimm, the librarian of the Sleeping Sickness Bureau, has proved entirely successful, and has resulted in the gathering together of close upon 2000 references. As was natural, the majority of the references have been obtained from those nations who, from the fact of their having possessions in Africa, were more immediately concerned in the suppression of sleeping sickness. Consequently we find British, French, German, Belgian, Italian, and Portuguese papers much in evidence. The arrangement followed by the compiler places the names of authors in alphabetical order, the papers being given again under the names of the journals in which they appeared. In this connexion we may mention that a list of some 140 papers is given as having appeared in one or another form in the columns of THE LANCET. Against each original reference is an index number. Dr. Arthur W. G. Bagshawe, the director of the Sleeping Sickness Bureau, contributes a preface to Mr. Thimm's work, and from it we learn that a subject-index is in course of preparation indicating the numbers to be consulted for the various subjects—e.g., sleeping sickness, nagana, mal de caderas, the rat trypanosome, dourine, trypanosomes of birds, trypanosomes of fishes, chemo-therapy, Glossina palpalis, and the like. This subject-index will be forwarded to subscribers as a supplementary pamphlet. The literature of trypanosomiasis goes on growing rapidly, and the numerous papers which have been published since March 31st, 1909, are contained in No. 6 of the *Sleeping Sickness Bulletin* and in subsequent numbers. There cannot be the slightest doubt that the publication of this bibliography, which gives in a handy form references to the papers published on trypanosomiasis by workers of all nations, will prove of the greatest service; for through it the already extensive literature on the subject will become much more readily available for the assistance of investigators, both in the laboratory and in the field, at home as well as abroad. The compiler, and the Sleeping Sickness Bureau alike, are to be congratulated on this excellent and useful piece of work.

---

[1] Bibliography of Trypanosomiasis. Compiled by C. A. Thimm, librarian of the Sleeping Sickness Bureau. Issued under the direction of the Honorary Managing Committee. London: Sleeping Sickness Bureau. 1909. Pp. 228. Price 4s. net.

A SPLENDID SANITARIAN.

WE have on frequent occasions alluded to the little two-leaf pamphlet which is published weekly by the Chicago School of Sanitary Instruction, and is devoted to the dissemination of advice and information, couched in plain and vigorous language, prepared by the Department of Health of the city of Chicago. Of all the official records and statistical compilations dealing with the public health of many countries which reach us, we doubt if any have so direct and practical effect on the lives of a large number of people as this weekly Chicago bulletin. The issue which has last reached us announces the death of Dr. Frank W. Reilly, assistant commissioner of health of the City of Chicago, to whom the inception of the bulletin was due, and contains an account of his life, together with personal appreciations from three of his official colleagues. His career was remarkable. He was born in Boston in 1836, and in 1861 took his degree of M.D. at the Chicago Medical College, a short time before the Civil War broke out. He then enlisted as a volunteer surgeon, and in the next year was seriously wounded at the battle of Shiloh, but returned to the front as soon as he had recovered. This gained him promotion to the rank of major, and as surgeon to an infantry regiment he served under General Grant and General Logan. At the close of the war he turned his attention especially to questions of sanitation, the consummate importance of which had doubtless been impressed upon him during his campaigning experiences. In 1867 he was appointed sanitary inspector to the Chicago Department of Health, and six years later left the city for the United States Marine Hospital Service, where he continued to do admirable work in connexion with widespread epidemics at the stations of his service. His conduct during yellow fever outbreaks at Memphis and Vicksburg gained him a National Sanitary inspectorship and the control of sanitation in the Mississippi valley. In 1885 Dr. Reilly turned his attention to journalism, very probably having realised the enormous importance of educating the people in the principles of hygiene before any thorough effect can be expected from sanitary legislation. He became a leader writer and then editor of the *Chicago Morning News*, and conducted the successful campaign for a new system of drainage and a purer water-supply in that city, the urgent need for which was shown so fully by the report of THE LANCET Special Commission of Enquiry before the great Chicago International Exhibition. In 1894 he re-entered the service of the Health Department, and has continued in it ever since with the greatest credit, as the following figures show. Between 1881 and 1894 the death-rate from preventable diseases was 2072 per 100,000 of population. Between 1895 and 1908 the corresponding figure was 1479, representing a saving of 147,525 lives during 14 years, chiefly owing to the application of proper sanitary precautions. Upon these facts one of his biographers makes the comment: "If it be argued that our age is one of advancing standards, the answer is that standards advance as they are carried—advance is not automatic—and Dr. Reilly carried standards. ...... At death to have it chronicled that thousands are living because you lived and worked might well be the highest ambition of him who aspires to be remembered as one of mankind's greatest benefactors." The story of Dr. Reilly's life can hardly fail to encourage all medical men who read it; it will help them to forget the spiteful sneers and ignorant malice that in some quarters seek to detract from their work and their service. The soldier who advances his country by the slaughter of its enemies deserves recognition from posterity, but in a less degree than the man who with the weapons of science, courage, and perseverance makes, as did this man, a successful onslaught upon the innumerable host of death.

THE TREATMENT OF EPILEPSY WITH CALCIUM SALTS.

THE discovery of the action of calcium salts on the cerebral cortex and their application in the treatment of epilepsy we owe to the researches of a succession of Italian investigators. Sabbatani found that soaking the cortex in a solution of calcium chloride diminishes its excitability, while such salts as sodium oxalate or citrate have an opposite effect; and he came to the conclusion that poverty of calcium salts in the circulation is an important factor, if not in the causation, at least in the continuance of epilepsy. Besta discovered that in 37 out of 45 cases of epilepsy the coagulability of the blood is diminished compared with the normal. Others have obtained similar results. The spasmophilia of rachitic children, as was pointed out by Silvestri, becomes of increased significance in this connexion. For these reasons, and in view of the desirability of procuring as wide a choice of therapeutic agents as possible in the treatment of a disease of such chronicity, any information on the subject of a clinical and practical nature is welcome. Among various favourable reports that have been published reference ought to be made to one from Mr. Arthur Litteljohn.[1] One of his patients was disoriented, dirty in her habits, incoherent, noisy, and spiteful, and was having fits, of an aggravated *petit mal* type, on an average three to five times every 24 hours. Under 15 grains of calcium lactate three times a day her fits were reduced from 30 or 40 weekly to *nil*, and her mental state improved. Another almost equally striking case is recorded by the same observer. Successes of this description ought to encourage the practitioner to employ calcium salts more frequently, especially where bromides seem to be inefficient from the outset or to lose their usual efficacy after prolonged exhibition, particularly since the evidence for the therapeutic value of calcium is still conflicting. Thus Dr. Julius Donath, physician to the Nervous Section of the St. Stephan Hospital in Budapest, and a well-known continental authority on epilepsy, has published in a recent number of *Epilepsia* a series of nine cases where the same favourable results were not obtained. Calcium chloride up to 135 grains daily was tried; in four cases without any effect at all, and in the others with only a slight diminishing influence. The method, therefore, has scarcely passed the experimental stage, and for that matter there is no certainty whether these abnormal chemical changes in the blood of epileptics are really the cause of the discharges, or merely a coeffect of the disturbances in the central nervous system. Dr. John Turner of Brentwood Asylum failed to find that diminution in the coagulability of the blood already referred to as noted by Besta. Yet Perugia[2] has corroborated the latter's results in 36 cases of genuine epilepsy, but affirms that while the administration of calcium salts increased the blood coagulability of his cases it had no effect on the number of attacks. Everyone who has to deal with protracted forms of epilepsy can recall instances of the apparent uselessness of bromide treatment, and while the calcium method has not perhaps come up to expectation it is surely worthy of further and extended trial. It may be especially serviceable in those not uncommon varieties of severe *petit mal* that are described by Mr. Litteljohn.

---

[1] THE LANCET, May 15th, 1909, p. 1382

THE MEDICAL ASPECT OF A WINTER ELECTION.

THOUGH some may grumble at the mildness of the present weather as unseasonable, yet we are inclined to wish its continuance if only for the sake of those who are taking or are about to take an active part in the great political struggle on which we are entering. We know personally of severe mischief caused to the health of enthusiastic workers in a former mid-winter election. Indeed, the readiness with which so many professional and business men, of middle age and more, prepare to undergo the personal discomforts of active participation furnishes a good example of public-spirited self-sacrifice. Not only the candidates, but all their active supporters lead a life of dangerous stress during an election. To the mental and laryngeal strain which they have to undergo must be added the unaccustomed exposure to which they are submitted, particularly in rural constituencies. Long evenings spent in chilly motor-car rides from place to place are interspersed with speech-making in the stuffy atmosphere of village schools, a constant alternation between the extremes of heat and cold which cannot fail to try the strongest. With the coming of the motor-car the political candidate, like the medical man, has changed his methods, and now does far more work in the 24 hours than he did before. In the days when he only attended one or two meetings in an evening, and had to travel to them in a closed carriage, the only landscape visible the strip of hedge or dyke revealed by the light of the carriage lamps, he ran a risk of being bored but not of being exhausted. Compared with the monotony of the older form of travelling, an open motor-car, even with the temperature at 10° below zero, seems preferable, but the added work made possible, and the more exciting conditions under which it is done, must have their influence. We consider that it is unlikely that the full number of elected members will be in a fit state to attend the opening day of the new Parliament.

COINCIDENT APPENDICITIS AND PERFORATED GASTRIC ULCER.

ONE of the first principles of diagnosis is that the simplest diagnosis which is capable of explaining all the phenomena present should be preferred. Therefore a diagnosis of the coetaneous existence of two entirely independent morbid conditions must always be accepted with reserve, unless it is required to explain all the signs and symptoms. Mr. C. A. Moore has recorded in the present number of THE LANCET a case in which two important acute abdominal lesions occurred simultaneously. A girl, aged 18 years, had an acute appendicitis, and at the same time a perforation of a gastric ulcer took place. Several attacks of pain in the right iliac fossa had preceded the acute attack, and she had also been treated twice previously for gastric ulcer. Therefore, the diagnosis was not so difficult as otherwise it might have been. When, the appendix having been explored first, it was found that it had not perforated, though there was much peritoneal exudate, it was clear that some other lesion was present, and from the history of the case and of the attack that it was probably a perforation of a gastric ulcer. The successful issue of the operation, on which we heartily congratulate Mr. Moore, depended mainly on the fact that the stomach was nearly empty at the time of perforation, and therefore very little contents escaped into the peritoneal cavity. The question naturally arises whether the two conditions were quite independent or causally connected, but there was nothing to suggest such a connexion, and as each condition is common the concurrence of the two is far from improbable, though surgical literature appears to record no case in which a certain diagnosis was made by operation or confirmed by necropsy.

THE NATURAL AND UNNATURAL FEEDING OF THE INFANT.

AT a recent meeting of the Medico-Chirurgical Society of Glasgow Dr. Leonard Findlay read an interesting paper on this subject, in which he discussed the essential differences between human milk and cow's milk. It is to differences in the curd—i.e., in the proteid and fat content of the two milks—that most English and American authorities attribute the unsuitability of cow's milk for infant feeding; but Dr. Findlay pointed out that researches by Meyer of Berlin tend to show that differences in the whey are even more important than differences in the curd. Both healthy and sick children fed with a mixture of human whey and cow curd throve excellently, while children fed with a mixture of cow whey and human curd became ill. Schlossmann's suggestion that cow's milk might owe its deleterious effects and difficulty of assimilation to the fact that the child absorbed a heterologous albumin has not been supported by experimental proof. The carbohydrate in the two milks is identical. The inorganic salts differ both quantitatively (3½ in cow's milk to 1 in human milk) and qualitatively (Na_2O, CaO, MgO, P_2O_5 being more plentiful in cows' milk, and K_2O, Fe_2O_3 less in amount than in human milk). Experimental administration of different salts to infants (by pupils of Finkelstein) showed that salts of sodium induce a rise in temperature, an increase in weight and an increase in the electrical excitability of the muscles, while calcium salts have exactly an opposite effect. Examination of published analyses of human milk shows great variation in the amount of proteid and fat, and that quite irrespective of whether the child throve or not. It is noteworthy, however, that the salt content in those human milks which disagreed with the infant was abnormally high (even two and a half times the normal), while in those which caused no disturbance it was normal or subnormal. These observations make it not improbable that the good effect of diluting cow's milk results, not from diminishing the amount of proteid, but from reducing the proportion of the inorganic salts. This difference in salt content, however, does not entirely explain the superiority of human milk, for if the salts be separated from human whey, freed from organic matter by burning, redissolved in water, and added to the human curd and fat, the resulting mixture is not only non-nutritious but injurious to the infant. Apparently the human milk contains some beneficial organic substance which is destroyed by the treatment above mentioned. Pfaundler suggested that this substance is complement and assumed that hæmolytic and nutritional complement are one and the same thing. Researches by Moro showed that in breast-fed children and in artificially-fed children who throve well much complement was present, whereas in the blood of children suffering from alimentary disturbances little complement was found. The accuracy of these findings has been questioned by other observers, notably by Herbert Koch. Dr. Findlay, along with two other workers, reinvestigated the subject during last summer in the clinic of Professor Finkelstein in Berlin and found as the result of observations made on over 100 infants under one year old that the amount of complement varied, not with the mode of feeding or condition of the child, but directly with its age, the complement value rising from *nil* during the first month to 11 per cent. in the second month, and 88 per cent. between the sixth and twelfth months. It is suggested that possibly this absence of complement during the early weeks of life may explain why it is so difficult to rear children artificially during that period, and why the difficulty diminishes as age advances. Dr. Findlay's conclusion must be accepted that we do not yet fully understand the secret of the beneficial effect of human milk, except that it contains some essential and probably organic substance, of the nature of which we are entirely ignorant.

---

[2] Il Morgagni, October, 1908.

THE PRISON MEDICAL OFFICERS AND THE HOME OFFICE.

We have received various communications on the subject of the relations which exist between the Home Office and the medical officers of prisons, arising out of letters and articles which have appeared in the *Times*, in the *British Medical Journal*, and elsewhere. It would seem that considerable misconception exists in certain quarters regarding the position in which prison medical officers stand to the central prison administration and to the Home Office. It has, for example, been suggested that the medical treatment of prisoners is interfered with by the Home Office for political motives. Of course, statements elicited by the heat of political controversy are not to be judged by too rigorous a standard, but it is a matter of regret that a charge of such gravity, affecting the personal honour of the medical men in the prison service, should have been made in any way. When prisoners attempt to starve themselves they must be fed, as are lunatics in similar circumstances, by means of the nasal or œsophageal tube. This was not done in the case of the first "suffragette" prisoners because the Home Secretary saw fit to remit their sentences and release them from prison. Subsequently, when the method of the "hunger strike" was adopted as a regular policy, the authorities decided not to continue the practice of liberating the prisoners, and therefore the ordinary treatment was applied by the medical officers as a matter of course. In all this there can be no question of interference by the Home Office with medical treatment, for it will hardly be suggested that the Home Secretary's leniency in the first cases is to be regarded in that light. As a matter of fact, the absolute independence of the prison medical officer in his treatment of the prisoners under his care is secured by statute, and an attempt to limit it in any way, if anyone were found to make so foolish an attempt, would be promptly resented by every medical officer in the service, and, of course, with added vehemence if the attempt were made for sordid political motives. And in this connexion it may, perhaps, be worth while to refer to a further point which impulsive partisans would do well to consider. If it is the duty of the prison medical officer to brook no interference with his efforts to treat his patients to the best of his ability, it is equally his duty, not only as a medical man but as a public servant, to recognise that his responsibility towards those under his care must not be influenced by his personal opinion as to their political or religious beliefs, their social position, or their moral character. He has no right, for instance, in such a matter as the refusal of food, to abstain from applying to a prisoner of good social standing the same treatment which he would use to the outcast of the streets, it being taken for granted that in each case the treatment is a sound and accepted scientific procedure.

CAPTAIN SCOTT'S ANTARCTIC EXPEDITION.

As the unexplored portions of the earth's surface diminish in extent under the advance of geographical discovery, we in this country have special reasons for wishing every success to Captain Robert Scott's forthcoming Antarctic expedition. The cultivation of an adventurous spirit is of vital importance to a nation having such extensive maritime interests as those of Great Britain, and the national sense of patriotism is thrilled when British navigators show themselves as ready in the present day as in the past to run great risks and to suffer hardships in traversing the Polar ice fields. Important scientific results may be expected from Captain Scott's expedition. Additions can hardly fail to be made to our knowledge of terrestrial magnetism, a subject on which the practical use of the mariner's compass is based, and zoologists may be gratified by the discovery of some marine animal hitherto unrecognised. Materials may also be collected for the further study of the currents known to exist in the southern ocean but not enjoying the popular celebrity of the Gulf Stream in the northern hemisphere. The medical officers of the expedition will have an anxious task in view of the perils which almost all Polar explorers have encountered—ever-present perils from exposure and accident; it is also not many years since a British North Polar Expedition suffered from scurvy. In a professional journal it is not invidious to mention that at least two British medical men have within living memory attained celebrity as leading spirits in such expeditions—we refer to Deputy Inspector of Hospitals Robert McCormick and Dr. John Rae, who died in 1890 and 1893 respectively. For these various reasons, and for others which will readily suggest themselves, we trust that our medical brethren, both in their individual and their corporate capacity, will keep patriotic ideals in mind. In London much public interest was aroused not many months ago by the spectacle of Sir Ernest Shackleton's vessel, the *Nimrod*, moored in the river above Blackfriars Bridge. Public interest, however, is apt to be fitful, and on the present occasion an effort must be made, because international competition in every branch of discovery is now so keen that delays are dangerous and no opportunity of encouraging British initiative should be lost. Funds for Captain Scott's enterprise are needed, and subscriptions, which we shall be happy to announce, should be sent to the British Antarctic Expedition (1910), 30, Victoria-street, London, S.W. For a wealthy country such as ours the estimated total amount of £40,000 is not large; the explorers are ready to do their part, and the despatch of the expedition, whether the Pole be reached or not, will do honour to the nation.

THE SANITARY OATH.

The Oaths Act, 1909, which came into operation upon Jan. 1st of this year, does not seem to give universal satisfaction, and Sir Thomas Bramsdon, who promoted the original Bill in the House of Commons, has written to the newspapers expressing his intention of endeavouring to obtain its amendment should he be returned again to Parliament at the coming election. The differences complained of between the measure as originally framed and as it left the Lords consist in the obligation upon the person sworn to repeat the words of the oath by which he binds himself, instead of assenting briefly to a form recited by the officer of the court, and in his being obliged to hold up a testament instead of standing with uplifted hand only. The course proposed by Sir Thomas Bramsdon and approved by the House of Commons had the two advantages of simplicity and of the avoidance of contact with a volume previously handled by many others, and possibly by some dirty or infectious persons. The more elaborate repetition of the terms of the oath, on the other hand, should help to emphasise the duty to observe it, and the public elevation of the volume containing the Gospels or the Old Testament should import additional solemnity to a routine which, in its familiar and now discarded form, has always had a tendency to become perfunctory and unimpressive. A few months' trial will probably serve to show with tolerable clearness whether the repetition of the words by jurors, witnesses, and others is the cause of appreciable delay and inconvenience, and it is quite possible that the demerits of the course now ordered may be found to outweigh its advantages. The holding of the book in the hand is the detail with which the medical profession is most concerned. It is decidedly an improvement upon the unclean and dangerous custom of kissing the volume, but unless contact with it is regarded with good cause as advantageous for the purpose of preventing perjury we can see no reason whatever why the ceremonial originally proposed and altered by the House of Lords should not eventually be established in its entirety. We observe that the Act is to be adopted universally, and that it is an error to refer to the word "may" used in it as being in its effect permissive only. It appears to have been used in order that those persons still claiming to bind their consciences in some other manner than by the ordinary formula might remain at liberty to do so.

WE regret to announce the death of Professor Enrico H. Giglioli of the Florentine Istituto di Studi Superiori and of the Natural History Museum of the same city. He died from syncope, due to cardiac lesion of long standing, when within a few days of celebrating his fortieth year as academic teacher. The anniversary evoked many congratulations from the world of nature-study—not a few, indeed, of his friends and admirers being on their way to Florence for the occasion and arriving in time to assist, not at his jubilee, but at his funeral. His biography, which, we understand, is in contemplation, will have a special interest for the English-speaking world for its record of work prosecuted under the inspiration of Darwin, Owen, Lyell, Murchison, Ramsay, Tyndall, and Huxley, with whom he was in frequent correspondence and whose findings he made familiar to Italy by translation, comment, and academic exposition.

FINANCIAL TROUBLES AT AN INSTITUTE FOR THE BLIND.—Remarkable financial complications have recently occurred in connexion with an institute for the blind in Roumania. This institute, which is called "Vatra Luminousa," was founded by Queen Elisabeth of Roumania, and had for its director Mr. Rudolf Monske, the Queen's private secretary. Last year he purchased immensely large grounds close to Bucharest with the object of building a "city for the blind," but the realisation of this plan needed far more money than was at his disposal. To cover a part of the building expenses Mr. Monske endeavoured to borrow 300,000 marks from a German financial house, which, however, questioned the soundness of the guarantee that was offered and would not advance more than 2000 marks. Further inquiries showed that at least half a million marks would be required for the purpose, and the Queen thereupon applied to the King for advice and help. His Majesty has now caused Mr. Monske to withdraw from the undertaking and has granted 500,000 marks from his private purse for the building expenses. The institute will be taken under State management, and a physician of good standing will be employed as its director.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

II.[1]

The Elasticity and Extensibility of the Tissue Elements Constituting the Walls of the Blood-vessels.

IN connexion with the structure of the vessel wall two terms require definition—elasticity and extensibility.

The *elasticity* of a body is the property in virtue of which it recovers its form after this has been altered by compression, extension, bending, or twisting. With a perfectly elastic body the recovery of form after the removal of the modifying force is rapid and complete. The force which is manifested in the recovery or recoil of such a body is exactly equal to the disturbing force. Liquids and gases exhibit elasticity on compression only; solids on compression, extension, bending, or twisting.

What we have to consider here is the elasticity of certain living tissues—those, namely, forming the blood-vessels—under the application of a stretching force, i.e., a force which causes a lengthening of the tissue elements. We must be careful to distinguish between the readiness with which the form of a substance can be altered (by compression, extension, bending, or twisting) and its elasticity. The two by no means always rise and fall together. The proportion of the one to the other, though fixed for any given substance, differs for different substances. Thus, while such a comparatively incompressible substance as ivory is one of the most elastic substances known (as shown by the great distance which an ivory ball bounds after being forcibly driven against a smooth, highly resisting surface), highly plastic putty is practically devoid of elasticity. In this case the less plastic is the more elastic. On the other hand, white fibrous tissue, though much less extensile than yellow elastic tissue, is by far the less elastic of the two.

The *extensibility* of a substance indicates the degree to which it can be lengthened when subjected to the action of a stretching force. As just implied, there is no constant relation between the degree of extensibility and elasticity of the various bodily tissues. Yellow elastic tissue, e.g., is both highly extensile and highly elastic; it answers to the popular conception of elasticity as exemplified by the familiar drapers' elastic. Strongly contracted muscle fibre, on the other hand, is much less extensile than yellow elastic tissue, but quite as elastic, if, indeed, not more so.

A word must be said here as to the effect of a stretching force in causing a *permanent lengthening* of tissue elements. When a tissue is subjected to the long-continued action of a stretching force it tends to undergo a progressive lengthening, so that after the stretching force has ceased to act its elements will be found to have undergone a permanent lengthening, just as occurs in the tightened-up strings of a musical instrument. Now in this respect highly elastic tissues stand in sharp contrast to those which are feebly endowed with elasticity. A highly elastic tissue in the stretched state promptly regains its initial length after the removal of the extending force; a tissue little endowed with elasticity is much more sluggish in recoil. More than this, a highly elastic tissue, by virtue apparently of that power of recoil which is ever tending to cause it when in the stretched condition to recover its initial length, opposes a peculiar resistance to a permanent lengthening. We see this truth well exemplified in the case of those pre-eminently elastic tissues—yellow elastic tissue and muscle in the contracted state. Yellow elastic and contracted muscular tissues are continually striving when stretched to regain the *status quo ante;* whereas the less elastic tissues tend to remain permanently lengthened after being stretched, and, if the stretching force persists, the process of lengthening tends to continue from day to day, the tissue in the end permanently "giving." Thus, though white fibrous tissue is much less extensile than yellow elastic, the former, under the long-continued action of a stretching force, "gives" considerably more than the latter.

---

[1] No. I. was published in THE LANCET of Jan. 1st, p. 48.

It is because yellow elastic tissue and muscular tissue (in the contracted state) are endowed with this peculiar power of resisting the tendency to permanent lengthening under long-continued stretching that *these tissues are always found where there is a liability to constant stretching*—in the blood-vessels, the respiratory passages, the gland ducts, the urinary bladder, and gall-bladder, &c. These various tubes and cavities would undergo progressive dilatation from the long-continued internal pressure to which they are subjected, were they not richly endowed with highly elastic tissue elements, such as these yellow elastic and muscular tissues.

When we speak of the extensibility and elasticity of the blood-vessels we have in mind their walls as a whole, but, as we have just seen, the different kinds of tissue elements constituting the vessel walls show individual differences in respect of these two properties. The elements in question are: Muscle fibres, yellow elastic fibres and membranes, white fibres and connective tissue cells, and endothelial cells.

In what follows I shall group the white fibres and connective tissue cells under the general term of connective tissue,[2] while I shall take no account of the endothelial cells constituting the lining of the blood-vessels.

Comparing the relative extensibility and elasticity of these muscular, yellow elastic, and connective tissues, we find that while the yellow elastic tissue is both highly extensile and highly elastic, and that connective tissue is meagrely endowed in each respect, the degree to which muscle fibre exhibits these properties depends, as already hinted, upon its condition as regards relaxation and contraction.[3] Contracted muscle fibre is more elastic—i.e., has greater power of recoil—when weighted than relaxed muscle fibre, and this power of recoil increases with every increment in the degree of contraction. It is also more extensile—i.e., a weighted muscle undergoes a greater lengthening when in a state of contraction than when relaxed. This does not, of course, imply that the length of the weighted muscle in contraction is greater than the length of the same weighted muscle in relaxation, inasmuch as the shortening caused by contraction may be, and generally is, greater than the lengthening caused by the stretching force. Thus although the muscle fibres of a hypertonic artery are more lengthened by the blood pressure than those of a hypotonic artery, the lumen of the vessel is much smaller in the former case than in the latter. The degree to which the extensibility of muscle fibre is influenced by its contraction depends upon the degree of contraction and the amount of the extending force. By suitably adjusting the two a relaxed muscle may actually be made to elongate by throwing it into a state of contraction (Weber's Paradox).

The high extensibility and elasticity of contracted muscle can be admirably demonstrated in the living body. When, e.g., an attempt is made forcibly to flex the extended forearm against an insuperable resistance, it is evident that the contracted flexors must be in a state of considerable elastic tension—i.e., that they are stretched considerably beyond the length which they are striving to attain. This is shown by the fact that if the resistance is suddenly removed, while the force of muscular contraction remains the same, sudden flexion of the forearm occurs; in other words, the contracted flexors undergo rapid shortening from what must be regarded as a genuine elastic recoil. We may, in fact, regard the contracted flexors in such a case as being stretched by so much as they shorten upon the removal of the resistance to their shortening, as being, that is, in a condition very much like that of a piece of stretched yellow elastic tissue.

The above considerations show that it is not only by the degree of contraction of the muscular media that its extensibility and elasticity are influenced, but also by the extent to which it is rendered tense by the blood pressure. A hypertonic media is both more extensile and more elastic than a relaxed media, while at the same time, by virtue of this enhanced elasticity, it offers a much greater resistance to progressive elongation of its elements. The normal tonus of the media, indeed, constitutes, as we shall see in a later section, a safeguard against that progressive dilatation and lengthening of the blood-vessels which the long-continued action of the blood pressure is ever tending to produce.

From what has been said it would appear that the phenomenon of muscular contraction may be regarded as the assumption by the contracting fibres of a physical state similar to that of stretched elastic tissue. Thus, when a muscle shortens from contraction we may assume that it is in virtue of an elastic recoil, such as is manifested by stretched yellow elastic tissue in its recoil. When, on the other hand, it contracts against insuperable resistance its condition may be compared to that of the stretched elastic tissue striving to recoil, the power of the muscular recoil increasing with every increment in the intensity of contraction.

The influence of the post-mortem contraction of the muscular media on the extensibility of the arterial wall.—This has been carefully studied by Professor J. A. MacWilliam of Aberdeen. This physiologist noticed that the excised carotid of a recently killed ox exhibits a strongly marked and long persisting contraction of the muscular wall, and having devised special methods of prolonging and checking this contraction, he was able to test the extensibility of the arterial wall both when the muscular fibres are in the contracted and in the relaxed state. Experiments were made on the arteries of a large number of oxen, horses, sheep, cats, and men. Transverse and longitudinal strips of medium-sized arteries, such as the carotid, were weighed in the non-contracted and in the contracted state. Testing strips of non-contracted arteries he found that the greatest extension is produced by the first additions to the weight, later additions causing progressively diminishing lengthenings. Doubtless this pronounced initial extensibility is to be explained by the fact that in the non-contracted artery the yellow elastic tissue is the only tissue to be put on the stretch in the first instance, for, as we shall see, when a non-contracted artery is in a state of complete elastic recoil all its tissues save the yellow elastic are crumpled up and need to be pulled out straight before they can be rendered taut. Directly these (especially the white fibrous tissues) begin to get taut they offer a resistance to extension decidedly greater than that offered by the yellow elastic tissue, and their resistance, which increases with every increase in the stretching force, is added to that offered by the yellow elastic tissue. On the other hand, it was found that in testing strips of contracted arteries equal increments in the extending force "cause increments of elongations, relatively small at first, and increasing in magnitude up to a maximum beyond which there comes a progressive diminution in the amount of elongation produced by each successive addition of weight." This behaviour is evidently due to the fact that during the early phases of extension the resistance is entirely borne by the contracted muscle fibres. Directly this resistance is broken down, so that the muscle fibres cease to act as contracted muscle fibres, the yellow elastic tissue, and subsequently the connective tissue also, are permitted to be stretched, and the vessel wall begins to act like a non-contracted portion.

So much for the results obtained by testing *strips* of arteries. Similar results were obtained by experiments devised to test the influence of internal liquid pressure on the capacity and length of non-contracted and of contracted arterial *tubes*. As regards capacity, it was found that, conformably with the experiments on strips of arteries, the distensibility of the non-contracted artery is greatest with the first increments of pressure—i.e., that as the pressure increases above zero the expansion goes on fairly quickly at first, and then proceeds much more slowly. On the other hand, the expansion of the contracted vessel caused by successive rises of pressure is at first very gradual, in marked contrast to what occurs in a non-contracted vessel. When the artery is thick-walled and very strongly contracted the muscular resistance shows no signs of giving way (thus allowing the elastic and connective tissue to be put on the stretch) until a *pressure considerably higher than the normal blood pressure of the animal* has been attained. When, however, the muscular coat of the artery is thin, or in a state of only moderate contraction, the vessel behaves more like one which is non-contracted—i.e., the maximum distensibility is soon reached, say, at 100 milligrammes of mercury, from which part upwards it declines.

---

[2] The term "connective tissue," as ordinarily understood, includes, of course, yellow elastic tissue.

[3] The term "muscular contraction" needs definition in this place. This condition does not, be it noted, necessarily imply a shortening of the contracted muscle. It signifies that condition of the muscle which leads to its shortening in the absence of an insuperable resistance to such shortening. Similarly, by "degree of contraction," is meant, not the degree to which a muscle actually shortens, but the degree to which it takes on that condition which leads to shortening, in the absence of insuperable opposition. When the resistance is insuperable. it is possible for a muscle to be in a state of intense contraction without undergoing any shortening whatever.

MacWilliam concludes that Roy's well-known conclusion that the maximum distensibility of the arteries occurs at pressures corresponding approximately to the blood pressure they are normally called upon to bear is incorrect.

As regards the effect of internal pressure in causing elongation of arteries, Professor MacWilliam found that the total elongation produced by raising the internal pressure from zero is relatively small in the case of the contracted vessel, but very considerable in the case of the relaxed artery.

All this shows that the contracted media offers a peculiar resistance to the detensile effects of the blood pressure, and helps, as we shall see, to explain why hypotonic vessels are more liable to become dilated and tortuous than hypertonic ones.

Conditions affecting the elasticity of the vessel wall.—The elasticity of the muscular elements of the vessel wall is affected by everything which interferes with their normal nutrition, such as syphilis, tuberculosis, prolonged fever, and other wasting diseases. It is possible that the elasticity of the yellow elastic fibres may be affected in the same way, though I do not know that this has been proved. The soft pulse met with in prolonged exhausting diseases may be largely due to direct nutritive changes in the arterial walls and not merely to modifications in arterial tonus.

(*To be continued.*)

THE REGISTRAR-GENERAL'S ANNUAL REPORT FOR 1908.

I.

IN a leading article of last week we noticed Mr. Bernard Mallet's prefatory remarks on his assumption of office as chief of the National Registration Department at Somerset House. We now proceed to a review of the more important topics discussed by Dr. T. H. C. Stevenson, the recently appointed Statistical Superintendent in that department.

In his letter to the Registrar-General Dr. Stevenson contributes an analysis of the causes of death in the year 1908, together with particulars of the changes in mortality from the principal diseases in the official list which, since the beginning of this century, has been employed in the English reports, as well as in the reports of the Registrars-General of Ireland and Scotland. The unprecedentedly low mortality of the year under notice was certainly influenced by favourable climatic conditions. Much of the life saving represented by the low death-rate, which was only 14·7 per 1000, was due to the lessened mortality from diarrhœal diseases, as well as from pneumonia, tuberculosis, and bronchitis, the mortality from tuberculous phthisis being the lowest hitherto recorded. But we look in vain for evidence of decrease in the ravages of cancer, which disease still continues to show increased mortality in England. Exceptionally low incidence was experienced in 1908 not only in the general mortality but also in the mortality of both sexes at each group of ages up to 55 years. Infantile mortality, however, calculated as a proportion of registered births, was slightly in excess of the unusually low rate of 1907. In this connexion Dr. Stevenson rightly recalls attention to an imperfection always recognised by us as attaching to the method of expressing infantile mortality in terms of births registered—an imperfection which depends on the fact that in England particulars are still lacking concerning the number of stillbirths as well as concerning the number of twin and multiple births occurring in each year. It remains to be seen whether this omission can be supplied either completely or in part by the efforts of municipal authorities under the recent Notification of Births Act.

In the present report, as in several of its predecessors, illustrations are given of the fallacy of comparing urban and rural death-rates without correction for age differences in these variously constituted populations. If, for example, the mortality of the essentially urban county of Lancaster be contrasted with that of the mainly rural county of Cardigan the death-rate of the former county will be found to have been increased by correction from 16·9 to 18·7, whilst that of the latter county has been reduced by the same process from 17·8 to 14·0 per 1000. In other words, whilst the crude or uncorrected rate of Lancashire is lower than that of Cardiganshire by 5·1 per cent., the corrected rate of the former shows an excess of 26·4 per cent. The explanation of these differences is this: that whereas Lancashire contains an abnormally small proportion of persons at the more advanced ages when the rate of mortality is exceptionally high, Cardiganshire, on the contrary, contains an abnormally large proportion at those ages. In the former county less than 3½ per cent. of the inhabitants live beyond the age of 65 years, whilst in the latter county the proportion amounts to nearly 9 per cent. We are gratified to learn that improvement is still observed in the medical attestations of the cause of death, and that substantial decrease is now apparent in the employment by medical practitioners of the ill-defined causes of death enumerated in the official mortality tables. In the quinquennial period commencing with 1875, in which year the certification of cause of death was first made compulsory on registered medical practitioners, the deaths of which the causes were insufficiently defined were equal to 12 per cent. of the total; whereas a quarter of a century later—namely, in the quinquennial period last ended—the proportion had fallen to 9·4 per cent. In the year under present notice the causes of 91·52 per cent. of the total deaths were returned as certified by registered medical practitioners, a proportion which is a trifle less than that recorded in the previous year. Dr. Stevenson concurs with his predecessor in the opinion that this figure does not fully represent the proportion of cases in which medical assistance had been rendered to the sick in their last illness, for he says: "In cases of inquest on the bodies of persons who had received medical attention during life the cause of death is copied from the coroner's certificate, which supersedes the medical certificate entirely, but, except in cases where an autopsy has taken place, it is seldom possible to ascertain from the coroner's certificate whether or not medical evidence has been given, or the purport thereof, if given." In dealing with this subject the report for 1907 contains a paragraph similar to the above with the additional remark that having regard to the importance of securing registration of the actual cause of death it is essential that in every case where an inquest has been held, and in which medical evidence is available, there should be appended to the certificate of the finding of the jury either (1) a medical certificate of death or (2) the substance of any medical evidence given at the inquest. Inasmuch as the foregoing was substantially the deliberate opinion of the Home Office Committee which made a strong recommendation to the like effect in its report to the Home Secretary so recently as the year 1899, it is hoped that steps will be taken to secure some such arrangement as that here referred to, in any legislation affecting the relations of the coroner's court to the public health.

As in previous reports the causes of death of males and females at specified age groups are shown in the present volume, and in the usual tables the deaths at all ages and from the same causes are shown for a series of 20 years. We are pleased to find that the method of graphic representation of vital statistics is still retained and even extended in this report; for by this means readers not specially instructed in statistical science can appreciate readily proportional differences, whether in the incidence or in the fatality of disease. A new diagram is now presented which shows the proportion in which the more prevalent diseases contribute to the death-roll. It consists of a circle the whole area of which represents the deaths from all causes, whilst the deaths from particular causes are represented by various segments of the circle. A glance at the diagram suffices to show how large is the proportion of the whole number of deaths that is caused by a few of the more important diseases, especially by tuberculosis, bronchitis, pneumonia, and cancer; and what is particularly instructive for present purposes, the prevalence, if not the fatality, of the three diseases first mentioned is demonstrably amenable to sanitary control. As previously remarked, the general mortality of England and Wales in the year under notice was the lowest on record. Exactly stated, it was equal to a rate of 14·683 per 1000 living at all ages and of both sexes, and was below the rate in the quinquennium immediately preceding by 5 per cent. Among males the rate was equal to 15·697 per 1000 living of that sex, and among females to 13·736 per 1000, both these rates being also 5 per cent. below the respective quinquennial averages. Compared with the average in the previous five years, there has been in each county group a fairly uniform fall in the general death-rate of each sex. According to the experience of 1908, which is confirmed by that of former years, the mortality in the urban area exceeds that in the rural at each of the several stages of life. This is especially true respecting children under the age of 10 years and adults at ages from 35 to 65, the greatest differences being observed among children below the fifth year. On the other hand, the rates of 1903–08 agree with those of recent previous years in showing excess of mortality in the rural districts among young adults of both sexes—in men at ages 20–25, and in women at ages 15–35. This feature has been strongly marked in the case of young adults dying from pulmonary tuberculosis.

There is nothing remarkable in the records of mortality from the more familiar infectious diseases, especially in those of children, in the year under notice, the mortality from small-pox, measles, whooping-cough, scarlet fever, and diphtheria being in each case below the average. From a sanitary point of view the fluctuations of mortality from enteric fever are regarded as of exceptional importance. The English death-rate from this disease was equal to 75 per 1,000,000 persons living at all ages and of both sexes, a rate which, with the exception of that for 1907, is the lowest on record, and is below the average for the quinquennium immediately preceding by 13 per 1,000,000. Among males the death-rate was equal to 94 per 1,000,000 of that sex and among females to 56 per 1,000,000. During the 40 years that have elapsed since the disease was first differentiated in these reports enteric fever mortality has fallen to less than a fifth of its former amount—namely, from a rate of 390 per 1,000,000 in 1869 to a rate of 75 per 1,000,000 in 1908. According to the experience of recent years the mortality from enteric fever is found to vary according as a given area contains a large or a small proportion of urban inhabitants. Taking both sexes together, urban mortality from this disease in 1903–07 exceeded rural mortality by 46 per cent. The excess was 55 per cent. among males and only 35 per cent. among females. From the experience of 1908 it would appear that urban and rural areas have shared almost equally in the saving of life that is represented by the fall in the death-rate. In the urban areas the decrease has been greatest among females; in the rural it was shared equally by each sex. Both in the year 1908 and in the previous quinquennium the male rates of mortality from enteric fever exceeded the female rates at all periods of life above the age of 15 years. As in the previous year the highest mortality in both sexes was observed between the ages of 25 and 35 years.

From an interesting table we learn that among registration counties with populations exceeding 100,000 the highest crude rates of enteric fever mortality were 146 in Durham, 136 in Norfolk, 133 in Cumberland, 131 in Monmouthshire, 125 in Lancashire, and 105 in the West Riding of Yorkshire. In the county of Durham mortality was excessive in the districts of Sedgefield, Auckland, Lanchester, Easington, Houghton-le-Spring, and Chester-le-Street. The greater part of the county of Durham is included in the "northern area of high enteric fever mortality" which has in recent years become noteworthy in these reports. In this area the mean death-rate from enteric fever in the year under notice was 187 per 1,000,000, against an average rate of 169 per 1,000,000 in the previous five years. In the districts of Auckland, Easington, and Houghton-le-Spring the rates in 1908 exceeded 300 per 1,000,000. The high rate in Norfolk was due to excessive mortality in the city of Norwich, and that in Cumberland to an epidemic in the borough of Workington. In Lancashire several districts still showed high rates, while in the West Riding of Yorkshire the contiguous districts of Pontefract, Hemsworth, Barnsley, and Rotherham experienced a mortality greatly in excess of that in the remainder of the county.

(*To be continued.*)

THE LANCET COMMISSION ON RINGWORM.—In the reports of our inquiry into the prevalence and treatment of ringworm in the metropolis it ought to have been mentioned that at Sutton Dr. T. Colcott Fox is associated in the treatment with, and assisted by, Dr. H. G. Adamson and Dr. H. G. Critchley.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 7th, 1832.

CASE OF CHOLERA AT SUNDERLAND, WITH AN ANALYSIS OF THE BLOOD, TAKEN FROM THE PATIENT.

BY WM. REID CLANNY, M.D., &c., &c. *Sunderland.*

To the Editor of THE LANCET.

SIR,—Agreeably with your request, I send you a case of Cholera, attended by Mr. Embleton of Sunderland, and also the results of my analysis of the blood.

(The case was that of Elliot Todd, aged 33, who was attacked on December 12th at 2 o'clock A.M., and died at 7 P.M. the same day.)

ANALYSIS OF THE BLOOD.

This blood, on applying the tongue to it, had no taste, nor any particular smell. I also tasted it again, sometime after it had been drawn. I afterwards tasted the colouring matter, the coagulated albumen, and the fibrin, but in them I found no taste, nor any smell. It contained no gases of any description; was black as tar. I followed the plan which I have taken the liberty of recommending my professional brethren to pursue in the investigation of typhus and other diseases, and which I intend henceforth, for many reasons, to pursue.

I shall give the results of an analysis of the blood of one of our sailors which was taken in October last. This blood contained one cubic inch of carbonic acid in the 16 ozs. which were taken.

	The Sailor.	Elliot Todd.
Water	756	644
Albumen, coagulated	121	31
Colouring matter	59	253
Free carbon	32	66
Fibrin pressed and dried	18	6
Muriates of soda and potassa, carbonate of soda and animal extraction	14	0
	1000	1000

I think it will be readily understood that as I did not see this case, it will be out of my power to make any comment upon it. The results of the analysis are most instructive, and by the medical philosopher must be regarded with astonishment. The blood in this case possesses only two ounces of serum, which was like serum of healthy blood in appearance. I am, yours, &c.,

Sunderland, Dec. 31, 1831. W. REID CLANNY.

BRITISH MEDICAL BENEVOLENT FUND.

AT the December meeting of the committee 20 cases were considered and grants amounting to £182 made to 17 of the applicants, two cases being passed over and one postponed for further inquiry. Appended is an abstract of the cases assisted:—

Widow, aged 66 years, of M.R.C.S., L.S.A. Practically unprovided for at recent death of husband, and children only able to give very slight and irregular assistance. Voted £12.

M.D. Edin., aged 68 years. Used to have a large practice in Scotland but lost his savings by becoming security for relations. Now suffers from an incurable complaint. Voted £10, in two instalments, with leave to apply again in six months.

Daughter, aged 54 years, of late M.R.C.S., L.S.A. Has exhausted small capital in the attempt to support herself by keeping a lodging house and is now penniless and in arrears with her rent. Voted £12.

Widow, aged 38 years, of late M.D. R.U.I. Quite unprovided for at husband's death about a year ago and is endeavouring to obtain a post to which she can take her only child, aged 9 months. Voted £10.

Widow, aged 64 years, of L.R.C.P., L.R.C.S. Edin. Permanently incapacitated by the results of rheumatism and dependent on a sister who is a teacher. No children. Voted £12.

M.R.C.S., aged 81 years. Practised for 44 years in one place in the South-west of England, but was obliged to give up on account of the infirmities of age. Only income a small Poor-law superannuation allowance. Children unable to help. Voted £12.

Widow, aged 74 years, of M.R.C.S., L.S.A., whose capital was exhausted by an illness lasting many years. Only income an old age pension of 5*s*. per week. Relieved once, £12. Voted £12.

Widow, aged 44 years, of L.R.C.P., L.R.C.S. Edin. Is a permanent invalid. No income; children only able to give very slight and irregular help. Relieved 14 times, £160. Voted £12.

Widow, aged 50 years, of L.F.P.S. Glasg. Is physically unfitted for hard work and dependent on children who are barely self-supporting. Relieved six times, £58. Voted £12.

Widow, aged 48 years, of M.R.C.S. Quite unprovided for at husband's death a year ago after a long illness; is endeavouring to establish a boarding house. No children. Voted £10.

Widow, aged 45 years, of L.R.C.P., L.R.C.S. Irel. Husband's savings exhausted by a long illness. Is employed as a parish nurse, but only receives a very poor salary. Relieved three times, £15. Voted £5.

Daughter, aged 63 years, of late M.R.C.S. For 28 years acted as a companion, but was obliged to give up work on account of failing eyesight and other infirmities. Is dependent on this Fund and a little occasional help from friends. Relieved five times, £60. Voted £12.

Widow, aged 65 years, of M.R.C.S. Eng., L.R.C.S. Edin. Income £20 a year from a small house which is frequently unlet. No children. Health indifferent. Relieved ten times, £114. Voted £12.

Widow, aged 39 years, of L.R.C.P. Lond. Supported herself as a working housekeeper for some years, but developed phthisis, and is now quite broken down and only fit to go to a sanatorium. Relieved twice, £10. Voted £10, with leave to apply again in six months if necessary.

Daughter, aged 62 years, of late M.D. Edin. Maintained herself as a governess or companion until five years ago, but was then obliged to give up in order to attend to an elder sister who is a permanent invalid. Only income £10 a year from a friend. Relieved four times, £48. Voted £12.

Widow, aged 70 years, of L.F.P.S. Glasg. After husband's death obtained employment as a nurse for several years, but is now incapacitated by the infirmities of age. No income, and dependent on two daughters who can ill afford to help. Relieved once, £12. Voted £12.

Daughter, aged 32 years, of late M.R.C.S., L.R.C.P. Quite unprovided for at death of father a year ago. Has a post as useful companion, but requires a little help for unavoidable expenses. Relieved once, £8. Voted £5.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

Public Health.

THE HEALTH OF THE COLONY OF NATAL.

WHEN in years to come the historian sits down to pen the records of the British Empire and to discuss its influence upon civilisation and progress he will find himself devoting no small space to the effects which the advent of the Englishman exercised upon the native races with which he was brought in contact in different parts of the world. And the story will be interesting and instructive, although, if truthful, not always happy in so far as the aborigines were concerned. In not a few instances the narrator's pen will have to recount the disappearance of aboriginal races. He will have to tell the story of the dwindling away of the Tasmanians under the dominant influence of the Englishman; how the presence of this powerful people changed the habits of the natives until, through loss of fertility, they were completely eliminated; and he will tell, too, of the gradual decline in numbers of the Australian native and of those gallant New Zealanders, the Maoris. Conversely, too, he will have to record the manner in which the English themselves went down on the African Gold Coast and in many other places, and how the negro and the Mongolian, as well as the Indians, increase and multiply under the beneficent rule of the Briton. But the history will show that the laws of health and the knowledge of how to live have been spread to all parts of the globe by the Briton and by the agency of colonial expansion. Our influence in promoting the growth of sanitation in Europe and in other parts, such as Egypt, which are frequented by English visitors is, of course, a matter of common knowledge and experience to all those who travel; but the same forces have been at work in our colonies and with more direct benefit to the Empire.

The last annual report of the health of the colony of Natal by its medical officer, Mr. Ernest Hill, is a very interesting document. The European population of this colony for 1908 was estimated at just under 100,000, the Indian immigrants at 104,120, "other Indians" at 17,820, while the estimation for the natives was 976,222, figures which bring out the relative values of the several sections at the present time. As regards the outlook for the future of these several divisions we turn to a birth-rate of 27·99 per 1000 amongst the Europeans, of 32·9 per 1000 amongst Indian immigrants, and 38·98 per 1000 amongst the natives, exclusive of Zulus. As compared with these birth-rates we have, per 1000 in each instance, a death-rate of 8·87 amongst Europeans, of 18·69 amongst Indian immigrants, and of 18·57 amongst natives. The infantile mortality was for Europeans 77·72, and for Indian immigrants 127·33 per 1000 births in each instance. Among the infectious diseases measles and whooping cough were exceptionally prevalent, both these diseases having, Mr. Hill adds, been largely spread by school influence, while no fewer than 40 deaths amongst Indians are attributed to the ravages of syphilis. Of these deaths 32 were amongst infants and young children. In connexion with venereal diseases there appears to be in force an unfortunate edict that Indians generally and natives in Government employ are not entitled to free treatment, a fact which seems in large measure responsible for the ravages of these maladies.

In malaria there has been a marked fall, although it is by no means clear what forces have acted in bringing about such decline. Mr. Hill thinks it probable that the epidemic wave which swept over Natal in 1905 has now receded much in the same fashion as that which occurred in connexion with the wave of 1868–1872. From pulmonary tuberculosis there was a death-rate of 46 per 100,000 amongst Europeans and 215 per 100,000 amongst Indian immigrants, there having been amongst Europeans a marked fall in the phthisis death-rate during recent years, a fact which appears to be largely, if not mainly, due to the diminished entry of persons already suffering from this disease. There is apparently the greatest difficulty in securing early cases amongst the Indian immigrants, and this fact, together with the circumstance that the coloured people would leave a sanatorium directly they felt at all better, does not, Mr. Hill thinks, render the building of a sanatorium a very hopeful proceeding. Ankylostomiasis caused the deaths of 29 Indians in 1908 as against 18 in 1907, and there was an increase in hospital from 67 cases in 1907 to 226 in 1908, a fact due to greater vigilance on the part of the medical officers and not to increased prevalence. Mr. Hill draws attention to the fact that only a relatively small proportion of those harbouring the parasites are at any one time affected in health, and on the examination of the fæces of three sets of coolies on arrival from India eggs were demonstrated in 52, 92, and 42 per cent. respectively. Efforts are now being directed towards dealing with cases already in the country and for preventing the importation of infected persons from oversea. There were only two cases of small-pox in the colony in 1908, but there seem to be financial difficulties in the way of attaining the general vaccination of the natives, the sum allotted only affording a fee of about 6*d*. for every case vaccinated—obviously a ludicrous provision. In the matter of general sanitation, the condition of the villages is regarded as being satisfactory, although there are difficulties in the matter of adequate scavenging. The water-supplies are regarded generally as adequate and the water is of fairly satisfactory quality.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Aberdeen.—Dr. Matthew Hay, in his health report for 1908, refers first to population, birth-rate, and marriages. Aberdeen has a high illegitimacy rate compared with most large towns. A mothers' and babies' club has been initiated. The club works in coöperation with the public health department, and has been attended with almost embarrassing success. A special investigation regarding the causes of infantile mortality in the city was carried on in 1907 and again in 1908 for purposes of comparison. Dr. Hay regards an increased number of play and recreation grounds in the city as needful for the children. With regard to the Daylight Saving Bill, he remarks that those in sedentary occupations especially would have benefited greatly by the Bill, which seems now to have received its quietus, but that Parliamentary sanction is not necessary to the better arrangement of the hours of sedentary occupations. He suggests that such trades as dressmaking and millinery should start an hour earlier and stop an hour earlier in the summer months, which would be an undoubted advantage to the health of those engaged in them. Dr. Hay finds that in the mortality from tuberculous diseases during the year the remarkable decline continued which has been going steadily on for the last 30 to 40 years. The mortality from cancer showed a slight decline on the preceding year; it nevertheless was nearly twice as high as for the years 1866–1875. If the proportion of unvaccinated children continues as high in the future as it was during the year 1908 there will soon be a large infusion of unprotected persons in the city, with the consequent danger of an epidemic. Diphtheria has been showing a tendency to increase. A similar increase is noted in other large towns without any adequate explanation. Antitoxin has been given to many hundreds of cases in large doses in the City Hospital without a single bad result. Dr. Hay refers to an outbreak of epidemic gastro-enteritis, and remarks that it is important for dairymen to remember that recent legal decisions appear to show that where any illness arises from milk that has become contaminated by the neglect of proper precautions at the dairy, the dairyman may be successfully sued for damages. As regards the projected new water-supply, Dr. Hay remarks that the waters of the Avon are of exceptional purity. The present water from the Dee enjoys a fictitious reputation for purity on account of its containing less dissolved matter than the average supply of other towns; but repeated bacteriological examinations show that the bacillus coli is almost constantly present in the water in a proportion far above that met with in uncontaminated waters. The meteorological averages for the ten years show February to be the coldest month in Aberdeen and July the warmest. According to the average for the five years ending 1907, the most fatal month for the population is January and the least fatal July.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7744 births and 5276 deaths were registered during the week ending Jan. 1st. The annual rate of mortality in these towns, which had been equal to 15·0 and 15·4 per 1000 in the two preceding weeks, further rose to 16·7 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 14·4 per 1000, against 15·6, the mean rate in these 76 towns during the corresponding quarter of the four preceding years 1905–8. The mean annual death-rate in London last quarter did not exceed 14·1 per 1000, and was 0·3 below the mean rate in the 76 towns. The lowest annual rates of mortality recorded in the 76 towns last week were 4·5 in Handsworth and 7·0 in Bury and in King's Norton; the rates in the other towns ranged upwards, however, to 24·8 in Huddersfield, 25·1 in Ipswich, 25·8 in Hanley, and 27·3 in Barrow-in-Furness. In London the recorded death-rate last week was equal to 16·2 per 1000. The 5276 deaths registered in the 76 towns last week showed a further increase of 422 upon the numbers in the two preceding weeks, and included 294 which were referred to the principal epidemic diseases, against 250 and 273 in the two preceding weeks; of these 294 deaths, 109 resulted from whooping-cough, 51 from diphtheria, 50 from measles, 34 from scarlet fever, 34 from diarrhœa, and 16 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·9 per 1000, corresponding with the rate in the previous week. No death from any of these diseases was registered last week in Willesden, Tottenham, Hornsey, St. Helens, or in 8 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·7 in Swansea, 3·3 in Barrow-in-Furness, 4·3 in Birkenhead, and 6·1 in Hanley. The fatal cases of whooping-cough, which had steadily increased the five preceding weeks from 61 to 78, further rose last week to 109, and caused annual death-rates equal to 1·5 in Walthamstow and in Smethwick, 1·6 in Derby, and 2·3 in Hanley. The 51 deaths from diphtheria showed an increase upon recently weekly numbers, and included 15 in London and its suburban districts, 4 in Hanley, 6 in Liverpool, 5 in Manchester and Salford, 3 in Barrow-in-Furness, 4 in Hull, and 2 in Middleshrough. The 50 fatal cases of measles differed but slightly from the numbers in recent weeks, but caused death-rates equal to 1·6 in Swansea, 2·1 in Northampton, and 3·4 in Birkenhead. Of the 34 deaths from scarlet fever, 8 occurred in London, 3 in Birmingham, and 6 in Manchester and Salford. The 34 deaths attributed to diarrhœa showed a further decline from the numbers in recent weeks. The 16 deaths referred to "fever" were fewer than in any recent week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined in the 11 preceding weeks from 2810 to 2361, were 2362 on Saturday last; 244 new cases of this disease were admitted to these hospitals last week, against 254 and 224 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 4 cases of small-pox on Saturday last. Of the 1502 deaths registered in London last week 360 were referred to pneumonia and other diseases of the respiratory system, against numbers declining from 432 to 332 in the four preceding weeks; these 360 deaths were 55 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 54, or 1·0 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 45 other smaller towns; the 54 uncertified causes of death in the 76 towns last week included 9 in Liverpool, 8 in Birmingham, 7 in Sheffield, 5 in Sunderland, and 3 in Rochdale.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 781 births and 675 deaths were registered during the week ending Jan. 1st. The annual rate of mortality in these towns, which had been 23·8, 19·6, and 19·5 per 1000 in the three preceding weeks, further declined to 18·9 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Scotch towns averaged 17·7 per 1000, and exceeded by 3·3 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 12·5 in Paisley and 13·5 in Aberdeen, to 23·7 in Dundee and 23·8 in Greenock. The 675 deaths from all causes in the eight towns last week showed a further decline of 22 from the numbers in recent weeks, and included 86 which were referred to the principal epidemic diseases, corresponding with the number in the previous week. These 86 deaths were equal to an annual rate of 2·4 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. The 86 deaths from these diseases in the Scotch towns last week included 63 from measles, 9 from diarrhœa, 6 from diphtheria, 3 from scarlet fever, 3 from whooping-cough, and 2 from "fever," but not one from small-pox. The fatal cases of measles, which had been 64, 46, and 42 in the three preceeding weeks, rose again to 63 last week, of which 49 occurred in Glasgow and 13 in Edinburgh. The 9 deaths attributed to diarrhœa showed a decline of 4 from the number in the previous week, and included 4 in Aberdeen and 3 in Glasgow. The 6 fatal cases of diphtheria, of which 4 were recorded in Glasgow, also showed a decline, as did the 3 deaths both from scarlet fever and whooping-cough, all of which occurred in Glasgow. Only 2 deaths in the eight towns were referred to "fever," of which 1 from enteric fever was recorded in Glasgow, and 1 from cerebro-spinal meningitis in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 275, 215, and 173 in the three preceding weeks, rose again last week to 181, and exceeded by 61 the number registered in the corresponding week of last year. The causes of 13, or 2·0 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 684 births and 557 deaths were registered during the week ending Jan. 1st, 1910. The mean annual rate of mortality in these towns, which had been equal to 23·2, 21·7, and 18·2 per 1000 in the three preceding weeks, rose to 25·4 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 19·1 per 1000, whereas the mean rate during the same period did not exceed 14·4 in the 76 largest English towns and 17·7 in the eight principal Scotch towns. The annual death-rate during last week was equal to 25·9 in Dublin, 25·9 in Belfast, 28·8 in Cork, 21·7 in Londonderry, 21·9 in

Limerick, and 11·7 in Waterford; the mean annual rate last week in the 16 smallest of the Irish town districts was equal to 28·0 per 1000. The 557 deaths from all causes in the 22 town districts during the week exceeded by 158 the number registered during the preceding week, and included 32 which were referred to the principal epidemic diseases, against 26 and 18 in the two preceding weeks; these 32 deaths were equal to an annual rate of 1·5 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·9 per 1000, but in the eight principal Scotch towns it was equal to 2·4 per 1000. The 32 deaths from these epidemic diseases in the Irish towns last week included 18 from whooping-cough, 5 from diarrhœa, 5 from "fever," 2 from scarlet fever, and 2 from diphtheria, but not one from small-pox. The 18 fatal cases of whooping-cough exceeded the numbers in recent weeks, and included 13 in Belfast. Of the 5 deaths attributed to diarrhœa, 4 occurred in Dublin. The 5 deaths referred to "fever" included 4 certified as enteric and one as typhus; of the 4 deaths from enteric fever 2 occurred in Dublin and 1 each in Cork and Drogheda, while the fatal case of typhus was returned in Galway. Both the deaths from scarlet fever occurred in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 83 and 134 in the two preceding weeks, further rose to 183 in the week under notice. The causes of 29, or 5·2 per cent of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent., and the eight Scotch towns 2·0 per cent.

THE SERVICES.

Royal Navy Medical Service.

The following appointments have been notified:—Staff-Surgeons: R. W. G. Stewart, to the *Melpomene*, on re-commissioning; and E. C. Sawdy, to the *Hampshire*.

Army Medical Service.

Colonel John M. Jones is placed on retired pay (dated Jan. 2nd, 1910). Lieutenant-Colonel Thomas J. R. Lucas, C.B., from the Royal Army Medical Corps, to be Colonel, vice J. M. Jones (dated Jan. 2nd, 1910).

Royal Army Medical Corps.

Major M. Swabey is appointed specialist in midwifery and diseases of women and children in the 5th (Mhow) Division. Lieutenant-Colonel G. H. Barefoot is appointed to command the Station Hospital, Bareilly, and Lieutenant-Colonel T. B. Winter to command the Station Hospital, Chakrata. Captain A. A. McNeight, Station Hospital, Cawnpore, is appointed to the medical charge of the Harness and Saddlery Factory from Nov. 16th, 1909, in addition to his other duties. He will also hold charge of the Department Followers' Hospital at that place as a collateral duty.

Indian Medical Service.

It is understood that Lieutenant-Colonel Grainger is to be confirmed as principal medical officer, Burma Division, on the retirement of Colonel McKay, C.B., C.I.E. On his return from leave, Lieutenant F. N. Windsor resumed charge of the duties of chemical examiner and bacteriologist to the Government of Burma from Captain T. F. Owens, whose services are replaced at the disposal of the Government of India. On return from leave, Captain D. S. G. Knapp is appointed superintendent of the Insein Central Jail in place of Lieutenant F. G. Fraser, whose services are placed at the disposal of the Government of Bombay in the Jail Department. Captain Cox reverts to military duty. Captain McKendrick is granted two months' leave. Captain C. H. Cross, on return from Chitral, is attached to the 15th Sikhs for duty.

Royal Naval Volunteer Reserve.

David Duncan Fraser Macintyre has been appointed Surgeon (dated Dec. 30th, 1909).

Special Reserve of Officers.

Royal Army Medical Corps.

Supplementary List: The undermentioned to be Lieutenants (on probation) (dated Nov. 29th, 1909):—Philip Walter Mathew and Aston Ridley Dale.

Territorial Force.

Royal Garrison Artillery.

Cornwall (Duke of Cornwall's): Surgeon-Lieutenant Edwyn G. Andrew to be Surgeon-Captain (dated Oct. 5th, 1909).

Infantry.

7th and 8th Battalions (Leeds Rifles), The Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Captain Alexander Mackenzie resigns his commission (dated Nov. 20th, 1909).

Royal Army Medical Corps.

1st South Midland Mounted Brigade Field Ambulance: Douglas Martin Spring to be Lieutenant (dated Oct. 30th, 1909).

Yorkshire Mounted Brigade Field Ambulance: George Scott Williamson to be Lieutenant (dated Nov. 1st, 1909).

3rd London (City of London) Field Ambulance: Supernumerary Lieutenant Reginald M. Vick is restored to the establishment (dated Dec. 8th, 1909).

2nd Lowland Field Ambulance: Lieutenant James K. Patrick to be Captain (dated Dec. 8th, 1909).

1st North Midland Field Ambulance: Lieutenant Edwin A. Wraith to be Captain (dated Nov. 26th, 1909).

2nd North Midland Field Ambulance: Major William P. Peake to be Lieutenant-Colonel (dated Nov. 5th, 1909).

1st South Midland Field Ambulance: Lieutenant George W. Craig to be Captain (dated Oct. 8th, 1909).

3rd Northern General Hospital: Major William S. Porter to be Lieutenant-Colonel (dated April 18th, 1909).

Attached to Units other than Medical Units.—Lieutenant David H. Weir to be Captain (dated August 10th, 1909). Captain Hugh N. A. Taylor is restored to the establishment (dated Sept. 6th, 1909). Lieutenant Henry Goudie to be Captain (dated Nov. 5th, 1909). Captain Charles A. Goullet to be Major (dated Dec. 5th, 1909).

For attachment to Units other than Medical Units.—Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Francis John Walker, from the 5th Battalion, The Lincolnshire Regiment, to be Lieutenant-Colonel, with the honorary rank of Surgeon-Colonel (dated Sept. 1st, 1909).

Volunteers.

Royal Garrison Artillery (Volunteers): 1st City of London: Surgeon-Captain Ernest H. Tipper, not having signified his wish to serve in the Territorial Force, is struck off the strength of the regiment (dated March 31st, 1909).

The Territorial Decoration.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force who have been duly recommended for the same under the terms of the Royal Warrant dated August 17th, 1908:—

Infantry.

4th Battalion, The Duke of Edinburgh's (Wiltshire Regiment): Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel Herbert Paget Tayler.

Royal Army Medical Corps.

1st West Lancashire Field Ambulance: Lieutenant-Colonel Frederic Joseph Knowles.

2nd Lowland Field Ambulance: Lieutenant-Colonel Alexander Dryden Moffat; Major William Henry Brown, attached to the Northumberland (Fortress) Royal Engineers; Major and Honorary Surgeon-Lieutenant-Colonel Frederick Vasey Adams, attached to the 5th Battalion, The Cameronians (Scottish Rifles); Lieutenant-Colonel and Honorary Surgeon-Colonel David Lennox, attached to the 4th (City of Dundee) Battalion, The Black Watch (Royal Highlanders).

Deaths in the Services.

Lieutenant-Colonel Campbell Mellis Douglas, V.C., R.A.M.C. (retired), on Dec. 31st, 1909, aged 69. He entered the service in 1862 as assistant surgeon, became surgeon in

1873, surgeon-major in 1876, and retired in 1882. He was decorated with the Victoria Cross, together with four privates of the 24th Regiment, "for the very gallant and daring manner in which, on May 7th, 1867, they risked their lives in manning a boat and proceeding through a dangerous surf to the rescue of some of their comrades, who formed part of an expedition which had been sent to the island of Little Andaman, by order of the Chief Commissioner of British Burmah, with the view of ascertaining the fate of the commander and seven of the crew of the ship *Assam Valley*, who had landed there, and were supposed to have been murdered by the natives. The officer who commanded the troops on the occasion reports: 'About an hour later in the day, Dr. Douglas, 2nd Battalion 24th Regiment, and the four privates referred to, gallantly manning the second gig, made their way through the surf almost to the shore, but finding their boat was half filled with water, they retired. A second attempt made by Dr. Douglas and party proved successful, five of us being safely passed through the surf to the boats outside. A third and last trip got the whole of the party left on shore safe to the boats.' It is stated that Dr. Douglas accomplished these trips through the surf to the shore by no ordinary exertion. He stood in the bows of the boat and worked her in an intrepid and seamanlike manner, cool to a degree, as if what he was then doing was an ordinary act of everyday life. The four privates behaved in an equally cool and collected manner, rowing through the roughest surf when the slightest hesitation or want of pluck on the part of any one of them would have been attended by the gravest results. It is reported that seventeen officers and men were thus saved from what must otherwise have been a fearful risk, if not certainty of death." He was also awarded the silver medal of the Royal Humane Society for the same service.

THE MEDICAL CORPS OF THE UNITED STATES ARMY.

It has long been a problem with the official heads of the medical department of the army how to keep its ranks filled with qualified surgeons, but the restrictions have been so great, both in compensation, relative rank, and opportunities for promotion, that comparatively few qualified graduates sought admission to the service. The numerical corps authorised by law had so dwindled that it entirely failed to meet the needs of the service. The failure to attract applicants excited alarm in the staff lest the medical staff should be reduced to a minimum. In the year 1907, of 64 applicants but 10 were accepted for the Army Medical School and subsequently commissioned. During the same period, from October, 1906, to October, 1907, 11 vacancies occurred, thus showing that the annual loss to the corps exceeded the supply, and proving that unless Congress made the position of surgeon more attractive to the profession the corps would in the course of time become extinct by natural causes. The act of Congress in 1908 reorganised the medical department, and provided substantial increase of pay and conditions favourable for promotion. Four months after the passage of the Reorganisation Bill an examination of candidates was held, and although but little opportunity had been given to inform medical students of the changes effected in the position of the members of the medical staff the applicants numbered 128, and of those 25 were accepted. The records show that in January and July, 1909, 270 candidates were examined, and 57 were accepted. The attendance at the Army Medical School at Washington in 1909 was 58, as compared with 33 in 1908 and 10 in 1907.

THE HOSPITAL FUNDS.—With a view to lightening as far as possible the labour of hospital officials charged with the duty of supplying manuscript information in connexion with applications for grants, the King Edward's Hospital Fund, the Metropolitan Hospital Sunday Fund, and the Hospital Saturday Fund have decided that their questions as to "statistics," "income and expenditure," and "salaries and wages" at hospitals, convalescent homes, and similar institutions shall be uniform in wording, so that the replies drafted for one fund can be copied, when the time comes, on to the forms issued by the other two. This will apply only to these particular questions and not to inquiries upon other subjects. Nor will it apply to nursing institutions or dispensaries. A very complete "index of classification" of all items of hospital expenditure has been published.

Correspondence.

"Audi alteram partem."

ASEPSIS AND ANTISEPSIS.

To the Editor of THE LANCET.

SIR,—We have read with interest Sir W. Watson Cheyne's "Remarks on the Treatment of Wounds in Connexion with the Recent Results obtained at St. George's Hospital," published in THE LANCET of Jan. 1st. Would you, Sir, kindly allow us to make a few comments on his paper?

It may be worth while recording how the idea of compiling the statistics, contained in our paper of Nov. 27th, 1909, arose. We both came to St. George's Hospital from Cambridge, one of us in 1895, and the other in 1902. Many of our friends and contemporaries came at the same time to other London hospitals. Each of us in turn found a healthy spirit of rivalry to exist between the house surgeons at the different London hospitals. Our friends told us of the astonishing results obtained at their respective hospitals, and in many we were given to understand that suppuration was practically unknown. We therefore made visits to the hospitals concerned and went round the wards with our friends, and the results we saw were not quite in accordance with what we had been led to expect. The change which occurred two years ago at St. George's Hospital seemed to us a favourable occasion for compiling definite statistics on the subject.

Sir Watson Cheyne writes: "The essence of the question at issue is whether the treatment of wounds shall be looked upon as a bacteriological problem or not." Personally we know of no surgeon who does not regard the treatment of wounds as a bacteriological problem, and a very complex one. It often happens, however, that there is more than one solution of a problem, but our paper did not attempt to discuss whether the "antiseptic" or the so-called "aseptic" method afforded the better solution. Time alone will show whether one or both of these methods is scientifically sound. Perhaps both may be superseded. As regards the value of any method, it is easy to point out possible defects in the carrying out of that method, but are these defects in technique arguments against the method itself?

We must take strong exception to Sir Watson Cheyne's summary paragraph "if these are the best results that can be got by the recent aseptic methods, the sooner they are abandoned the better for the well-being of the patient and the peace of mind of the surgeon." In our paper we said that in no case was convalescence materially prolonged, nor did a septic infection prove fatal. For instance, after an operation for radical cure of hernia the stitches may be taken out by the house surgeon about the seventh day; round one stitch is a drop of pus which is swabbed away as the stitch is removed. About the tenth day the wound is seen by the surgeon and found to be perfectly healed. In such a case the well-being of the patient is unimpaired and the surgeon retains his peace of mind. Yet we include many similar cases as "septic" in our statistics.

The whole crux of this question is the exact meaning which the words "septic" and "septic infection" convey to the mind of the investigator. We laid down for ourselves certain rules in compiling our statistics; but we do not doubt that anyone else dealing with these identical records might bring out different figures according to the rules which he chose to lay down for himself. Both of us regard Sir Watson Cheyne's results with unbounded admiration, and we think that they reflect that healthy enthusiasm of which his house surgeons afford such shining examples. We did not say in our paper that we were satisfied with our results*; yet, in spite of Sir Watson Cheyne's personal statistics (and, as is well known, personal statistics are better than average statistics), we still believe that at the present time a practitioner will not be far wrong who points out to his patient that of 100 "clean" cases operated upon some 93 will have wounds which heal without a trace of septic infection; some five or six will have some small spot of infection which will neither retard convalescence nor interfere with the well-being of the patient, nor make the surgeon uneasy; some one or two will have their convalescence retarded, but very rarely will death or ill-effects to the patient ensue.

In conclusion, and in justice to our hospital, we must insist that it is scarcely fair to compare the work of seven surgeons on the staff of a hospital—that is, the whole surgery of that hospital—with the work of one surgeon reported upon by his own house surgeons.—We are, Sir, yours truly,

HERBERT S. PENDLEBURY.
Jan. 5th, 1910. IVOR BACK.

To the Editor of THE LANCET.

SIR,—Sir W. Watson Cheyne appears to see in the comparison of two relatively small sets of figures a complete vindication of an obsolescent system of wound treatment. Before such a conclusion can be accepted as convincing several possible sources of error must be eliminated. The first and greatest fallacy lies in comparing the results obtained from the uniform practice of a single surgeon with those shown in the collected statistics of a large number of different operators. Almost any man who has made a speciality of a particular operation can find cause for self-congratulation when he compares his own results with those of a large number of other surgeons collected from different sources. Sir Watson Cheyne may be said to have made a speciality of one particular form of wound treatment, and the results of his personal methods seem to be particularly gratifying. His thousand odd cases, however, should be compared with a similar number in the personal practice of some surgeon who has in like manner made a special study of the "so-called" aseptic methods.

Sir Watson Cheyne, whilst emphasising his use of chemicals in the preparation of his materials, does not say whether or not he makes a practice of bringing those chemicals into actual contact with the living tissues, which is, after all, the essential point of difference between the two "schools." I do not think that he presents this difference quite fairly. All surgeons, if they think at all, must regard the treatment of a wound as a bacteriological problem, but I do not think that those who practise "asepsis" do, as he says, "regard the action of the tissues as the essential element and the bacteriological question as of secondary importance." On the contrary, their first care is to keep bacteria out of the wound, and at the same time, by avoiding as far as possible the destruction of living cells which is so easily brought about by the action of chemical solutions, to give the wound the best chance of dealing with any organisms which, in spite of all care, may accidentally have gained access to it. Few, if any, wounds are aseptic in the strictly bacteriological sense, as has been shown by Dudgeon and myself.[1]

The "antiseptic" school, on the other hand, maintains that chemicals should be poured upon a clean wound in the hope of killing organisms which may have gained access to it during the operation. That, I take it, is the essential difference between the two methods, and if Sir Watson Cheyne, whilst using chemicals for the disinfection of all his material, is yet careful to avoid their destructive action upon the living tissues, I for one should regard him as an "aseptic" surgeon. The methods by which he seeks to sterilise his materials are chemical; those of the "aseptic" school are mechanical and thermal. The essential difference between his methods and those which he affects to despise would therefore be reduced, not to one of wound treatment at all, but to one of preparation for operation. If, on the other hand, he drenches his clean wounds with chemicals I fail to see that he is directing his energies to the "bacteriological requirements of the case." Further, I should like some information as to the criteria upon which his wounds are divided into infected and non-infected. Do they rest upon bacteriological examination, upon the presence or absence of visible pus, upon the clinical signs of inflammation, or upon the temperature chart? Again, who were the judges of infection or non-infection? If the results are based upon his own personal observation the value of the figures would be immeasurably greater than if they are based upon the observations of the 17 house surgeons, for not only would those observations in the latter event lack the essential element of uniformity, but they would also tend to be modified by that healthy spirit of rivalry to which he alludes.

Finally, Sir Watson Cheyne, insisting upon the personal element, justly attributes the failures of his own methods to human frailty, but is only too anxious to throw the onus of "aseptic" failures upon the method rather than upon its exponents. Moreover, whilst stating his opinion that his 1·8 per cent. of suppuration is not the best that could be obtained by chemical methods, he appears to take it for granted that 7·2 is the lowest percentage of suppuration that can be obtained by "aseptic" methods. This, of course, is far from being the case. There are other points in Sir Watson Cheyne's paper which call for comment, but space forbids my dealing with more than one. Speaking of tuberculous abscesses, he is apparently content to take the "opinion of a distinguished orthopædic surgeon" that the opening of such abscesses is the cause of the death of numbers of children (presumably when treated "aseptically"), and, without verification (inasmuch as it is "just what he would expect"), to found upon that opinion a charge against "aseptic" surgery which is entirely without justification. During the year 1909 64 psoas and other tuberculous abscesses were treated at St. Thomas's Hospital by incision, flushing with saline solution, and closure without drainage. Three only of these failed to heal by first intention, a proportion of successes which, I venture to believe, has never been excelled by chemical methods.

I am, Sir, yours faithfully,
Harley-street, W., Jan. 1st, 1910. PERCY SARGENT.

THE TREATMENT OF SYPHILIS BY INTRAMUSCULAR INJECTION OF INSOLUBLE PREPARATIONS OF MERCURY AS CONTRASTED WITH THE INUNCTION METHOD.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 25th, and in reply to Dr. G. Pernet's article of July 24th, 1909, I wrote an article, "The Treatment of Syphilis by Intramuscular Injections of Insoluble Salts of Mercury as Contrasted with the Inunction Method: a Critical Rejoinder." On Oct. 9th a letter appeared from Dr. Pernet and on Oct. 16th a joint communication was published on the same subject signed by Dr. Stopford Taylor and Dr. R. W. MacKenna. Speaking of intramuscular injections of insoluble preparations in private practice, Dr. Pernet states "that where full control of the patient could be obtained he found no ill effects ensue after 10 to 12 consecutive weekly injections of doses varying from 7 to 10 centigrammes." I regret that owing to a typewriter's mistake 1 to 10 instead of 7 to 10 centigrammes, as stated by Dr. Pernet, appeared in error, and that the context was curtailed. Further, on p. 924, line 8, the word "monthly" should read "weekly." There was no intention to misquote Dr. Pernet. The proof sheets were not revised, as I had left Woolwich for Malta. The point raised by me, however, is that in regard to insoluble grey oil preparations even as an early, intensive, abortive measure, 10 to 12 consecutive weekly injections of doses varying from 7 to 10 centigrammes (1 to 1½ grains metallic mercury) are inadvisable as judged by army experience. Formerly doses containing 2 grains (14 centigrammes) metallic mercury were used weekly in the army over lengthened periods, but discontinued since the deaths in 1901 in Egypt and elsewhere. Dr. Pernet, speaking of a case of his own treated by a series of 10 to 12 *huile grise* injections (7 to 10 centigrammes metallic mercury), writes: "The injections have been well borne, although the patient had been liable to pseudo-dysenteric attacks." Are we to understand that this case, cited as already suffering from syphilis and malaria, suffered also from tropical dysentery or from mercurial toxic enteritis?

---

[1] THE LANCET, Nov. 17th, 1906, p. 1335.

When speaking of insoluble grey oil preparations (Lambkin's formula) I stated: "As regards my personal experience of this method, I never give it to in-patients now, as I consider other methods much more valuable. I have probably given or seen administered 15,000 injections of insoluble grey oil (Lambkin's formula) to 'out-patients.' I never give more than six weekly injections of 10 minims each of the standardised mercurial cream (Lambkin's formula). This contains one grain metallic mercury in each dose [i.e., 7 centigrammes]. I allow an interval of from two to three months, then another course as above, and so on for two years."

I am at a loss to understand, therefore, why Dr. Stopford Taylor and Dr. MacKenna should place an erroneous construction on my words in their letter by saying: "We are surprised that Major French should lend the weight of his authority to the recommendation 'that weekly insoluble injections of standardised grey oil should not ever be made for over six weeks, and in certain cases four weeks.' ...... We are prompted to wonder whether it is for this reason—viz., inadequate dosage —that ...... 'injections of insoluble salts of mercury ...... have not the same curative action on syphilis in the early stages as ...... inunction or hydrargyrum cum creta with opium.'" I did not refer to a single course, as I previously wrote "courses extending over two years." Colonel Lambkin also advises "just half the dose as soon as the patient has been discharged from hospital." I, too, am prompted to wonder whether *la grippe mercuriale*, diarrhœa, and pseudo-dysenteric attacks which not infrequently occur after too prolonged injection or too large doses of insoluble grey oil might not be avoided by smaller doses, since mercurial enteritis may be accompanied with rapid wasting and heart failure. It was for this reason I suggested 7 centigrammes (metallic mercury 1 grain) as a safe dose in average cases. I consider 14 centigrammes (2 grains metallic mercury) for four weeks in succession, followed by 7 centigrammes (1 grain metallic mercury) for 14 consecutive weeks, and 10 centigrammes twice at intervals of two weeks, as prescribed by Dr. Taylor and Dr. MacKenna, an unwise dose over such a lengthened period. This works out at 25 grains metallic mercury in 22 weeks. Dr. Pernet attributes the deaths in the army in 1900–01 to too large doses—namely, 30 grains, extending over 36 weeks. The dose used by Dr. Taylor and Dr. MacKenna appears to be somewhat similar. I can further state that no orderly ever gives an injection in the army as suggested by Dr. Taylor and Dr. MacKenna, when attempting to explain the regrettable deaths under insoluble preparations.

Dr. Pernet stated in his article of July 24th "that at the Sheffield meeting of the British Medical Association (Dermatological section) in 1908 Professor Neisser of Breslau and he were the only two speakers who were resolutely in favour of the use of the insoluble preparations of mercury." In the recent valuable third report of the Advisory Board for Medical Services on "The Treatment of Venereal Disease and Scabies in the Army," p. 14, it is clearly stated in regard to Professor Neisser's university clinic at Breslau: "For patients in hospital inunctions are mostly employed, five grammes for men and three for women. From 40 to 50 inunctions complete the course. For out-patients injections of soluble salts are largely employed. The insoluble salicylate has given the best results and is now most largely used." Grey oil is not even mentioned. I do not consider, therefore, that Professor Neisser can be so "resolutely in favour" of insoluble preparations to the exclusion of other methods. Captain Dorgan, R.A.M.C., writing in the *R.A.M.C. Journal* in August, 1908, p. 128, when speaking of grey oil, states: "The remainder of my cases showed definite relapses whilst under injections, and I had been giving to all large doses, nearly always more than two grains per week (i.e., 14 centigrammes metallic mercury). My routine was to admit them to hospital and press the dose to the uttermost limit by inunction or hydrarg. c. creta. I maintain that this tolerance could not with safety be approached by injection, knowing, as we do, that the next dose may lead to serious, if not fatal, results."

Mr. Charles Gibbs of the London Lock Hospital stated in evidence at the commission of inquiry "that severe relapses are twice as frequent after injections as after inunctions or pill treatment, and iritis is peculiarly common in the relapse after intra-muscular injection." I beg to differ, therefore, from Dr. Pernet and others who attempt to belittle this independent evidence. I understand that Mr. Gibbs sees most of the out-patient civil hospital syphilis practice in London. He is consequently in an excellent position to impartially judge, since the great bulk of his cases, I am informed, consist of soldiers who have left the army, where injections of insoluble grey oil form the routine method of treatment for out-patients.

Dr. Pernet says "that he has never himself used the mercurial cream as employed in the British army, but French preparations of *huile grise* only," and "that he now uses Lafay's standard preparation." The standardised mercurial cream employed in the British army (Lambkin's cream) is almost identical with Lafay's "*huile grise.*" Lambkin's formula, "especially in its later form, closely resembles the grey oil of continental writers." Dr. Pernet, in using Lafay's *huile grise*, would, therefore, appear to have been entertaining an angel unawares. The mercurial content is expressed in terms of metallic mercury, being usually taken as the index of the potency of these preparations. The formulas are: Lang's grey oil (introduced in 1886); mercury, 2; sterilised anhydrous lanolin, 1; sterilised liquid paraffin, 1. All ingredients by weight. Has a specific gravity of 1·50 and consequently 2 minims contain 1½ grains of mercury—that is, 10 centigrammes. A special syringe is used marked in 2 minim doses. *Lafay's* grey oil (called *huile grise*, modification of Lang's): mercury, 40; sterilised anhydrous lanolin, 12; sterilised white vaseline, 13; sterilised vaseline oil, 35. By weight: specific gravity 1·40, and 2½ minims contain 1⅖th grains of metallic mercury (that is, 10 centigrammes). 10 centigrammes = 1½ grains metallic mercury. *Lambkin's* grey oil (introduced in 1891), and called Lambkin's cream, after Dr. Althus's carbolised mercurial cream, who first introduced it into London: mercury, 1; anhydrous lanolin, 4; liquid paraffin with carbolic acid (2 per cent.) to produce 10. Mercury and lanolin by weight; the liquid paraffin by measure. 10 minims contain 1 grain metallic mercury (that is, 7 centigrammes). Colonel Lambkin's formula above quoted is the grey oil ordinarily used in the British army in England, and 10 minims (7 centigrammes metallic mercury) is the ordinary dose. Abroad a slightly different formula is used for warmer climates (temperature 70° to 80° F.), and I use this myself now at Malta—namely, Form A: Hydrarg. pur., 2 drachms (by weight); adeps lanæ anhydrous, 3 drachms (by weight); paraffin. liquid. carbol. (2 per cent.) ad 10 drachms (by measure). 5 minims contain 1 grain of metallic mercury (that is, 7 centigrammes). This latter formula very closely indeed approximates to Lafay's "*huile grise.*" There were two other forms—namely, B and E. For a full account of the original research work which I made on this subject, extending over many months, I would refer Dr. Pernet to the November and December, 1908, numbers of the *British Journal of Dermatology*, where my official report is furnished on all three forms; the only difference in composition being that in place of paraffin. liquid. carbol. (2 per cent.), paraffin. molle alb. carbol. (2 per cent.) was used in B and E forms, which made the preparation denser and firmer. I reported "that the chronic intermittent plan of intramuscular injection has been used with all three forms, that is, six weekly injections of gr. 1 (7 centigrammes) metallic mercury, rest for three months, then six weekly injections, and so on for two years. I have not seen any case of mercurial stomatitis under the use of the chronic intermittent plan. Owing, however, to the frequency and persistence in many instances of marked glandular enlargement amongst out-patients, and the not infrequent occurrence of severe relapse, the total effect on the early stages of syphilis of insoluble salts of mercury is not always apparent amongst out-patients." I have closely studied the effect of insoluble grey oil to date (October, 1909) and the beneficial effect on the early stages of syphilis (chancre, inguinal adenitis, &c.) is, in my opinion, not nearly as marked as that by the inunction method properly applied in hospital, where the patient is dieted and under much better discipline. I have recently tried on in-patients at Malta doses containing 1½ grains of metallic mercury (that is, 10 centigrammes) on the so-called early, abortive plan, and the result has been no better than with a smaller dose, and not infrequently toxic symptoms developed about the fifth dose.

In the first report of the Advisory Board on Venereal Diseases in the Army it is stated on p. 12: "In certain cases ...... mercury ceases to be absorbed, and what has previously been absorbed is not eliminated. This condition known as mercurial stasis involves great risk to the patient. This is especially the case when injections of insoluble preparations are being made use of, as a large quantity may be introduced into the tissues with serious or fatal consequences when absorption again commences." In some 20 to 25 deaths on record under injections of insoluble preparations, mercurial stasis commonly occurred before death and could occur as long as two months after the last injection. This emphasises the important fact that insoluble preparations are by no means always regularly absorbed or eliminated.

My object in replying on Sept. 25th, 1909, to Dr. Pernet's article was to indicate possible dangers from a too purely routine use, or from too large doses of insoluble grey oil, and so obviate, if one could, any possibility of a repetition of the numerous accidents that arose from the abuse of mercury a century ago, which, for a time, led to the disuse of our most valuable agent in the treatment of syphilis, when *judiciously* administered.—I am, Sir, yours faithfully,

Malta. H. C. FRENCH, Major, R.A.M.C.

INFLUENZA WITH SCARLATINIFORM RASH.

To the Editor of THE LANCET.

SIR,—Influenza is, of course, by no means the only infectious disease which occasionally shows a rash simulating the rash of scarlet fever. There is, for instance, the prodromal scarlatiniform rash which occasionally precedes the characteristic rash of small-pox. (It is true that the distribution of the scarlatiniform rash in small-pox, together with the other symptoms, should prevent a mistake in diagnosis, but in my experience in connexion with fever hospitals I have known a case notified as scarlet fever and recommended for admission to the ordinary scarlet fever wards.) Occasionally a scarlatiniform rash is seen as a prodromal rash in measles, or diphtheria, or even typhoid fever or chicken-pox. Indeed, in my opinion, any septicæmia may give rise to such a rash, and therefore, of course, a diagnosis of scarlet fever should never be based on a rash alone, though it is always safe to conclude that a scarlatinal rash indicates the probability of an infective germ at work, and that the case should be promptly isolated at home. A careful investigation even at the first visit will almost invariably secure a sufficient amount of evidence to make a correct provisional diagnosis, which in the majority of the more doubtful cases will probably be amply confirmed at the next visit.

I am, Sir, yours faithfully,

Norwich, Dec. 31st, 1909. J. T. C. NASH.

A MEDICAL BRANCH OF THE NAVY LEAGUE.

To the Editor of THE LANCET.

SIR,—A proposal has been made to form a branch of the Navy League which shall consist entirely of medical men, irrespective of political opinions. Our profession has lent invaluable aid to various movements in the past, and there is no object more worthy of our support than the one which deals with the first line of defence in this country. Knowing the exceptional opportunities which medical men possess of discussing questions with all grades of society it seems only right that some organised attempt should be made by the profession to use these opportunities, and thus further the interests of an object which so closely affects the welfare of the Empire. The Navy League has proved of such value in this country that a similar organisation has been founded elsewhere with such singular success that its membership now far exceeds that of the English League. We believe that if medical men choose to use the influence that they possess they can do a great deal towards advancing the claims of this league, and it is with this end in view that we the undersigned have formed ourselves into a provisional committee for the founding of a medical branch of the Navy League. The following are the rates of subscription: Vice-Presidents, £5 annually; Fellows, £1 1*s.* annually; Members, 5*s.* annually.

All medical men who wish to join this branch are requested to send in their names to Dr. Maurice Craig, 54, Welbeck-street, London, W., who will forward the necessary form of of application for signature.

We are, Sir, yours faithfully,

W. H. CLAYTON GREENE,
G. LENTHAL CHEATLE,
MAURICE CRAIG,
JOHN FAWCETT,
ALFRED D. FRIPP,
W. P. HERRINGHAM,
ARTHUR LATHAM,
W. T. LISTER,
E. D. MACNAMARA,
HERBERT S. PENDLEBURY,
HUGH M. RIGBY,
RISIEN RUSSELL,
LEWIS SMITH.
R. PERCY SMITH,
J. M. G. SWAINSON,
H. CAMPBELL THOMSON,
H. G. TURNEY.

Jan. 4th, 1910.

THE INDICATIONS FOR OPERATION.

To the Editor of THE LANCET.

SIR,—It seems advisable that an early protest should be entered against the latest development of the lust for operation with which, judging from Mr. B. G. A. Moynihan's article in your issue of Jan. 1st, we seem to be threatened. We have in recent times seen inoffensive mobile kidneys proclaimed to be so great a danger as to demand immediate operation. We have seen appendicular affections elevated into a species of cult, imposing upon every practitioner who valued his reputation the necessity for reading into any abdominal pain so imminent a menace to life as to require the instant removal of perfectly normal appendices.

Now, forsooth, if Mr. Moynihan is successful in obtaining disciples, we are about to witness the unedifying spectacle of people with simple indigestion being hurried to the table to undergo an operation for duodenal ulcer. The road is to be a royal road. "It is therefore not necessary to the attaining of an accurate diagnosis that an examination of the patient should be made. The anamnesis is everything, the physical examination is nothing."

And this "anamnesis," what does it reveal? It reveals the ordinary classical symptoms of acid dyspepsia, as described in a thousand text-books, and successfully treated by bismuth and soda by millions of practitioners. Only this, and nothing more.

As I transcribe the above astounding passage I pause to wonder whether, after all, Mr. Moynihan is not indulging in a joke. If he is, I may perhaps be allowed the reflection that his jocularity is something lacking in polish, but if he is not joking I feel sure that I am not the only person who will feel that his teaching is seriously lacking in qualities which are even more important than polish.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 1st, 1910. LEONARD WILLIAMS.

GUERNSEY SUNSHINE, 1909.

To the Editor of THE LANCET.

SIR,—During the past gloomy year 1967 hours of sunshine have been registered in Guernsey. I think this means that Guernsey holds the record for the year in the British Isles, as it has done on many previous occasions.

I am, Sir, yours faithfully,

HY. DRAPER BISHOP,
Medical Officer of Health, States of Guernsey.

Health Office, Guernsey, Jan. 3rd, 1910.

THE MEDICAL VETO ON SCHOOL ATTENDANCE FOR CHILDREN SUFFERING FROM CHRONIC DISEASE.

To the Editor of The Lancet.

Sir,—That ultimately the attendance at school of a particular child will be at the discretion of a school medical officer is, I think, undoubted. The latest memorandum from the Local Government Board and the Board of Education on infectious disease places so much responsibility upon the school medical officer with regard to individual children that the habit of applying to him for endorsement of medical certificates will not be confined to the present list of infectious diseases, but will probably be extended to all children. There is already a tendency for school attendance officers to rely upon the verdict of the school medical officer in cases of chronic debility where a medical certificate is not procurable or when the child can be brought to attend a medical inspection. In this relation it is probable that a whole-time school medical officer will at times conflict with the expressed opinion of the medical practitioner. It is on this account that I write this letter.

The extent to which medical practitioners rely upon absence from school as a panacea for chronic disease and debility is extraordinary, and yet, in the country at least, the results fall far short of the intention. In the majority of cases nowadays absence from school is recommended to ensure fresh-air treatment. Actually by staying away from school the child gets less fresh air. The mother, however willing, has housework to perform, washing, cooking, &c., which cannot be conducted in the open air, and the child holding close to the mother, she being its only companion, insensibly becomes a house-dweller. Luckily, it is the younger children—those between 5 and 6 years—who are usually kept at home, but frequently older children, especially girls, say, from 9 to 12 years of age, are advised to stay away. The younger children may make up the leeway, but the older children (girls) rarely do, and with them it is the most difficult thing to get them later into such a condition that they can attend school. The secret of this lies in the fact that any prolonged stay at home deprives a child of companionship. Life is, after all, but a competition, and a competition from the first to the last. To keep any child out of competition is to start it later on in the race with a handicap. Children with physical disability are already so handicapped that deliberately to keep them from intercourse with their fellows is to handicap them enormously. There is hardly a case, for instance, of infantile paralysis of the leg which is not self-centred, prone to excitement and depression alternately. Parents are indulgent on account of the deformity; the child shuns its fellows and prefers its own company. Those children for the very reason of their defect should be thrust out from home, thrust into competition with their fellows, and in so doing they acquire the training necessary for the competition of life; they form friends, and friends are a necessity to mankind. Unless the habit of friendship is formed early it is not formed at all.

Thus far I have considered the effect of staying at home upon the mind, but upon the body attendance at school has an equally great effect. The greatest success of medical inspection in this county area has been in showing the parents that by sending a child to school and giving it fresh air at night the children will get on. The going to and from school and the playtime with its comrades, have counteracted the effects of sitting in a possibly badly ventilated school for a few hours. Where it succeeds best is in children between 5 and 6 years of age with large tonsils and adenoids and frequent attacks of slight bronchitis, promptly labelled "consumptive." After a year or two "growing out of tonsils and adenoids" those come to school regularly in the ordinary course; make a point of their attending school and the "bronchitis" or "consumption" disappears automatically. But even in the case of children with heart disease whom no one would recommend strongly to attend school, is there any object in keeping them away from their fellows? The aim of school is to fit a child for the struggle in life, and it is the form of training which centuries of experience have taught us is the best. Who are we that as medical practitioners we should go against what hard experience has taught us all—viz., that school-life fits the child best for after life? We should remember that keeping a child away from its fellows, even for a short period, may have effects which will lastingly handicap the child through life, and we should not be in a hurry to accept the responsibility thereof.

I am, Sir, yours faithfully,

G. I. Stewart, M.B. Aberd., F.R.C.S. Eng.,
School Medical Officer, East Suffolk.

Ipswich, Jan. 1st, 1910.

MANCHESTER.

(From our own Correspondent.)

The Infirmary and Scarlet Fever.

There is a good deal of scarlet fever in Manchester, and it is, of course, desirable to keep it out of the infirmary, provision being made for it at the municipal hospital at Monsall. In order to aid in this object Dr. J. Niven, the medical officer of health, has offered, and the infirmary board has accepted the offer, to check the list of patients seeking admission to the infirmary, in order to ascertain if there is any infectious disease in the houses of prospective patients.

Hospital for Consumption at Radcliffe and Whitefield.

Last summer the sum of £1500 was raised with the object of establishing a hospital for consumptives for Radcliffe and Whitefield. Since then, however, Mr. and Mrs. Aitken of Holcombe Hall, near Burnley, have generously offered their residence as a sanatorium under the control of the Bury and District Joint Hospital Board, in whose area Radcliffe and Whitefield are included. This offer has made the first scheme unnecessary, but the sum of £1250 of the money raised is to be set apart for the families of poor consumptive patients. Where the father, the "breadwinner," is the victim the anxiety felt for his family must add a grievous burden in addition to that of his malady. The administration of the fund will be in the hands of public men, and representatives of the Trades Council, the Coöperative Society, and the Charity Organisation Society, who will be trustees.

The Homeless on the Brick-crofts.

Notwithstanding all the philanthropic efforts of the benevolent of Manchester, and notwithstanding the provision made by the Poor-law for the shelter of the homeless, there is a vast amount of unrelieved misery. Every night of the year numbers of men sleep out on the brick-crofts in the outskirts of the city, and batches of them are frequently brought up at the police courts. A visitor spent the night at one of these resorts, and found at least 50 men in the various kilns, drying sheds, and other out-houses. Many of the men were said not to have had any other shelter for weeks. If this indicates the numbers to be found at the other brick-crofts round the city, some hundreds, probably 400 or 500, must seek such shelters every night. The police are said to apprehend these people with some reluctance, as they are not, as a rule, criminals but the victims of circumstances. Whether they have come to their present condition by their fault or folly, by crime, laziness, or incapacity does not help much in the solution of the difficulty. With many the difficulty of getting work to do is the root of the matter. Others are loafers, tramps, the idle, and shiftless, those "born tired," with whom is a proportion of weak and ailing. It is an undoubted danger to the public health that these men should herd together, with the great probability of spreading disease, and the certain injury to their own health. The amount of damage done to bricks and boards also is said to be very great, but the proprietors are afraid of trying to stop the trespass lest they should be made to suffer by vindictive destruction.

Foreign Meat.

The meeting of the port sanitary authorities of Manchester on Dec. 29th showed how necessary it was to keep a keen watch on imported food brought up by the Ship Canal. The medical officer reported that during the month 16 tons of unsound food had been condemned. This was chiefly at the foreign animals wharf. It is very evident that the importation of animal food by the canal requires careful watching. Just before Christmas an unusually large number of cattle arrived at the wharf, no doubt in anticipation of demands of the season, and among these an exceptionally large number had to be condemned.

Medical Women as Resident Officers at the Infirmary.

The agitation caused by the decision of the Infirmary Board of Management not to admit qualified ladies to resident positions in the Manchester Infirmary does not show any sign of abatement. At the monthly meeting of the Chorlton board of guardians on Dec. 24th Miss Hertz moved that a strong protest against the decision of the Infirmary board should be sent on the ground "that it was not only detrimental to the female students, and therefore to the general public, employing medical women, but also to the interests of the sick poor in the infirmary wards." Miss Hertz went on to say: "All that was asked was that women should be treated on equal terms with men in regard to medical appointments." It has not, so far as is known, been suggested that women should have preference over men as regards residential appointments. It is to be regretted that Miss Hertz thought it necessary to say that the guardians subscribed £21 a year, and that their views should therefore have some weight. Another of the lady guardians, while protesting against the attitude of the infirmary board, was opposed to any threat of withholding the subscription. The motion was carried by 12 votes to 7. It has also been decided by the executive of the committee formed to secure the admission of qualified medical women to resident posts in the infirmary to send a courteously worded protest to the infirmary board of management.

Jan. 4th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Presentation to the David Lewis Northern Hospital.

ON Dec. 23rd, in the David Lewis Northern Hospital, a bust of the late Mr. Benn Wolf Levy, the gift of Mrs. Louis Cohen, was presented to the hospital authorities by Mr. Louis Cohen. The David Lewis Northern Hospital, it will be remembered, was rebuilt in its present commodious form from funds left by the late David Lewis to Mr. B. W. Levy and a relative resident in Australia, whose united generosity in administering a considerable proportion of the fund displayed itself in the way indicated for the benefit of the public of Liverpool. Mr. H. Wade Deacon (the chairman) gratefully accepted the gift on behalf of the hospital committee, making sympathetic references to the late Mr. B. W. Levy and the generosity with which he and his Australian relative had been inspired towards the hospital.

Cheshire Asylum Extensions.

An inquiry was held recently at the Cheshire county council office, Chester, by Mr. E. A. Fawcett, Local Government Board inspector, into the application of the Cheshire county council for sanction to borrow £82,000 for the purpose of the extension of Upton Lunatic Asylum. This step has been rendered necessary in consequence of the rapid increase of lunacy in Cheshire. Some three years ago the matter was discussed by the Cheshire county council as to the best means of providing additional accommodation for the increasing number of patients. It was eventually decided that accommodation should be provided at Upton for 500 additional patients, of whom 100 would be private or paying patients. It was proposed to build a new annexe for 440 patients, and an epileptic ward for 60 female patients. The estimated cost of the annexe was £65,891, and of the female epileptic ward £5328. At present there is no hospital accommodation for the patients, for which provision is now desired. An agreement has been entered into with Chester to provide in the asylum, when enlarged, accommodation for not more than 80 lunatics from that city, at a minimum rate of £1200 a year, exclusive of maintenance charges. There was no opposition to the scheme, and it is hoped that the application will be favourably received.

Warrington Infirmary.

Sir Gilbert Greenall has given £1000 towards the liquidation of the debt of £4000 on the Warrington Infirmary and Dispensary. The debt had been brought about by the additional cost of maintenance incurred during the last few years. Since the recent extension of the hospital the accommodation provided had been more than doubled. The infirmary authorities are making an effort to wipe out the deficit by a million pennies fund.

Jan. 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Selection of Liberal Candidate for the Universities of Edinburgh and St. Andrews.

Sir A. R. Simpson, M.D., Emeritus Professor of Midwifery in the University of Edinburgh, has been adopted as the Liberal candidate for the representation of the Universities of Edinburgh and St. Andrews in Parliament in opposition to Sir Robert Finlay, the Unionist candidate, late Lord Rector of the University and Attorney-General, and also a qualified physician. When it became known that Sir A. R. Simpson had consented to contest the seat it would be idle to overlook the fact that many of his friends regretted the step he had taken, as he has been so long identified with other departments of life and so little with political life.

The Edinburgh Royal Infirmary.

The managers of the Edinburgh Royal Infirmary have completed the arrangements for an additional charge on the surgical side of the hospital. Mr. David Wallace has been appointed to the new charge, and he is succeeded in the surgical wards reserved for the medical education of women by Mr. Alexander Miles, the senior assistant surgeon to the infirmary.

The Annual Report of the University of Edinburgh for 1909.

During the past year the total number of matriculated students (including 594 women) was 3322. Of these, 1241 (including 537 women) were enrolled in the Faculty of Arts, 343 (including 18 women) in the Faculty of Science, 48 in the Faculty of Divinity, 282 (including 1 woman) in the Faculty of Law, 1386 (including 27 women) in the Faculty of Medicine, and 22 (including 11 women) in the Faculty of Music. Of the students of medicine, 591, or nearly 43 per cent., belonged to Scotland; 282, or over 20 per cent., were from England and Wales; 123 from Ireland; 83 from India; 274, or nearly 20 per cent., from British colonies; and 33 from foreign countries. These figures show that the proportion of non-Scottish students of medicine is well maintained—indeed, is higher than it has been for 10 years. The number of women attending extra-academical lectures, with a view to graduation in medicine in the University, was 65. The medical degrees conferred during 1909 were: Bachelor of Medicine and Master of Surgery (M.B., C.M.), 1; Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), 180; Doctor of Medicine (M.D.), 70; and Master of Surgery (Ch.M.), 2. The Diploma in Tropical Medicine and Hygiene was conferred on 8 candidates. The annual value of the University fellowships, scholarships, bursaries, and prizes in the Faculty of Medicine now amounts to about £3830. The past year, like its predecessor, has brought with it three changes in the professoriate. An illness which had compelled Professor D. J. Cunningham to ask for leave of absence in the winter terminated fatally in June. During his brief tenure of the chair of Anatomy Professor Cunningham, alike by his gifts as a teacher, his scientific work, and his capacity and zeal in the task of University administration, rendered services of the highest value, and steps are now being taken to set up a permanent memorial to his name. The vacancy created in the chair of Anatomy was filled by the appointment of Dr. Arthur Robinson, Professor of Anatomy in the University of Birmingham. Another loss occurred in the ranks of the Faculty of Medicine in the autumn, when Professor John Chiene resigned the chair of Surgery. For 27 years he had well maintained the high traditions of his office by his eminent work as a surgeon and his success and popularity as a teacher. He has been succeeded by Professor Henry Alexis Thomson. Dr. D. C. A. McAllum is successor to Dr. T. D. Luke as University Demonstrator on Practical Anæsthetics. Professor Harvey Littlejohn has been appointed Dean of the Faculty of Medicine, in succession to the late Professor Cunningham. As in former years, the University has to make grateful acknowledgment of numerous benefactions. The Carnegie Trust for the Universities of Scotland continue to make generous provision for some of the needs of the University, especially in regard to the endowment of lectureships, the purchase of books for the library, buildings, permanent equipment, and apparatus; while of the large sum devoted by the Trust to the payment of class fees about one-third comes to Edinburgh students. The late Dr. Thomas M'Kie, advocate, has made a bequest to the University Court for the purpose of developing and encouraging scientific, medical, and surgical research in the University. Among other benefactions may be noted a bequest by the late Professor Cunningham of all his medical and scientific books to the University to form the nucleus of a library for the anatomical department; a gift by Emeritus Professor Chiene of his surgical museum, diagrams, and laboratory apparatus; and a gift by the widow of the late John Anderson, M.D., LL.D., of £100 for the purchase of books for the department of anatomy. The subscribers to a memorial to the late Professor Annandale have instituted an annual gold medal, to be known as the "Annandale Gold Medal in Clinical Surgery." The Crichton Research Scholarship Fund has increased so as to permit of the institution of an additional scholarship of £100 a year; and there are now five of these scholarships in the Faculty of Medicine. Additions to the University library for 1909 numbered 5121. Accommodation was again given in September by the University authorities for a scheme of post-graduate courses in medicine, held under the joint auspices of the University and the Royal Colleges of Physicians and Surgeons.

The Carnegie Trust.

The executive committee of the Carnegie Trust confines its eighth annual report to a brief summary of the year's operations, a comprehensive review of the work of the Trust since its foundation having been made in the report for 1908. The reports of the independent authorities who have examined the records of the year's work under the research scheme of the Trust give evidence that its past success is being well maintained. As formerly, the committee desire to acknowledge the assistance rendered by the universities in providing the scheme with so many able workers and in affording accommodation and supervision in the various laboratories. In the laboratory of the Royal College of Physicians, which in the department of medicine has taken a prominent share in the Trust's scheme of research, the record of work for the past year is equally encouraging. The expenditure for 1908-09 upon the scheme of fellowships, scholarships, and grants, and upon the laboratory was respectively £6861 and £1992, towards the latter of which the Royal College of Physicians and the Royal College of Surgeons together contributed £1025. In regard to the second quinquennial scheme of distribution, which opened with the year under review, and which was fully described in the last report, the committee state that besides making contributions of £65,250 to buildings and permanent equipment and £20,500 to libraries, it will at the close of the period of five years have increased the resources of teaching in the four university centres by permanent endowments amounting to £87,500, while it will at the same time have afforded during the five years an annual income of about £4150 to meet ordinary expenditure. Consideration was also offered to certain additional claims for temporary assistance in establishing fee funds where it had not yet been possible to institute the fee fund scheme of the last Universities' Commission. Applications under this head have already been dealt with in connexion with University College, Dundee, and the clinical department of the Glasgow Medical School, and it is possible that one or two further demands of a similar kind may have to be considered. Statistics of the payment of class fees for the academic year 1908-09 give the total number of beneficiaries as 3553, the total number of fees paid as £47,076 18*s.*, and the average amount in fees paid per beneficiary as about £13 5*s.*

The Royal Victoria Hospitol for Consumption, Edinburgh, and its Ancillary Establishments.

At the recent annual meeting of the Royal Victoria Hospital for Consumption Sir Alexander Christison, president of the committee, in submitting the annual report made an interesting speech regarding the development of the various branches of the hospital's activity and dwelt on the completion of the scheme of antituberculosis operations which was begun in 1887 through the establishment this year of the working colony. He showed that the purpose of the Royal Victoria Hospital for Consumption was much larger than the cure of the 100 patients who were daily under treatment at the hospital proper. The institution in its several branches had a wide outlook on tuberculosis from the preventive as well as the curative point of view. It aimed at tackling every aspect of the problem with a view to the eradication of the disease. Towards this end a combination of agencies was necessary. The creation of these had been the endeavour of those in charge ever since the foundation of the Victoria Dispensary for Consumption 22 years ago. The fundamental principle of the dispensary was that, if tuberculosis was to be treated effectively, they must not be content to treat the consumptive poor who presented themselves with more or less advanced disease at the out-patient departments of hospitals. Cases of tuberculosis must be sought for in their homes. The consumptive patient must be followed to his dwelling. They must inspect the dwelling and as far as possible inspect all members of the household so as to detect the disease at the earliest stage. It was constantly found that several members of a household were affected simultaneously. By the "march past," which had for long been a feature of the dispensary, such contact cases were brought under the surveillance of the institution. The dispensary dealt with every type of tuberculous patient among the poorer classes and with every inquiry regarding the treatment and prevention of consumption. It sifted and grouped the cases and recommended the suitable line of treatment. Some patients continued as visiting patients at the dispensary. Others, too ill to come to the dispensary, were attended at their own homes by the doctor and nurse and by the Samaritan Committee. Early cases were passed to the sanatorium—the Royal Victoria Hospital—with a view to cure. Advanced and dying cases were recommended to the medical officer of health for admission to the City Hospital (62 beds) or, in the case of paupers, to the Parish Hospital, where special provision existed. During the year, at the laboratory of the dispensary, the diagnosis of tuberculosis had been confirmed by bacteriological examination in 418 cases. All cases presenting themselves at the dispensary were notified to the medical officer of health of Edinburgh or of Leith, as the case might be. The dispensary had proved a most valuable instrument in relation to notification. In the Royal Victoria Hospital itself they had now approximately 100 beds, and to this figure fell to be added a considerable number of visitant patients, who spent the entire day under the régime of the hospital, returning home for the night. The system of graduated labour continued to prove of first importance in the treatment of patients. The grounds of the hospital had long been largely maintained, and extensions from time to time had been made, by the activities of the patients themselves. Coloured badges were given to the patients according as they passed from one grade of work to a higher grade. The effect of this had been to add interest to the work and promote a healthy emulation to reach the highest grade. The degree of work was carefully regulated by physiological considerations. In the great majority of cases an arrest of the disease had been attained. Most gratifying evidence of the permanence of cure was forthcoming in letters frequently received from patients in the enjoyment of good health for years after their discharge. At the last annual meeting a special plea on behalf of a special working colony had been submitted by the Right Hon. Lord Dunedin, who pointed out that the colony was not a new departure but an essential part of the original plan. The purpose of the colony was to afford occupation for a selected number of patients to whom return to their ordinary avocations would mean relapse and disaster. "Colonists" would be selected from among the patients who had passed to the higher grades of graduated work—i.e., patients able to work the greater part of a day, but return to whose previous occupation would almost certainly mean relapse. He was happy to announce that in response to the appeal over £6000 had been received within a few months. The committee had carefully considered numerous sites and had selected the estate of Springfield, adjoining the classic Hawthornden. This had been acquired and was in course of adaptation. The property contained 50 acres and an extensive dwelling house, which would require only slight structural alterations. Lady Dunedin seconded the adoption of the report, which was carried unanimously

Dundee Infirmary Directors and the Sidlaw Sanatorium.

The directors of Dundee Royal Infirmary met on Dec. 27th last and again discussed the offer of £10,000 to them by Mr. J. K. Caird for the taking over and carrying on of the Sidlaw Sanatorium. At the outset a conference with the medical staff took place. All the latter laid emphasis on the fact that such an institution would be of great service to the community. The directors subsequently discussed the whole subject from all points of view. It was thought that any arrangement that might be come to on the basis of Mr. Caird's letter would only be temporary in view of the fact that the gift of £1000 per annum would lapse at the end of 10 years, and that, therefore, the directors could neither ask complete control of the sanatorium endowments nor request that the buildings should be handed over to them, but simply the management of it for a period. To meet the views of the sanatorium directors it was agreed that Mr. Caird might be asked to amend his conditions, so that 20 beds would be available for children and the other 20 allocated to adults suffering from consumption, 10 for males and 10 for females. It was estimated that the cost of running the institution on these lines would be about £2200 per annum. The Caird gift and the free proceeds from the investments held by the sanatorium directors would yield between £1500 and £1600 each year, while a grant of £400 or £500 from the public health authorities might be looked for. It was decided that this suggestion should be submitted to the executive committee of the sanatorium, and that should the scheme find favour with the committee, it be then submitted to Mr. Caird for his consideration.

Treatment of Phthisis in Aberdeen.

From Dr. Matthew Hay's annual report it is gratifying to find that the mortality from tuberculous disease in the city of Aberdeen continues to decline. Thirty to forty years ago the death-rate from pulmonary phthisis at all ages was 282 per 100,000 of the population, and from other forms of tuberculous disease 121, or in all 403. Last year these figures were respectively 103 and 57, a total of 160. In none of the larger towns in Scotland was the mortality rate from these diseases so low as in Aberdeen.

Jan. 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Sanitary Improvements: Loans for Main Drainage and Working Men's Lodging-houses.

AT the monthly meeting of the Dublin municipal council which was held on Jan. 3rd the town clerk read a letter from the assistant secretary of the Local Government Board which conveyed the sanction of the latter body to the raising of one loan of £100,000 for the purpose of completing the main drainage of the city and of the added areas, and another of £17,250 to be employed in the erection of working-class lodging-houses at Inchicore. A resolution was moved that the letter should be forwarded to the improvements committee, and the speaker took the opportunity of thanking Sir Henry Robinson for his kind reception of the deputation which had waited on him in reference to the question, so that the outcome was a complete agreement with the proposition that had been submitted by the corporation. The expenditure of these loans is, it need hardly be pointed out to medical readers, of the most vital importance to the health and hygiene of the city, and also to its general appearance and æsthetic aspect. The Liffey, which for more than a generation has been made to function as the main channel of the water carriage of the Dublin sewerage, has necessarily during that period also presented an olfactory feature so objectionable as to make many sigh for the days of the well and canal water-supply, and the concomitant dry privy and ash-pit. The proposed erection of a large number of working-class lodging-houses in the suburb of Inchicore also represents an immense and most important stride in the advancement of the sanitary conditions of the Dublin slums. The worst features of the deadly areas are those produced by the filthy and fatal conditions of their tenement rooms, and the removal of so large a section of such a nursery of physical and moral evil as is represented by the expenditure of £17,250 should most assuredly have the effect of lowering the mortality and raising the morality of Dublin life.

Christmas at Dr. Steevens' Hospital.

On Dec. 27th an excellent concert was given in Dr. Steevens' Hospital for the entertainment of the patients and their friends and visitors. Thanks to the energy of the matron, Miss Kelly, an exceptionally strong and varied programme was provided. In addition to the professional and amateur performances which occupied the body of the programme Romberg's "Toy Symphony" was contributed by the resident pupils of the institution, under the leadership of Mr. H. Henn. There happened to be present at the entertainment some distinguished medical and surgical visitors from the United States, who appeared to be far better acquainted with the history of the best work done in this institution than are many of our Dublin men. They displayed the keenest interest on being shown the ward which was temporarily occupied by the patient whose "sprained wrist," with permanent deformity, gave Abraham Colles, then surgeon to the institution, the first suspicion of the frequent occurrence of the fracture which has since borne his name; also the favourite ward of the retiring and studious Dr. Freke, whose speculations on the "Origin of Species" anticipated the Darwinian hypothesis by a decade. The members of the visiting staff of the hospital also pointed out to the interested visitors the position of the anatomical theatre and dissecting-room of former days, when the institution included a complete medical and surgical school; and the curious basement labyrinth of apartments which formerly lodged many of the country pupils. But there was no feature of the institution which was examined with so much interest as the resident pupil's bedroom, from the shelter of whose couch the future author of "Charles O'Malley" gave his seven o'clock winter morning lecture to an audience of shivering students who had been informed before admission that their indefatigable master, "Jimmy" Cusack, was prevented by a sudden attack of gout from visiting the surgical wards. The fall of the school threw the hospital somewhat out of touch with the students, for whose attendance the position was too distant, but that difficulty has been in great measure overcome by the energy of the present staff. Christmas was worthily celebrated at others of the Dublin hospitals, and nowhere, I am told, more merrily than at the Children's Hospital in Temple-street.

The Pollution of Belfast Lough.

The Royal Commission on Sewage Disposal has issued a brief statement as to the investigations it is making in regard to the growth of ulva latissima and other weeds in Belfast Lough. The Commissioners are satisfied that a serious nuisance is experienced at times in the case of this lough. In the cases in which nuisance is caused by these growths the water is invariably polluted, but the amount of weed bears no direct proportion to the amount of pollution. Moreover, the Commissioners say that there are many polluted estuaries in which there is no growth of ulva latissima, at any rate, no growth sufficient to cause nuisance. Before remedies are proposed, in any case, it is clearly of importance that the exact conditions which favour the abnormal growth of the weed should as far as possible be ascertained, all the more as the general knowledge of the subject is exceedingly limited; hence the Commission is making an exact study of the conditions in Belfast Lough. It has appointed Professor E. A. Letts to assist in this work, and Mr. Cotton of the Royal Botanical Gardens, Kew, is giving valuable help on the botanical side of the question. The Commissioners have also asked the various parties who are interested in the matter to furnish them with any exact scientific data which they may possess. They have found from their own examination of the sloblands that mussel-beds form an excellent anchorage for the weed, and it is possible, therefore, that the removal of these beds might have the effect of checking the development of the weed, and thus of diminishing the nuisance. For this reason it seems to the Commission that the removal of the mussel-beds from a fairly large area of the sloblands is an experiment which should be carried out. In the near future parties who are interested in the matter will be afforded an opportunity of giving evidence.

Obituary: Michael Higgins, L.R.C.P. & S. Edin.

Mr. Michael Higgins died suddenly at his residence in Dungiven, county Derry, on Dec. 28th, 1909, from cardiac disease, a condition from which he had been ailing for a considerable time. Educated at Queen's College, Belfast, he became a Licentiate of the Royal College of Physicians and Surgeons of Edinburgh in 1896. About 13 years ago he was appointed medical officer of Dungiven Dispensary district, where he has practised ever since, and where with rich and poor he was a great favourite. Mr. Higgins, who was a native of South Derry, was only 42 years of age, and was married to a daughter of the late Dr. T. M. Bryson of Limavady, who with four young children survives him.

Jan. 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hot-air Treatment of Raynaud's Disease.

IN the treatment of Raynaud's disease M. Bensaude has found the use of hot air decidedly advantageous, and at a meeting of the Société Médicale des Hôpitaux held on Dec. 17th, 1909, he showed three patients as illustrative examples. One of them suffered from attacks of local syncope and another from trophic lesions of the skin of the fingers and small patches of gangrene of the pulp, whilst the third was the subject of cyanosis with gangrene of the deep parts of the left little finger and the right forefinger. A photograph of the characteristic appearances seen in the last-mentioned case was also on view. A fourth patient suffered from extreme cyanosis of both feet with phlyctenulæ and superficial necrosis of the skin of the toes. The hot-air treatment was beneficial in these different clinical forms of the disease, stopping the attacks of local syncope, diminishing the cyanosis or causing its complete disappearance, calming the pain, and averting gangrene, which seemed to be imminent. Of course, it was not a specific against gangrene, but it facilitated the separation of the necrosed portion, and the resulting cicatrix was sound without rigidity. Unfortunately, the treatment was slow in its action and required much perseverance on the part of the patient. The fourth of the above-mentioned cases had made 75 attendances, each of which lasted from two to three hours. M. Bensaude considered that when the disease had existed in a severe form the treatment ought to be continued at intervals during winter for the purpose of maintaining the improvement which had been effected. Notwithstanding these inconveniences, he considered hot air to be the best of the remedial measures which had as yet been suggested.

Treatment of Hydatid Disease of the Liver.

M. Routier has operated on 41 patients suffering from hydatid cysts of the liver; in seven of these cases the cysts were multiple, the ultimate results in this group being two deaths and five recoveries. An account of the cases was given by him at a meeting of the Surgical Society held on Dec. 15th, 1909. The cysts were treated either by free incision followed by marsupialisation or by reduction without drainage after formolisation. This last method was certainly the best, but unfortunately it was not applicable to all cases. M. Auvray gave details of 53 cases in which the treatment consisted of complete removal of the hydatid cyst; in the result there were 49 recoveries and 4 deaths—i.e., a mortality of about 7·5 per cent. He considered that extirpation was seldom necessary.

Errors in Radiography.

In showing a series of radiographs to the Society of Legal Medicine M. Ménard and M. Collat said that every radiograph ought to be accompanied by a memorandum indicating (1) the relative position of the X ray tube, the photographic plate, and the part under examination; and (2) the distance of the tube from the plate and from the anatomical reference point of the part. An oblique position of the plate might either exaggerate a lesion such as the separation of the ends of the bones in a fracture, or in the absence of any lesion it might give rise to a delusive appearance of ankylosis or crushing of the bones or dislocation. It was also necessary to mention other circumstances such as the more or less penetrating qualities of the rays actually employed and the kind of paper selected for the positive print. It depended on the quality of the rays and also on the paper whether certain details would or would not appear in the prints. Retouching was undesirable and could not pass unobserved in enlarged pictures which showed both the grain of the paper and that of the gelatine film. As physical considerations were incapable of determining whether a radiograph was exact or not, it was necessary that the operator should possess anatomical and clinical knowledge, and that he should understand how the points of reference in the part under examination ought to be selected.

Treatment of Telangiectasis following Radiotherapy.

At a recent meeting of the Radiological Society M. Belot described several successful methods of dealing with telangiectasis. When the lesion was isolated and consisted of a central stem with many branches he used negative electrolysis of the origin of the stem and often of the first part of the branches. When the lines of telangiectasis were very fine and confluent electrolysis was difficult, he had devised a procedure which he had called *scarifications ignées* and in which a small galvano-cautery knife was used for scarifying perpendicularly to the general direction of the lesion in such a way as to cut the vessels without going beyond them. An excellent result without any appearance of a scar was seen in the case of a female who had been treated for lupus of the face and was shown at the meeting. M. Belot also described some other methods of linear scarification followed by the application of electric currents of high frequency.

Presentation to Professor Bar.

On Dec. 21st, 1909, in the amphitheatre of the Clinique Tarnier the pupils of Professor Bar presented him with a medal in honour of his admission to the Academy of Medicine. A great number of gentlemen who had formerly held appointments as his *internes* and *externes* travelled from country districts in order to express their congratulations personally. Speeches were delivered by M. Brindeau, M. Louis Rénon, M. Bonnaire, and M. Tissier, and Professor Bar returned thanks in an impressive reply.

Radium in the Treatment of Uterine Cancer.

M. Chéron and M. Roubens-Duval have treated several cases of uterine cancer by the ultra-penetrating radiation of radium, and they presented a communication on the subject at a meeting of the Obstetrical Society of Paris held on Dec. 15th, 1909. In three of the cases there was primary cancer of the neck of the uterus and in two there was secondary cancer of the vagina. The result was a cessation of the hæmorrhage, sanious discharge, and pain. At the same time the ulcerated surfaces assumed a healthy appearance, the concomitant inflammatory symptoms subsided, and the tumour even became undiscoverable on clinical examination, its site being occupied by pliant cicatrices. M. Chéron and M. Roubens-Duval, however, did not claim that there was recovery in the absolute sense of the word. One patient received treatment on eight occasions at intervals of three weeks or a month.

Jan. 3rd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Prophylactic Measures against Pellagra.

CERTAIN parts of the Austrian Empire, especially those in the south and east, suffer greatly from pellagra, a disease which evidently has poverty as one of the factors in its causation. In the eastern districts efforts for the prevention of pellagra have been made continuously for some years, and the practical experience gained there is now being utilised for the purposes of a similar campaign in the south—namely, in the county of Görz, with a population of about 310,000. The number of cases of pellagra known amongst the inhabitants of the affected district is at present only 3000 approximately, but no doubt closer investigation may reveal a much worse state of affairs. A "pellagra committee" has been formed in the affected districts, and arrangements have been made for carrying out the following preventive measures, the necessary expenses being defrayed jointly by the county council and the State. Depôts will be established where the poorer classes may obtain wholesome and properly cooked food at a nominal cost. A number of ovens for preparing maize will be at the disposal of the pellagra committee; storehouses for maize will be erected where good maize will be both sold and given in exchange for spoiled; and seven bakehouses for making bread will be provided. A special hospital, or "pellagrosarium," and if necessary an emergency hospital, will also be built out of the fund. The population will be instructed, by the distribution of leaflets, to pay attention to the initial symptoms of the disease and an explanation of the cause and course of the cases is added. Statistical data will also be collected as regards the spread of disease. In order to provide work for destitute persons various undertakings of public utility will be begun at once, including an extensive system of draining agricultural land. The want of such drainage has been one of the chief causes why large tracts of land planted with maize were every year under water for weeks and weeks so that the grain did not ripen properly.

Suture of a Penetrating Wound of the Heart.

At a recent meeting of the Gesellschaft der Aerzte Professor Schnitzler showed a man who had been under his care, having been admitted to a hospital almost moribund from the effects of a self-inflicted stab. At the time of admission blood was oozing from the wound, which was close to the left mammilla and one inch long. The pulse in the radial artery could not be felt. As quickly as possible the cartilages of the fourth and fifth rib were resected, whereupon coagulated blood was found in the pleural cavity and in the pericardial sac; the pericardium was punctured and in the wall of the right ventricle there was a wound penetrating its entire thickness and half an inch long. The wound in the heart was brought together by silk sutures, the application of which was very difficult owing to the violent action of the heart when it was touched. The pericardium was closed and a small drain was inserted into the left pleural cavity. In the later stages of the case hæmatopneumothorax, complicated by croupous pneumonia of the right lung, threatened the life of the patient for a considerable time; repeated punctures of the pleural cavity and, finally, another resection of two ribs were necessary for the establishment of efficient drainage. In Professor Schnitzler's wards there have been within the last two years two other cases of penetrating wounds of the heart, both of which proved fatal; the favourable termination of this last case was the more gratifying, as the patient appeared to be in a desperate condition at the time of admission.

The Treatment of Exophthalmic Goitre.

A demonstration, by Dr. Holzknecht, of cases of Graves' disease (here called Basedow's disease) before and after exposure to the X rays, has given rise to a very interesting and protracted discussion of the whole subject. In answer to the question, Shall exophthalmic goitre with its concomitant nervous symptoms be treated internally or surgically?—the experiences of numerous representatives of all branches of medical science were set forth before the Gesellschaft der Aerzte, and so much importance was attached to the subject that five special days were devoted to the discussion. Nearly all the surgeons of reputation stated that they would in future abstain from recommending X ray treatment in cases where operation was possible, for in all patients who had been exposed to the rays subsequent operation had proved very difficult owing to the formation of dense adhesions and an enormous increase of blood-vessels. On the other hand, the results obtained by early operation were very encouraging. Radiologists, such as Dr. Kienböck and Dr. Schwarz, asserted that they have seen much benefit accrue from a cautious application of X rays. Physicians, on the other hand, claimed that almost every case of exophthalmic goitre might be successfully treated by internal medication, rest and building up of the system after a nervous breakdown being of paramount importance. Some interesting examples of acute Basedow's disease of a very severe form were reported by Professor Winternitz. One of the patients seen by him after having for three days given himself up to sexual excesses and constant smoking, developed the typical symptoms of exophthalmos, palpitation of the heart, tachycardia, profuse sweating, diarrhœa, enlargement of the thyroid gland, and general debility. In another case the patient was an officer who had been taken prisoner in guerilla warfare and was about to be hanged; he was rescued almost at the last moment and immediately afterwards showed the same symptoms. Professor Winternitz added that hydrotherapy had proved very efficient in his hands in some cases. On the whole the opinions expressed were not very favourable to the treatment of this disease by X rays only; internal treatment, supplemented if necessary by surgical intervention, seemed to be the most usual practice in Vienna.

Jan. 3rd.

CANADA.

(FROM OUR OWN CORRESPONDENTS.)

Dominion Registration.

THE medical profession throughout Canada are practically united now in their desire that at the present session of the Dominion Parliament amendments to the Canada Medical Act of 1902 should be passed which will provide for a Dominion Medical Council and thus bring about medical reciprocity throughout the provinces of Canada. Dr. T. G. Roddick called the Special Committee of the Canadian Medical Association on Dominion Registration together in Montreal on Nov. 16th, and along with that committee there met representatives from several of the medical councils of the provinces of Canada. All the provinces were represented except the two new provinces of Alberta and Saskatchewan, but it is well known that these as well favour the principle of Dominion registration. At this meeting several amendments were suggested to the Canada Medical Act, but the general principle of the Act was agreed to as a working basis. The particular amendment is that embodied in the resolution passed at the recent annual meeting of the Canadian Medical Association in Winnipeg, which called for the Act to be enforced whenever five or more provinces agreed to the provisions of it and had the necessary legislation passed through their respective legislatures to ratify it. The following provinces have already legislation in force to take advantage of the Roddick Act, as it is commonly called in Canada: Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan, and Alberta. The draft measure for presentation to the Federal Parliament is being prepared, and it is fully expected that Dominion registration, promoted by the Canadian Medical Association almost since its inception in 1867, will within the next 12 months be an accomplished fact.

The Public Press of Canada and Secret Nostrums.

When an attempt was made to place on the Statute-books of Ontario a Bill to regulate the sale of nostrums most of the Toronto press strongly protested against the passage of such a Bill, on the ground that vested interests were attacked, and pointed to the duty of safeguarding the skill and labour that had been expended on the preparation of these nostrums. In Nova Scotia but a short time ago an effort was made to secure an Act to control the sale of certain drugs in the shape of nostrums. In this instance, again, the newspapers were up in arms against the proposal, and spoke loudly concerning the liberty of the citizens. In fact, the attitude of newspapers generally in Canada is antagonistic to the passage of laws calculated to injure the sale of proprietary medicines or of secret remedies, the proprietors of which are among their most lavish advertisers. The advertising of secret remedies is carried on more freely in the Canadian journals even than in those of Great Britain, for in the most influential of them it is a daily experience to see an advertisement setting forth in flowery pseudo-scientific language the manifold advantages to be derived from the use of (say) a kidney remedy, wedged in between literary articles on really important subjects.

Typhoid Fever in Montreal.

The sanitary conditions of Montreal are not satisfactory. The sewage of the city is disposed of in a manner which is not up to the standard of the times, and the water-supply has been impeached in Parliament. Dr. Black, M.P., further has given it as his opinion that passengers who travelled on the Intercolonial Railway, where the use of spirits is not allowed, "drank disease and death" in the water supplied to the railway cars at Montreal. Typhoid fever is certainly prevalent in Montreal, and although its origin has not been directly traced infected water is, of course, the suspected medium. The public considers the authorities supine, and there is talk of the formation of a committee of citizens.

The First Minister of Health for a Canadian Province.

Saskatchewan is one of the new provinces of Canada, and like all the provinces of the west it is progressive. In medical and health matters it is taking a forward step which time and again older provinces have considered but rejected as inopportune. The legislature is at present in session, and the new Public Health Bill has been explained to the legislature by the Attorney-General. The Bill provides for the creation of a Bureau of Health and fixes the machinery for the more adequate supervision of the health of the province. The principal feature, however, is that there will be a Minister at the head of the bureau and a deputy, who shall be known as the Commissioner of Health, equipped with a staff sufficient to handle the work of the new department. A health council, consisting of four medical practitioners and the commissioner, will advise the department, meeting at stated periods for that purpose.

The Cost of Toronto Patients in City Hospitals.

The medical officer of health of Toronto, Dr. Charles Sheard, has prepared for the Toronto board of health an elaborate report on the cost of maintaining patients in the various hospitals of the city. He estimates that the total expenditure for the present year will be in the neighbourhood of $157,000. The following are the figures for the previous years: 1900, $31,416.80; 1901, $33,039.60; 1902, $34,382.30; 1903, $31,556.80; 1904, $35,281.80; 1905, $47,169.60; 1906, $49,648.50; 1907, $50,222.50; and 1908, $84,149.40. Prior to September, 1904, the annual rate in the hospitals was 40 cents per day; upon that date it was raised to 50 cents, and again raised to 70 cents per patient per day. Each hospital in Toronto for the ten months of the present year up to the end of Oct. 31st has received from the city of Toronto the following amounts: General, $31,716.28; St. Michael's, $18,421.60; Grace, $5124; Western, $7009.50; Convalescent Home, $593.50; St. John's, $607.60; Tuberculosis Sanatorium at Gravenhurst, $6587.70; at Weston, $14,622.06; Home for Incurables, $8922.05; and the Children's, $18,000. When the new Toronto General Hospital is erected in the centre of the city the old building will possibly be used for a hospital for the east part of the city.

Canadian Pathologist Appointed at Pittsburg.

Dr. Oscar Klotz, for seven years assistant to Professor J. G. Adami at McGill University, Montreal, has been appointed pathologist to Pittsburg University in the United States. He will assume his new duties about the New Year. Dr. Klotz first came to McGill as Governor's Fellow in Pathology. A year after he took up work in connexion with the Rockefeller Institute of Medical Research. In 1904 Dr. Klotz spent one year in research work in the pathological laboratories on the Continent and especially in Germany, and again in 1908 six months in the same work. In Montreal, in addition to being assistant to Professor Adami, he was assistant pathologist at the Royal Victoria Hospital and the Alexandra Hospital. He has published a large number of important scientific papers, and his investigations at McGill have been principally in experimental work regarding arteriosclerosis. The position which Dr. Klotz is accepting carries with it the supervision of the pathological departments in the Pittsburg College hospitals of which there are eight, where he expects to follow up the lines of work he has been carrying on at McGill University.

Dec. 24th, 1909.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

PLAGUE returns for the week ending Nov. 20th show a considerable increase of the disease in the United Provinces and Bombay Presidency, which report 1344 and 913 deaths respectively, the total for all India being 4711. The deaths in other provinces were: Madras, 70; Bengal, 199; Burma, 15; Punjab, 758; and the Central Provinces, 686. The plague figures for the United Provinces have exhibited a marked tendency to increase during the last few weeks. Their weekly total for plague deaths at the end of October was 634; the latest report gives a total of 1344. It is, however, only in three districts that the plague mortality is at all severe at present, Ballia district with 724 deaths accounting for considerably more than half the deaths. The other two districts are Gorakhpur, with 176 deaths, and Azamgarh, with 133.

Vaccination in Bombay.

One of the most notable changes in the control of vaccination in the Presidency during last year was the transference of powers in the town of Bombay to the municipality. Otherwise the history of the year seems to have been uneventful, but marked by steady progress. There were during the year 672,252 persons who were primarily vaccinated and 52,362 who were revaccinated, as against 595,883 and 40,954 respectively in the previous year, both of which must be considered very satisfactory increases. It is noticeable that the increase was general throughout the Presidency, the only two exceptions to the rule being the Southern and Sind registration districts, where decreases of a little over 1000 and 2000 respectively were recorded. 75 per cent. of the infants available, after deducting from the total number of those who died under one year, were vaccinated. That the work is well done is shown by the fact that 89·15 per cent. of the primary vaccinations were successful, and 96·02 if second attempts are included, and the figures could probably be increased were it possible to trace details of a large number of children who are never brought back for inspection. The number of primary vaccinations is almost equally divided between the sexes, but females seem to object to a second vaccination, and the number of females on whom secondary vaccination was performed was very small. The increasing number of vaccinations is satisfactory, and the effect is easily traced in the decrease in the ravages of small-pox in recent years.

The Walker Hospital, Simla.

It has been decided that the Walker Hospital, Simla, is to be closed from Dec. 1st to March 15th, as there are no funds available for the winter months. The position was referred to some time ago (THE LANCET, June 26th, 1909, p. 1868), and it was then pointed out that the very poor response made for annual subscriptions in Simla might compel the committee to close the hospital for some months. Next year the appeal will be repeated early in the season, the annual payment for a subscriber being Rs.10, or Rs.16 for a family. In return for this subscribers will be entitled to first-class accommodation in the wards at Rs.8 instead of Rs.10 per diem. During the winter the committee are addressing units in the northern army in India, offering similar privileges for commissioned officers and their families in return for the following annual subscriptions: British regiments, Rs.100; Indian regiments, Rs 50; and batteries, Rs.30 each. It is to be hoped that a good response will be made to both these appeals, so as to secure the financial stability of the hospital and thus prevent the interruption and disturbance consequent on these temporary closures.

Wellington Convalescent Depôt.

It is rumoured that the military authorities are again contemplating carrying out the original idea of restricting the Wellington Cantonment to convalescents only, for whom it was formed, and barracks erected. These convalescents have yearly been increasing in numbers, and now, with railway communication, are calculated to be vastly increased in numbers, so extra buildings will have to be erected, which will require time. The best barracks, where the troops are stationed during the season, are not very architectural in character and would not be a great loss if demolished.

Nov. 27th, 1909.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Charitable Institutions.

THE annual report of the Inspector of Charities in Victoria sets forth the number of patients relieved last year by subsidised charities as 148,188, of which 111,035 were out-patients. The expenditure was £307,832 and the receipts £285,656. The principal sources of revenue were: State grants, £94,915; municipal grants, £12,227; private and other contributions, £73,312; bequests, £28,036; interest, £12,065; patients' contributions, £26,361; and inmates' labour, £16,152. The inspector protests against typhoid patients who are able to pay fees being treated in public hospitals. The Board of Public Health for some inscrutable reason has hitherto objected to private hospitals treating typhoid fever cases. The report advocates the establishment of intermediary hospitals at which all charges should be fixed and the "profits" devoted to the support of "charities."

Licensing of Midwives.

A Bill is being prepared for presentation to the Victorian Legislature providing for the registration and licence of midwives. The text has not been published, but it is understood to place the matter in the jurisdiction of the Board of Public Health.

Melbourne Hospital.

The proposal put forward by the staff of the Melbourne Hospital to do away with the present system of election by vote of subscribers is embodied in the following rules: "53. The physicians and surgeons and the medical officers in charge of special departments shall be appointed by the committee after report from the advisory board. 54. The advisory board shall consist of ten members, four being chosen by the committee, two by the medical staff of the hospital, two by the Council of University of Melbourne, and two by the Faculty of Medicine of the University. The members of the advisory board shall be chosen annually and shall hold office till their successors be appointed. ...... The quorum of the advisory board shall be six." At a meeting of the committee on Nov. 16th last Rule 53 was left for further consideration and Rule 54 was amended to the effect that the committee should appoint six members and the University Council be not represented and that seven form a quorum.

Administration of Charities.

A conference will shortly be held in Melbourne to discuss the problem of charitable administration. Mr. W. A. Watt, the State treasurer, has announced that it is not his intention to bring any scheme before the conference, but merely to take an expression of opinion on certain points. The Ministry proposes to bring forward legislation next year and to obtain some suggestions towards that end from the conference. There was no intention to sink the individuality of the various charities, nor does the Government intend that the internal management shall be taken out of the hands of local committees. A general board of control would probably be proposed to define charitable management generally.

Lady Talbot Milk Institute, Melbourne.

The committee of management of this institute has addressed a letter to the daily papers asking for public subscriptions in aid of the funds. It claims that last year 300 children were supplied with pure milk, of whom only 8 died. This year it was intended to commence the distribution of milk two months earlier—viz., Nov. 1st—and better results were expected. The estimated expenditure for the coming summer will be at least £3000, and the funds in hand amounted to less than £1000. The appeal is signed by, among others, Dr. A. J. Wood, Dr. J. Dunbar Hooper, Dr. W. A. Wood, Dr. J. F. Agnew, Dr. Boyd, Dr. Zeymon, Dr. Hiller, Dr. W. P. Norris, Dr. B. B. Ham, President of the Board of Health, Professor Gilruth of the University Veterinary Department, and Dr. Cherry, Director of Agriculture. Up to the present the response has been extremely faint-hearted, and the financial burden will almost inevitably devolve upon the municipalities and the Government.

Radium in the Treatment of Leucoma.

At the November meeting of the Victorian Branch of the British Medical Association Dr. H. Laurence contributed a preliminary note on the application of radium in eye work. Three cases of corneal opacities had been referred to him by Dr. E. Ryan with a request to try what effect radium would have in clearing the cornea. One infant with opacity resulting from ophthalmia neonatorum was stated to have improved considerably, and the other two had cleared somewhat, but vision had not been improved.

Charge of Neglect.

In connexion with the death of a patient at the Sydney Hospital a charge of neglect was preferred by the friends of the deceased. The matter was ventilated before a police magistrate in the city coroner's court. It was stated that the casualty surgeon could find no serious symptoms on the man's admission to the observation ward, and that up to the time of his death about four hours later the patient was under the care of doctors or nurses, although not disturbed by undressing or washing. The magistrate exonerated the hospital authorities from blame, but said that the friend who had complained of neglect was quite right in asking for an inquiry.

Epidemic Poliomyelitis.

An epidemic of infantile paralysis is reported from Bullina, a country district of New South Wales. The residents requested the health authorities in Sydney to report on the matter. The investigation showed that about 25 cases had occurred in the neighbourhood, and the only factor common to a great number of patients was the use of a fruit shop.

Personal.

Dr. R. J. A. Berry, professor of anatomy in the Melbourne University, has been granted leave of absence for 12 months in order to visit the Old World. The anatomical school will probably be under the direction of Mr. G. A. Rennie, F.R.C.S. Eng., during his absence.—Dr. A. Breinl, who has been appointed director of the School of Tropical Medicine about to be inaugurated at Townsville, North Queensland, is expected to arrive early in the new year.

Dec. 1st, 1909.

Obituary.

CHARLES HOWELL COLLINS, M.R.C.S. ENG., L.S.A.

Mr. C. H. Collins, who died at his residence, Bredisholm, Chew Magna, Somerset, on Dec. 22nd, in his eighty-seventh year, studied medicine at the Bristol Medical School, and later proceeded to St. Bartholomew's Hospital, London. He qualified M.R.C.S. in 1846, having taken the L.S.A. in the previous year. Mr. Collins had practised for half a century in Chew Magna and the district. He was highly respected and extremely popular, and at one time there were few better known men in the Chew Valley. Mr. Collins was a good sportsman, a member and staunch supporter of the North-East Somerset Farmers Club. His son, Captain C. Collins, has for some time past represented the Commonwealth of Australia in London. The funeral took place in Chew Magna Churchyard on Dec. 27th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Brissaud, professor of medical pathology in Paris and member of the Academy of Medicine.—Dr. Gargam, formerly physician to the Rouen hospitals.—Dr. Otto Kölpin, *privat-docent* of psychiatry in the University of Bonn.—Dr. Lortet, formerly professor of natural history in the Lyons Faculty of Medicine.—Dr. Julius Nicolaysen of Christiania, aged 78 years. He was an honorary F.R.C.S., this distinction having been conferred upon him at the centenary in 1900. He was the first surgeon in Norway to perform ovariotomy. He had held successively the chairs of medicine and surgery in the Christiania University, being succeeded in the latter post by his son Dr. Johan Nicolaysen.—Dr. William B. Atkinson, formerly professor of children's diseases and of hygiene in the Medico-Chirurgical College, Philadelphia.

METROPOLITAN ASYLUMS BOARD: INSTRUCTION IN HOSPITAL ADMINISTRATION.—A three months' course of lectures and demonstrations in hospital administration will be given at the North-Western Hospital, Lawn-road, Hampstead, N.W., on Mondays, at 11 A.M., beginning Monday, Jan. 10th, 1910, and the South-Eastern Hospital, Avonley-road, New Cross-road, S.E., on Wednesdays, at 2 P.M., beginning Wednesday, Jan. 12th, 1910. The fee for the course is £3 3*s*. Cheques to be made payable to "The Metropolitan Asylums Board." Medical men desiring to attend a course of instruction are required before attending at the hospital to pay the above fee to the clerk to the Metropolitan Asylums Board, Embankment, E.C., giving their full name and address, and stating at the same time which hospital they wish to attend. Medical men may join the classes at the beginning of each month on the understanding that they complete the course during the following class (probably in May, 1910).

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees, Michaelmas term, 1909, the following candidates were successful:—

FIRST EXAMINATION (OCTOBER, 1909).

Part I., Chemistry.—K. Bellwood, Pembroke; W. K. Bigger, Emmanuel; H. A. Crouch, Downing; J. L. Davies, Emmanuel; H. P. Dawson, Trinity; C. D. Day, Downing; A. N. Drury, Caius; W. H. Edgar, Trinity; H. A. C. Goodwin, Jesus; L. M. Ingle, King's; L. H. James, Emmanuel; J. B. Leather and E. C. Malden, Caius; S. C. Miskin, Emmanuel; D. F. A. Neilson, Trinity; S. H. Rhodes, Caius; E. J. Selby, Downing; T. H. Somervell, Caius; P. Stocks, King's; C. R. A. Thacker and W. G. Thompson, Downing; T. T. B. Watson, Christ's; W. R. Wilson, Emmanuel; and F. B. Winfield, Downing.

Part II., Physics.—A. C. Ainsley, Caius; K. Bellwood, Pembroke; W. K. Bigger, Emmanuel; C. C. Brewis, Downing; A. A. Cockayne, Caius; H. A. Crouch, Downing; J. L. Davies, Emmanuel; H. P. Dawson, Trinity; A. N. Drury, Caius; L. M. Ingle, King's; S. H. M. Johns, Clare; J. B. Leather and E. C. Malden, Caius; E. W. Mason, John's; S. C. Miskin, Emmanuel; E. J. Selby, Downing; T. H. Somervell, Caius; G. E. Spicer, Trinity; P. Stocks, King's; C. R. A. Thacker, Downing; T. T. B. Watson, Christ's; E. Watson-Williams, Caius; W. R. Wilson, Emmanuel; and F. B. Winfield, Downing.

Part III., Elementary Biology.—H. S. Bartlett, Caius; W. K. Bigger, Emmanuel; H. R. Buttery, B.A., Christ's; G. F. Clifton and H. A. Crouch, Downing; H. P. Dawson, Trinity; A. N. Drury, Caius; L. M. Ingle, King's; M. L. Loveless, Pembroke; J. B. McFarland, Sidney Sussex; E. C. Malden, Caius; S. C. Miskin, Emmanuel; D. M. Muir and D. F. A. Neilson, Trinity; S. D. Nurse, John's; R. A. W. Proctor, Clare; S. H. Rhodes, Caius; J. W. Sewill, Clare; H. N. Stafford, Caius; P. Stocks, King's; C. R. A. Thacker and W. G. Thompson, Downing; and E. Watson-Williams, Caius.

FIRST EXAMINATION (DECEMBER, 1909).

Part I., Chemistry.—A. C. Ainsley, Caius; J. C. Andrews, John's; L. W. Batten, Sidney Sussex; A. B. Bratton, Caius; C. C. Brewis, Downing; B. Burnside, Clare; G. L. Ferguson, Jesus; H. Gardiner-Hill, Pembroke; H. L. Garson, Clare; E. A Gibb and C. H. Gow, Emmanuel; E H. H. Granger, Clare; E. T. Halnan, Trinity; J. B. Hunter, John's; R. W. P. Jackson, Clare; C. E. Kindersley, Magdalen; W. Lambert, Corpus Christi; E. A. Loak, Trinity; A. D. M'Laren, Downing; R. H. Marton, Caius; K. Masson, King's; T. D. Morgan, Jesus; W. D. Newcomb, Trinity; A. V. O'Keeffe, Sidney Sussex; A. A. Prichard and R. A. W. Proctor, Clare; W. Raffle, John's; G. E. Seon, Jesus; R. S. S. Smith and G. E. Spicer, Trinity; H. N. Stafford and E. Watson-Williams, Caius; and W. L. Willett, Trinity.

Part II., Physics.—J. C. Andrews, John's; L. W. Batten, Sidney Sussex; A. B. Bratton, Caius; B. Burnside, Clare; A. O. Courtis, Pembroke; C. D. Day, Downing; H. S. Evans, Trinity; G. L. Ferguson, Jesus; H. Gardiner-Hill, Pembroke; H. L. Garson, Clare; E. A. Gibb, Emmanuel; C. C. Goodall, Caius; H. A. C. Goodwin, Jesus; C. Grantham-Hill, Caius; E. T. Halnan, Trinity; J. B. Hunter, John's; R. W. P. Jackson, Clare; C. E. Kindersley, Magdalen; E. A. Leak, Trinity; K. Masson, King's; E. G. D. Murray, Christ's; D. F. A. Neilson and W. D. Nowcomb, Trinity; S D. Nurse, John's; A. V. O'Keeffe, Sidney Sussex; W. Raffle, John's; G. B. Sellwood and E. W. L. Sharp, Emmanuel; W. G. Thompson, Downing; G. S. Trower, King's; and W. L. Willett, Trinity.

Part III., Elementary Biology.—J. C. Andrews, John's; K. B. Bellwood, Pembroke; J. L. Davies, Emmanuel; H. S. Evans, Trinity; H. A. C. Goodwin, Jesus; C. H. Gow, Emmanuel; W. B. Loveless, Pembroke; R. D. Marett-Tims, Caius; E. W. Mason, John's; H. L. Milsom, Trinity; E. G. D. Murray, Christ's; H. R. Pollock, Trinity; E. J. Selby, Downing; T. H. Somervell, Caius; G. S. Trower, King's; C. C. A. Whitworth, Trinity; W. R. Wilson, Emmanuel; and F. B. Winfield, Downing.

SECOND EXAMINATION (DECEMBER, 1909).

Human Anatomy and Physiology.—K. B. Aikman, Clare; G. Arnfield, Caius; H. A. Ash, B.A., Pembroke; D. C. G. Ballingall, Emmanuel; R. E. Barnsley, B.A., and A. V. Boyall, Trinity; E. J. Y. Brash, John's; A. E. Brown, Christ's; D. S. Bryan-Brown, B.A., Downing; E. N. Butler, Clare; D. G. Cherrington, B.A., Trinity; J. D. Clarke, B A., Sidney Sussex; A. C. Clifford, B.A., Emmanuel; H. A. Douglas, B.A., H. Selwyn; G. D. East, Emmanuel; B. C. Ewens, Caius; J. V. Fiddian, Emmanuel; N. Garrard, B.A., Pembroke; J. L. Green, Downing; J. R. Griffith, B.A., Christ's; C. Helm, King's; R. Hodson, B.A., Pembroke; A. N. Hooper, Emmanuel; D. W. John, B.A., Clare; C. C. Kerby, Trinity; G. A. Lilly, Caius; A. R. MacMullen, Caius; W. C. D. Maile, B.A., Pembroke; H. Y. Mansfield, Emmanuel; F. D. Marsh, Trinity; W. H. Marshall and J. A. Martin, B.A., Pembroke; E. J. Nangle, Caius; P. Newton, Clare; M. W. Paterson, B.A., John's; R. A. Peters, Caius; D. V. Pickering, B.A., Emmanuel; S. G. Platts, Caius; N. P. Pritchard, B.A., Trinity; Ff. Roberts, Clare; R. S. Scott, B.A., Caius; H. N. Sealy, B.A., Trinity; D. N. Seth-Smith, Emmanuel; G. A. Smythe, B.A., Emmanuel; W. S. Soden, John's; L. C. Somervell, King's; D. L. Spence, B.A., H. Selwyn; G. W. Spencer and R. Stansfeld, John's; H. M. Stephenson, B.A., Caius; A. V. Stocks, John's; J. W. Stretton, Caius; A. L. Sutcliffe, B.A., Sidney Sussex; C. R. Taylor, B.A., Caius; W. F. Thompson, B.A., King's; P. Verdon, B.A., Jesus; C. Warner, B.A., Pembroke; H. A. Watermeyer, Caius; M. H. Watney, B.A., Trinity; W. G. Watson, B.A., Caius; and A. M. Zamora, Christ's.

THIRD EXAMINATION (DECEMBER, 1909).

Part I., Pharmacology and General Pathology.—H. C. Attwood, B.A., Caius; G. V. Bakewell, B.A., Clare; T. E. Banister, B.A., Christ's; D. C. Bluett, Emmanuel; H. T. H. Butt, B.A., Christ's; J. W. H. Chun, B.A., Trinity; E. B. Clayton, B.A., Caius; H. F. Comyn, B.A., King's; H. J. Couchman, B.A., Caius; C. H. Crawshaw, B.A., Christ's; H. J. M. Cursetjee, Caius; J. Ellison, B.A., and G. F. Fiddian, B.A., Downing; D. J. Freyer, Trinity; A. W. Gaye, B.A., Caius; A. C. Gemmell, M.A., Trinity; J. B. Hance, B.A., Christ's; G. G. Johnstone, B.A., King's; R. F. Jones, John's; G. L. Keynes, B.A., Pembroke; J. C. Marklove, B.A., Caius; R. W. Meller, B.A., Trinity; H. J. S. Morton, B.A., Pembroke; F. C. Nowman, B.A., Downing; A. B. Paul, B.A., Christ's; M. N. Perrin, B.A., Pembroke; C. Raymond, B.A., Caius; E. Rayner, B.A., Pembroke; H. S. Reed, B.A., Trinity; E. D. W. Reid, B.A., Christ's; H. B. Richmond, B.A., King's; F. H. Robbins, B.A., Pembroke; L. T. Rutherford. Clare; I. Singh, B.A., Pembroke; F. B. Smith, B.A., King's; W. F. Thompson, B.A., and J. R. Waddy, B.A., Pembroke; F. W. Watkyn-Thomas, B.A., and H. B. Weir, B.A., Trinity; H. F. Wilson, B.A., Christ's; J. Winterbotham, B.A., King's; and C. Worster-Drought, B.A., Downing.

Part II., Surgery, Midwifery, and Medicine.—A. Abrahams, B.A., Emmanuel; G. G. Alderson, B A., Caius; W B. G. Angus, B.A, Christ's; C. W. Archer, B.A., Trinity; L. Bromley, B.A., Caius; H. T H. Butt, B.A., Christ's; W. H. Cam, B.A., Caius; A. B. Carter, B.A, Jesus; G. Cawston, B.A., Caius; A. J. Clark, B.A.; King's; E. B. Clayton, B.A., and L. Colledge, B.A., Caius; R. Crawford, B.A., Jesus; J. H. Crofton, B.A., Pembroke; J. P. H. Davies, B.A., Jesus; H. L. Duke, B.A., and H. B. Elilson, B.A., Caius; P. K. Gilroy, B.A., H. Selwyn; T. R. Glynn, B.A., Clare; J. L. Graham-Jones, B.A., Emmanuel; B. Haigh, B.A., Caius; W. C. Hodges, B.A., Trinity Hall; G. Holmes, N. G. Horner, B.A., and H. E. Humphrys, B.A., Caius, R. W. Ironside, B.A., Pembroke; W. Ledlie, M.A., Christ's; C. McKerrow, B.A., Clare; H. McLean, B.A., Caius; L. Meakin, B.A., Trinity; E. Mellanby, B.A., Emmanuel; H. G. Monteith, B.A., Pembroke; E. D. W. Reid, B.A., Christ's; H. G. Rice, B.A., John's; J. G. Saner, B.A., Caius; H. S. C. Starkey, B.A., Downing; C. H. S. Taylor, B.A., Caius; F. R. Thornton, B.A., Trinity; G. H. H. Waylen, B.A., King's; H. B. Weir, B.A. Trinity; C. S. E. Wright, B.A., Emmanuel; and O. K. Wright, Christ's.

UNIVERSITY OF LONDON.—At the first examination for medical degrees held recently the following candidates were successful:—

Geoffrey Andrew Bird, private study; Marjorie Ada Blandy, private tuition; Marion Mildred Barrow Burt, University of Birmingham; N. St John G. Dudley Buxton, University College; Frederick H. L. Cunningham, St. Bartholomew's Hospital; John Horace Dancy, King's College; Richard Foltrim Fagan, University College; Roy Fazan, Epsom College and private study; Victor Feldman, London Hospital; Joseph Fielding, Victoria University of Manchester; Samuel Lionel Green, Stonyhurst College; Henry Little Hardy Greer, St. Bartholomew's Hospital and Queen's University, Belfast; Hugh Ernest Griffiths, University College, Cardiff; William Arthur Edward Karunaratne, University College; Reginald Heber Leigh, Epsom College and King's College; Geoffrey T. Loughborough, St. Bartholomew's Hospital; Hugh James McCurrich, University of Bristol; Owen Sidney Martin, University College; Sinclair Miller, Queen's University, Belfast; Lloyd Desbat Phillips, University College; John Sturges Ransom, Epsom College; Tom Wiltshire Robbins, London Hospital; Philip Dennis Scott, Guy's Hospital; John Hunter Sewart, Epsom College and University College; William Goodman Shakespeare, King's College; Henry James Drow Smythe, University of Bristol; James Hatton Staley, Victoria University of Manchester; Robert Seeton Stewart, Dulwich College and Guy's Hospital; Aubrey Lennard Stokes, Guy's Hospital; Edward Benjamin Sundorland, University College; Joseph Bulmer Thackeray, London Hospital; Humphrey Q. F. Thompson, Guy's Hospital; and Montague Sydney Woolf, University and Municipal Technical School, Birmingham.

The following students who took a portion of the examination under old regulations have now completed it:—

John Prichard Bracken, University College; Gwendolyn Margaret Burns, London (Royal Free Hospital) School of Medicine for Women; Ernest James Coombe, King's College; Thomas Williams David, University College, Cardiff; Harry Hope Fisk, St. Mary's Hospital; Frank Brayshaw Gilhespy, University College; and Thomas Windover Robinson, London Hospital.

The following student who took a portion of the examination under old regulations has now qualified as follows:—

Biology.—John William Heekes, Charing Cross Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Rudolf Lennhoff, editor of the *Medizinische Reform*, an important paper devoted to the advancement of social hygiene and medicine, has been granted the title of Professor.—*Budapest:* Dr. Béla Fenyvessy, *privat-docent*, has been granted the title of Extraordinary Professor. Dr. Jacques Loeb, who is now Professor at the Berkeley University in California, has been offered the chair of Experimental Biology. Dr. Koloman Pándy has been recognised as *privat-docent* of General Psychology and Neuro-pathology; and Dr. Paul Ranschberg as *privat-docent* of Medical Psychology.—*Cologne:* Dr. Leopold Bleibtreu of the Protestant Hospital has been granted the title of Professor.—*Frankfort:* Funds have recently become available for the long-desired expansion of the Academy of Social and

Technical Sciences into a complete University, with philosophical, law, and medical faculties.—*Kiel:* Dr. Franz of Jena has been officially gazetted to the chair of Midwifery and Gynæcology.—*Königsberg:* Dr. Ernst Rautenberg, *privat-docent* of Medicine, and Dr. Gerhard Joachim, *Oberarzt* in the Medical Clinic, have been granted the title of Professor.—*Leipsic:* Dr. August Döliken, *privat-docent* of Neurology and Psychiatry, has been promoted to an Extraordinary Professorship.—*Pavia:* Dr. Pietro Bossi of Bologna has been recognised as *privat-docent* of Orthopædics.

AN ADDITIONAL INSPECTOR FOR THE LOCAL GOVERNMENT BOARD.—The President of the Local Government Board has appointed Dr. Arthur Eastwood, one of the pathologists of the Royal Commission on Tuberculosis, an additional medical inspector of the Board, with a special view to his undertaking pathological investigations. Provision also has been made for the necessary assistance and laboratories. The immediate object will be to apply to public health work the very important results obtained by the Royal Commission on Tuberculosis, and thereby to ensure the freedom of important foods from the infection of this disease. It is intended also to investigate the similar problems which are constantly arising in connexion with other infectious diseases. These investigations will be concerned chiefly with current doubtful points in regard to disease. The new work thus inaugurated by Mr. Burns will include inquiry as to the pathological methods of diagnosis of disease already utilised in the public health work of many sanitary authorities. It is expected that by interchange of information good work will be encouraged and extended, and that coördination and standardisation of the bacteriological methods of diagnosis of disease will be secured. Dr. Eastwood's work is well known and we need only recall that he was one of the representatives of the Tuberculosis Commission at the International Congress on Tuberculosis held at Washington in 1908, and that, as a result of that visit, he wrote an able sketch of the American methods of control and improvement of the milk-supply which was published last May as the first of the new series of health reports issued for popular instruction by the Local Government Board (THE LANCET, vol. i., 1909, p. 1536). We are pleased to record the action of the Board in creating this scientific post, which is in keeping with the progressive spirit which Mr. Burns has shown in all matters of the public health during his tenure of office, and we congratulate Dr. Eastwood on his important appointment.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—A meeting of the General Council of King Edward's Hospital Fund for London was held on Jan. 3rd at the offices of the Fund, 7, Walbrook, E.C. There were present: Sir William S. Church, Bart. (in the chair), the Rev. T. Bowman Stephenson, D.D., Lord Sandhurst, the President of the Royal College of Physicians (Sir R. Douglas Powell, Bart.), the Right Hon. Sir Savile Crossley, Bart., the Right Hon. Sir Joseph Dimsdale, Bart., the Right Hon. Sir Edgar Speyer, Bart., Lieutenant-Colonel Sir Arthur Bigge, Sir Horace Marshall, Sir John Craggs, Sir E. Cooper Perry, Dr. Edwin Freshfield, Mr. John G. Griffiths, and Mr. Albert G. Sandeman. A letter, received by the honorary secretaries from Sir Arthur Bigge on behalf of His Royal Highness the President, was read as follows: "The Prince of Wales regrets that he is unable to be in London on Jan. 3rd, and that consequently he cannot preside at the meeting of the Council. His Royal Highness desires to inform the Council that he has reappointed the Finance Committee as before constituted. Lord Richard Cavendish and Mr. Danvers Power retire from the Executive Committee, and the Honble. Sydney Holland and Dr. J. R. Bradford, M.D., F.R.C.P., have been appointed and the other members reappointed. To the Distribution Committee His Royal Highness appoints Mr. Danvers Power, Dr. F. H. Champneys, M.D., F.R.C.P., and Mr. Y. R. Eccles, and reappoints the other members except the Rev. Canon Barnett, who retires. Dr. J. Kingston Fowler, M.D., F.R.C.P., is appointed to the Convalescent Homes Committee, Mr. Alfred Willett, F.R.C.S., and Sir Richard Havelock-Charles retiring; the other members are reappointed. His Royal Highness greatly regrets the loss of the valuable assistance of Mr. Willett, and is very sorry that Mr. Hugh Smith, who has been actively associated with the Fund since its foundation, is temporarily indisposed and unable to be present at Monday's meeting of the Council. His Royal Highness trusts that he may soon be restored to health." The formal order signed by His Royal Highness, the President, appointing the members of the General Council, members of committees, and officers respectively for the year 1910 was read. The resolutions providing for the work of the Fund for 1910, which were approved at the meeting of the President and General Council held at Marlborough House on Dec. 13th, 1909, were formally adopted.

THE SOCIETY FOR THE STUDY OF INEBRIETY.—The next meeting of the society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Tuesday, Jan. 11th, at 4 P.M., when Dr. Albert Wilson will open a discussion on "Alcoholism and Crime."

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERSON, J., M.D. Aberd., has been appointed Officer of Health for the Shire of Avon, Victoria, Australia.

CHEESE, F. W., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Harpenden District of the county of Hertford.

COLE, SAMUEL JOHN, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Inspector of Schools for the Administrative County of West Suffolk.

ERSKINE, A. M., M.D. R.U.I., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Goole District of the county of York.

GILLESPIE, J. R., M.B., B.Ch., B.A.O., has been appointed Assistant Medical Officer to the Hampshire County Council.

JONES, Rev. A. WENTWORTH, M.R.C.S., L.R.C.P. Lond., has been appointed Rector of Buckland Ripers, Dorset, by the Bishop of Salisbury (Patron)

LETHBRIDGE, C. F., M.R.C.S., L.S.A., has been appointed Officer of Health for the Shire of Seymour, Avenel Riding, Victoria, Australia.

MAIR, J., M.B., C.M. Glasg., has been appointed Medical Officer of Health and Medical Inspector of School Children for the Borough of Harrogate.

MARTYN, SAMUEL, M.B., M.S. Glasg., has been appointed Medical Officer to the Post Office at Airdrie and Medical Examiner of Local Teachers under the Education Department.

TAYLOR, D. M., M.D., C.M. Glasg., has been appointed Assistant Medical Officer of Schools at Halifax.

WATT, JOHN A., M.B., Ch.B. Aberd., D.P.H., has been appointed Assistant Medical Officer of Health of the county of Lanark.

WILLIAMSON, OLIVER K., M.D. Cantab., F.R.C.P. Lond., has been appointed Physician to Out-patients at the Hampstead General Hospital, with which is amalgamated the North-West London Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

ABERDEEN ROYAL INFIRMARY.—Assistant Surgeon.

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum and fees, with board, residence, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Assistant Dental Surgeon.

BRISTOL, UNIVERSITY OF.—Demonstrators of Anatomy and of Physiology. Salaries £180 per annum.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £60 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CARDIFF MENTAL HOSPITAL, Whitchurch.—Physiological Chemist. Salary £200 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and laundress.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary 100 guineas per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, washing, and attendance.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry.

JOHANNESBURG HOSPITAL.—Medical Man in charge of the X Ray and Electrical Department. Salary at rate of £500 per annum.

LANARK, COUNTY OF.—Two Junior Medical Inspectors of School Children. Salary £250 per annum.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary is at rate of £50 per annum, with board, residence, &c.

LIVERPOOL STANLEY HOSPITAL.—Honorary Dental Surgeon.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Pathologist and Bacteriologist. Salary at rate of 50 guineas per annum.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Assistant Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Physician.

NAVAL FORCES IN THE UNITED KINGDOM.—Two Dental Surgeons. Salary £1 per diem, and travelling expenses.

NEW ZEALAND, OTAGO UNIVERSITY, Dunedin.—Bacteriologist and Lecturer in Public Health. Salary £500 per annum.

NORTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £200 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, washing, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—Pathologist and Registrar. Salary £80 per annum, and lunch.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Physician to Out-patients.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon. Salary £125 per annum.

ST. PETER'S HOSPITAL, Henrietta-street, Covent Garden, W.C.—Three Clinical Assistants in the Out-patient Department.

SALOP INFIRMARY AND COUNTY HOSPITAL.—House Physician. Salary at rate of £70 per annum, with board and apartments.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

SEAMEN'S HOSPITAL SOCIETY.—Assistant Physician and Assistant Surgeon at the Dreadnought Hospital, Greenwich.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

WARWICK, HATTON ASYLUM.—Junior Assistant Medical Officer. Salary £150, with full board.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Assistant Surgeon. Also Honorary Gynæcologist.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Surgeon. Also Honorary Clinical Assistant in the Dental Department.

YORKSHIRE, WEST RIDING.—Medical Inspector of Elementary School Children. Salary £300 per annum and expenses.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Aberdeen, in the county of Aberdeen; at Eyam, in the county of Derby; and at Skibbereen, in the county of Cork.

Births, Marriages, and Deaths.

BIRTHS.

HANCOCK.—On Dec. 30th, 1909, at Queen's Ride, Barnes, S.W., the wife of George C. Hancock, M.R.C.S., D.P.H., of a daughter.

LINNELL.—On Jan. 4th, at The Point, Sheringham, Norfolk, the wife of J. E. Linnell, M.B., B.C., B.A. Cantab., D.P.H. Lond., of a daughter.

MAXWELL.—On Dec. 27th, 1909, at Dowsett-avenue, Southend-on-Sea, the wife of J. Burns Maxwell, B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

MORGAN.—On Jan. 1st, at Marteg House, Westcliff-on-Sea, the wife of W. Harmon Morgan, M.R.C.S., L.R.C.P. Lond., of a son.

PARKER.—On Dec. 24th, 1909, at Moor River, Natal, the wife of Anthony Scott Parker, M.B., of a son.

ROBINSON.—On Dec. 25th, 1909, at Plymouth, the wife of Gerald Robinson, F.R.C.S., of a daughter.

MARRIAGES.

INGRAM—DONNITHORNE.—On Dec. 29th, 1909, at St. Paul's, Onslow-square, Thomas Lewis Ingram, M.A. Cantab., M.R.C.S., L.R.C.P., to Lilian, eldest daughter of the late Lieutenant-Colonel Donnithorne, Royal Scots Greys, and of Mrs. Donnithorne.

DEATHS.

DOUGLAS.—On Dec. 31st, 1909, at Birdwood, Wells, Somerset, Lieutenant-Colonel Campbell Mellis Douglas, V.C., M.D., R.A.M.C. (retired), aged 69.

HEYWOOD SMITH.—On Jan. 2nd, at 40, Portland Court, W., Emily Anne Gertrude, wife of Heywood Smith, M.D., aged 67.

ROSCOE.—On Dec. 31st, 1909, Henry Roscoe, M.R.C.S., L.R.C.P. Lond., D.P.H. Vict.

WHITE.—On Dec. 23rd, 1909, at Rothbury, Langdon-road, Upper Parkstone, Charles Joseph White, M.D., in his 85th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CHRISTMAS PLAY AT ST. MARY'S HOSPITAL.

FOLLOWING the custom of many years the resident medical officers of St. Mary's Hospital gave a capital dramatic entertainment to the patients, nurses, and friends of the hospital on Dec. 29th and 30th, 1909, in the out-patient hall, which on the second night was filled to overflowing with at least 600 people. The play chosen was Henry L. Byron's famous comedy *Our Boys*, and was cast as follows:—

Sir Geoffrey Champneys (a county magnate)	Mr. D. W. Daniells.
Talbot Champneys (his son)	Mr. J. E. L. Johnston.
Perkin Middlewick (a retired butterman) ...	Mr. K. A. Lees.
Charles Middlewick (his son)	Mr. G. Galpin.
Kempster (Sir Geoffrey's man-servant) ...	Mr. R. A. Parsons.
Poddles (Middlewick's butler)	Mr. L. Colebrook.
Violet Melrose (an heiress)...	Mr. F. G. Caley.
Mary Melrose (her poor cousin)	Mr. R. H. S. Marshall.
Clarissa Champneys (Sir Geoffrey's sister) ...	Mr. P. N. Cave.
Belinda (a lodging-house slave)	Mr. H. L. Barker.

Act I.—At the Butterman's.
Act II.—At the Baronet's.
Act III.—Mrs. Patcham's Three-Pair Back.

The actors had evidently taken the utmost pains with their rehearsals, being word-perfect, a supreme virtue in amateurs, and in several cases showed strong dramatic talent. The hit of the evening was made by Mr. R. H. S. Marshall as the flighty Mary Melrose. Not only was he admirably made up and wore his frocks with becoming grace, but he threw himself into the female part in a manner rarely achieved by a male impersonator, while delivering his lines in contralto. Mr. F. G. Caley found more difficulty in turning his "manly voice again toward childish treble," although he scored a great success in his love-scenes with Charles Middlewick. In that somewhat sticky and conventional part Mr. Galpin did excellent work, infusing it with a life that it has been known to lack on a more ambitious stage. Mr. Kenneth Lees gave a ripe performance of the vulgar but good-hearted butterman, which was marred only by a disposition to fidget. Mr. Daniells was pompous enough as the aristocratic "Roman Father," Mr. J. E. L. Johnston maintained his noodle of a son's drawl with astonishing persistence throughout the evening, and Mr. H. L. Barker quite merged his identity into that of Belinda the slavey, presenting a really amusing character-study which gained its full recognition. Mr. P. N. Cave did his best with the thankless part of Clarissa, whilst Mr. R. A. Parsons and Mr. L. Colebrook said their few lines efficiently. The whole production reflected great credit on Dr. M. Mitchell Bird, the acting manager, and Mr. Frederick Clay, the stage manager, who with the actors received hearty calls at its conclusion. The *entr'acte* music was under the direction of Mr. W. L. Cowardin, amongst the artists who kindly gave their services being Miss Kathleen Peck, a charming soprano, Miss Gladys Rowland, Miss Steyerman, Mr. W. A. Reynolds, and Miss Edith Gosse, who performed the accompaniments. The scenery was effectively painted, we believe, by a porter of the hospital whose name did not appear on the programme.

"THE MODERN DOUCHE CRAZE."

"A POSSIBLY Old-fashioned General Practitioner" sends us the following observations on the douche, its use and abuse. "It appears that the modern woman, of the upper and middle classes at any rate, considers a vaginal douche an essential part of her daily toilet; this is, I think, an incontestable fact. She may be absolutely free from any morbid or abnormal condition; this makes no difference. Still the hydrostatic douche-box is to be seen hanging on the bathroom wall or the Higginson syringe from the towel rail in her bedroom. She is, to my mind, warring against Nature by the continual washing away natural secretions, and by forcible irrigation exposes to various infective agents areas of tissue denuded of their normal mucous membrane. It seems to me that the classes who do not use the douche as a regular habit are more free from the ordinary ailments and diseases common to women than those who do. The douche appears to me to destroy the natural covering, the protecting and lubricating agents, thus laying bare areas of absorbent surface, providing suitable foci for any germ with which it may happen to come in contact, so predisposing to pelvic cellulitis, peritonitis, and possibly even malignant disease by the continual irritation and constant stimulation to tissue repair. Are these conditions of pelvic inflammation and cervical catarrh more common now than they were in the days of our ancestors when vaginal irrigation was a practically unknown or unused quantity? We must all acknowledge the undoubted value of *vaginal* irrigation in conditions of leucorrhœa, in malignant disease with foul and fœtid discharges, also in pelvic inflammatory conditions; and hot *uterine* douching in post-partum hæmorrhage, or following intra-uterine manipulations for the removal of retained or adherent placentæ. But the use of a daily, perhaps morning and evening, douching of hot water, or may be of some strongly antiseptic or strong solution as is now in common use amongst the upper and middle classes—is this not more than harmful to the normal woman? It has been my custom, at any rate, to condemn the indiscriminate use of the douche, allowing it only in morbid conditions. I have heard a woman exclaim that 'not to use a morning and evening douche was filthy.' I am not so certain that this is the case. Nature's secretions are surgically clean and designed for special purposes. Maintain absolute cleanliness; yes, by all means; but by *external* bathings with aseptics or antiseptics. You will find douching used in a normal confinement; this, to my mind, is likely to lead to complications. Nature provides an aseptic washing *a tergo*. Why substitute for this an irritating antiseptic washing *a fronte?* Having experienced general practice in town and country I am led to these ruminations on the 'vogue of the douche.'"

THE "COLANDER" TEAPOT.

INNUMERABLE devices as there are for preventing the over-infusion of tea, we do not remember one so simple or so convenient as the "colander" teapot shown in the accompanying illustration. Moreover, while the idea is effective the normal shape of the teapot is not interfered with. Just beneath the lid, and hung upon a button, is a moveable strainer or colander which can be lifted out of the infusion by merely depressing the hook of the colander with the thumb, and fixing it in that position upon the button. The button, in fact, serves as a kind of hinge to the colander, which may be kept either in or out of the hot water at will. It will be seen, also, that the progress of the infusion can be helped by alternately depressing and raising the colander. All this is done, of course, with the lid on. The teapot is an artistic design, and is made by Messrs. W. A. S. Benson and Co., Limited, of 82 and 83, New Bond-street, London, W.

THE PRIZE OF THE ROYAL SOCIETY OF ARTS FOR LIFE-SAVING APPARATUS FOR USE IN NOXIOUS ATMOSPHERES.

IN June, 1907, the Council of the Royal Society of Arts offered, under the Fothergill Trust, a gold medal, or a prize of £20, for the best portable apparatus or appliance for enabling men to undertake rescue work in mines or other places where the air is noxious. In response to this offer a certain number of answers was received. The Council had hoped to be able to make practical tests of the apparatus submitted, but the facilities which they had expected to obtain for the purpose were unfortunately not immediately available, and consequently the proposed trials had to be postponed. The Council has been now informed that facilities for carrying out tests will shortly be available; but so long a time has elapsed since the original offer that some inventors who notified their intention of competing have already made considerable alterations and improvements in their apparatus, and applications have also been received from other inventors, whom the Council would regret to exclude from the competition. After careful consideration of the circumstances, and having regard to the fact that the right was reserved of extending the time for sending in, the Council has decided to cancel the original offer and to accept for competition any apparatus which may be submitted not later than 31st March, 1910.

The following are the terms of the offer now made:—In the award of the medal regard will be had, firstly, to excellence of design and contrivance; and, secondly, to excellence of manufacture. Credit will be given to such parts of the apparatus as are the invention of the exhibitor; the object being also to distinguish the apparatus which gives the best promise of being practically useful. Inventors intending to compete should send in a notice of their intention, together with a full description of their inventions, not later than March 31st, 1910, to the secretary of the Royal Society of Arts, John-street, Adelphi, London, W.C., and in cases in which the apparatus has been put into actual use the experience of such use should be given, and the special points of merit of the apparatus indicated. Notice will be subsequently sent to those competitors whose apparatus the judges may desire to test, together with an indication of the tests, of the manner in which the tests will be conducted, and the place where the tests will be made. Competitors intending to patent their inventions should be careful to obtain protection, as the Council of the Society cannot undertake any responsibility as regards the secrecy of the whole, or of any part, of an invention submitted to them. The prize will be awarded on the report of judges appointed by the Council. The competition is not limited to British subjects. The council reserve to themselves the right of withholding the prize, of extending the time for sending in, or of rewarding a smaller prize or smaller prizes.

VITAL STATISTICS OF JAMAICA.

Sir Sydney Olivier, K.C.M.G., Governor of Jamaica, reporting on the Blue-book of the colony for the year ending March 31st, 1909, gives the estimated population as 848,656 (males 413,899, females 434,757). The number of marriages during the year was 3116 (4·1), as compared with 6251 (7·4) in 1907–08, 5507 (6·6) in 1906–07, and 3116 (3·8) in 1905–06. "The sudden freshet of marriages let loose by the earthquake (following after two years of very low matrimonial water) has now evidently exhausted itself, and the island rate has reverted to the average of the five years preceding that spiritual quickening." The number of births registered was 31,785, against 29,210 the previous year. Illegitimate births formed 60·5 per cent. of the total; the average percentage of illegitimate births during the last ten years has been 63·5. 18,928 deaths were registered, being 22·4 per 1000 of the estimated population, a remarkable drop from the 28·3 of 1907–08 and the 26·2 of 1906–07, and a slight improvement on the average rate (22·6) of the previous five years. Of the deaths medically certified 18·9 per cent. were imputed to diarrhœa, enteric fever, enteritis, dysentery, or gastro-enteritis; 9·9 to phthisis; 2·2 to tuberculosis, other than tuberculous phthisis; 4·4 to pneumonia; 4·5 to malarial fever; and 3·7 to fever undistinguished; that is to say, 43·6, out of 90·1 identified, as due to communicable diseases amenable to abatement by sanitary measures. The high rate of mortality from such diseases, which has been noticeable in Kingston since the earthquake, has aroused public opinion to a lively sense of the importance of sanitation, and the health authorities, not only in Kingston, may be expected, the Governor thinks, to give more careful and effectual attention to this subject than they have been in the habit of doing. At the Public Hospital in Kingston 10,764 patients were treated during the year—3927 as in-patients and the rest as out-patients. There were 596 admissions to the lying-in hospital, 1269 cases treated in the lunatic asylum, 19,464 in the public general hospitals, and 115 in the leper asylum. In addition, the district medical officers treat free of charge all inmates of the parochial almshouses and all registered paupers, the number of out-patients during the year being 31,492, while 5332 cases of yaws were treated and 21,662 successful vaccinations performed at Government expense. The repair of earthquake damages at the Public Hospital has been undertaken and certain improvements effected, and a decision arrived at to utilise a bequest of £2049 15*s.* 3*d.* from the late Miss Rietti for the construction of a new ward, to be known as the "Rietti Ward." All the other hospitals of the island have been maintained in fair order.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

MEDICAL AND SURGICAL SECTIONS: at 5.30 P.M.

Adjourned Joint Debate:

On the Diagnosis and Treatment of Duodenal Ulcer. The following will take part:—

Dr. R. Hutchison, Dr. Hertz, Dr. Nathan Raw, Dr. R. H. Hodgson, Dr. G. Herschell, Dr. F. Craven Moore, Mr. L. A. Bidwell, Mr. C. P. Childe, Mr. H. J. Paterson, Mr. Harold Collinson, Mr. B. G. Moynihan, and others.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—William J. Gow, G. F. Blacker): at 7.45 P.M.

Specimens:

Mr. H. J. Paterson: Sarcoma of the Uterus.

Dr. J. B. Hellier: Adenoma Malignum Cysticum Cervicis Uteri.

Dr. Cuthbert Lockyer: Two Cases of Pelvic Hæmatocele of Ovarian Origin.

Dr. Macnaughton-Jones: A Specimen.

Short Communication:

Dr. Inglis Parsons: Notes on a Case of Prolapsus Uteri with Severe Cardiac Disease, Operated on under Local and Spinal Analgesia.

Paper:

Mrs. Scharlieb: The Relative Frequency of Malignancy in Ovarian Tumours.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: H. D. Rolleston, Albert Carless: at 8.30 P.M.

Cases:

Dr. Howard Heaton: Rectal Stricture treated by Fibrolysia.

Mr. J. E. Adams: Empyema Cured by Thoracoplasty.

Mr. Herbert Tilley: Objective and Rhythmical "Clicking" Noise in the Left Ear, associated with Synchronous Contraction of Certain Muscles forming the Floor of the Mouth.

Mr. Somerville Hastings: Bending of the Bones of Both Legs, and Partial Ankylosis of Both Hips.

Dr. Parkes Weber: (1) Chronic Arteritis Obliterans of a Lower Extremity associated with Phlebitis; (2) Intermittent Claudication of the Lower Extremity Due to Arteritis Obliterans (in a Tobacconist).

And other Cases.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Pathological Evening. Specimens will be exhibited by Dr. P. Weber, Dr. L. Guthrie, Dr. W. d'E. Emery, Dr. Spilsbury, Dr. Fleming, and others. Demonstrations by the new epidiascope.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Mr. M. Moullin: The Early Diagnosis of Carcinoma of the Stomach (Hunterian Lecture). (Members of the profession are invited to attend.)

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—8.30 P.M., Lieutenant-Colonel J. B. Wilson, R.A.M.C.: Management of Venereal Disease at Woolwich.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Board Room of the Great Northern Central Hospital, Holloway-road, N.

THURSDAY.—Mr. C. B. Lockwood: The Relationship between Cancer and Chronic Inflammations of the Breast.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. E. R. McDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Mr. S. Stephenson: Ophthalmia Neonatorum.

TUESDAY.—4 P.M., Dr. L. Smith: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. S. Collier: Post-operative Treatment of Abdominal Cases.

WEDNESDAY.—4 P.M., Mr. A. Edmunds: Clinique (Surgical). 5.15 P.M., Lecture—Dr. S. Spicer: A New Cardinal Principle in the Treatment of Disease and its Application in Disorders of the Nose and Throat.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. E. Squire: Asthma and its Treatment.

FRIDAY.—4 P.M., Dr. W. Hill: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Morton: X Ray Examination of Thorax.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Mr. Armour: Thecal Abscess.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Plague.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Dr. R. M. Leslie: The Patient's Constitution.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. A. G. Auld: Pulmonary Dilatation and Emphysema (Second Lecture).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M. Clinical Demonstration: Dr. E. Macnamara.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. S. Edwards: Diagnosis.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs. 50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 5th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 30	30·40	S.W.	...	48	46	35	36	36	Foggy
„ 31	30·14	S.W.	...	70	52	35	45	46	Overcast
Jan. 1	30·37	W.	0·03	48	45	38	38	38	Foggy
„ 2	30·34	S.W.	0·07	61	56	38	48	49	Overcast
„ 3	30 37	W.	...	52	51	49	48	50	Overcast
„ 4	30 45	W.	...	52	48	45	45	46	Overcast
„ 5	30·41	W.	...	45	45	41	42	43	Overcast

Communications, Letters, &c., have been received from—

A.—Messrs. C. Ash, Sons, and Co., Lond.; Mrs. Anderson, Chapel-en-le-Frith; Ashton-under-Lyne District Infirmary, Secretary of; Messrs. Armbrecht, Nelson, and Co., Lond.; A. J. L.; Addenbrooke Hospital, Cambridge, Secretary of; Agra Medical School, Principal of.

B.—Mr. F. A. Brockhaus, Lond.; Mr. H. Brockhill, St. Leonards-on-Sea; Dr. W. Brady, Elimira; Messrs. Bedford and Co., Lond.; Bristol Royal Infirmary, Secretary of; Messrs. O. Brown and Co., Plymouth; Mr. Haydn Brown, Caterham; Messrs. Baillière. Tindall, and Cox, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Blundell and Righy, Lond.; Messrs. Brown and Pank, Lond.; Mr. H. L. Barwell, Lond.; Dr. W. C. Brown, Lond.; Messrs. Bell and Croyden, Lond.; Mr. H. R. Heather Bigg, Lond.; Betterment of London Association, Lond., Secretary of; Messrs. C. Branson and Co., Lond.; Mr. C. A. G. Browne, Lond.; Messrs. W. A. S. Benson and Co., Lond.; Mr. F. B. Bartlett, Ottery St. Mary; Mr. G. Bowker, Whitby; Dr. L. Burnett, Balclutha, New Zealand.

C.—Mr. A. Clarke, New Blyth; Clerical, Medical, and General Life Assurance Society, Lond.; Messrs. J. and A. Churchill, Lond.; Cardiff City Mental Hospital, Medical Superintendent of; Cardiff Infirmary, Secretary of; Mr. H. A. Collins, Croydon; Carlisle Dispensary, Secretary of; Major Chapman, Lond.; Mr. F. W. Clarke, Chorlton-cum-Hardy; Chesterfield and North Derhyshire Hospital, Secretary of; Dr. H. W. Crowe, Yelverton; Central Education Committee, Derby, Manager of; Messrs. Cowie and Co., Lond.; Mr. H. B. Corry, East Liss; Messrs. Clark and Co., Lond.; Messrs. T. Christy and Co., Lond.; C. P.; Continental Tyre and Ruhber Co., Lond.; *Chicago Medical Recorder*, Secretary of; City of London Mental Hospital, Dartford, Medical Superintendent of; Mr. H. Beale Collins, Kington-on-Thames.

D.—Dr. J. F. Dover, Whitchurch; Messrs. Dowie and Marshall, Lond.; Derbyshire Royal Infirmary, Derby, Secretary of; Messrs. Dawson and Sons, Lond.; Devonport Corporation, Medical Officer of Health of; Messrs. Duncan, Flockhart, and Co., Lond.; Dr. D.

E.—Mr. O. B. Emhorn, Bralystok; E. W. B.; E. J. M. D.

F.—Mr. F. W. Fowke, Byfield; F. R. W.; Messrs. Findlater, Mackie, Todd, and Co., Lond.; Messrs. Fieldhall, Lond.; Dr. N. S. Finzi, Lond.; The Fine Art Society, Lond.

G.—Mr. W. H. Gatty, Lond.; G. D.; Dr. G. Garlick, Lond.; Mr. F. D. Grayson, Rayleigh; Miss Gauld, Lond.

H.—Mr. Russell Howard, Lond.; Hospital for Epilepsy and Paralysis, Lond., Secretary of; Messrs. A. H. Hart and Co., Lond.; *Hastings Observer*, Manager of; Hants County Asylum, Fareham, Clerk to the; Mr. R. G. Horncastle-Smith, Lond.; Messrs. Hirschfeld Bros., Lond.; Messrs. Hertz and Co., Lond.

I.—Imperial News Agency, Lond.

J.—Dr. W. W. Jones, Worthing; Johannesburg Hospital, Superintendent of; J. P. L.

K.—Mr. James A. Kay, Pretoria; Messrs. R. A. Knight and Co., Lond.; Kutnow Co., Lond.; Dr. N. B. Ketchedgrari, Cairo; Dr. P. Kidd, Lond.

L.—Mr. H. K. Lewis, Lond.; Colonel Lambkin, R.A.M.C., Lond.; Colonel C. T. Lane, C.I.E., Guildford; *La Metairie*, Nyon; Messrs. Lee and Nightingale, Liverpool; L. F. L.; Mr. C. Lund, Newcastle-on-Tyne; Mr. C. B. Lockwood, Lond.; Mr. J. Lane, Lond.

M.—Mr. C. Mansell Moullin, Lond., *Médecine Pratique*, St. Petersburg, Jubilee Committee of; Messrs. Meister, Lucius and Brüning, Lond.; Mr. E. Merck, Lond.; Dr. A. W. Moore, Stony Stratford; Metropolitan Ear, Nose, and Throat Hospital, Lond.; Dr. B. M. Mules, Kenton; Messrs. Merck and Co., New York; Maltine Manufacturing Co., Lond.; Dr. Bernard Myers, Lond.; Mr. J. Y. W. MacAlister, Lond.; Mr. L. Minter, Brighton; Sir C. R. McGrigor, Bart., and Co., Lond.; "Miles," Chester.

N.—National Provident Institution, Lond.; Northampton Corporation, Clerk to the; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; Dr. J. T. C. Nash, Norwich.

O.—Osborne Peacock Co., Manchester.

P.—Dr. E. A. Peterson, Mobile, U.S.A.; Mr. C. Pool, Lond.; Messrs. Peacock and Hadley, Lond.; Messrs. G. P. Putman's Sons, Lond.; Probandor State, India, Chief Medical Officer of; Mr. A. D. Pithie, Lymington.

R.—Royal Institute of Public Health, Lond., Assistant Secretary of; Royal British Nurses' Association, Lond.; The J. D. Riedel Co., Lond.; Radcliffe Infirmary, Oxford, Secretary of; Captain T. C. Rutherford, I.M.S., Bilaspur; Royal Isle of Wight County Hospital, Ryde, Secretary of; Rotherham Hospital, Secretary of; R. M. T.; Mr. C. J. Rule, Lond.; Mr. Hugh M. Righy, Lond.; Mr. J. A. Ringrose, Lond.

S.—Mr. C. F. Scripps, Lond.; Messrs. Sweby and Zeitlinger, Amsterdam; St. Andrew's Hospital, Northampton, Clerk to the; St. Mary's Hospitals, Manchester, Secretary of; Mr. W. Sinclair Stevenson, Lond.; Dr. David Sandler, Coustantinople; Dr. E. M. Smith, York; Scholastic, Clerical, &c., Association, Lond.; *Shrewsbury Chronicle*, Manager of; Scarborough Hospital, Secretary of; St Peter's Hospital, Lond., Secretary of; Messrs. Siemens Bros. and Co., Lond.; St. Mary's Hospital for Women, Lond., Secretary of; Selangor State, Senior Medical Officer of.

T.—Mr. J. Thin, Edinburgh; Telephone Instalment System Co., Lond.; Taunton and Somerset Hospital, Secretary of.

V.—Dr. M. Valladao, St. Paulo; Dr. Syed Mohamed Varis, Lucknow.

W.—Dr. J. K. Watson, West Byfleet; West Bromwich District Hospital, Secretary of; Professor K. F. Wenckelbach, Groningen; Dr. R. Prosser White, Wigan; Messrs. Wills, Lond., Mrs. Walker, Lond.; Mr. A. Wander, Lond.; West Australian Government Office, Lond., Agent for; Mr. W. Whitely, Lond.; War Office, Lond., Secretary of; Mr. Norman Wilson, Sherbourne; Mr. W. Roger Williams, Walton-by-Clevedon; Messrs. Wyleys, Coventry; Miss Watney, Pangbourne; West London Post-Graduate College, Lond.; Messrs. W. Wood and Co., New York.

[*Acknowledgments continued on next page.*

Letters, each with enclosure, are also acknowledged from—

A.—Dr. W. Armitage, Cumnock: Dr. M. A. Ansari, Lond.; Mr. P. S. Abraham, Lond.; A. M. E.; Surgeon W. F. Archibald, R.N., Chatham; Dr. J. Anderson, Lond.; Dr. J. Attlee, Lond.; Messrs. Allen and Hanburys, Lond.; A. J. L.; Augustin Medical Book Agency, New Orleans; Apollinaris Co., Lond.; A. M.

B.—Sir Lauder Brunton, Bart., Lond.; Mr. P. J. Brayn, Jersey; Mr. A. J. Bulger, Wolverhampton; Dr. W. Bainbridge, Kelso; Mr. F. E. Bennett, Margate; Professor M. Bombarda, Lisbon; Brighton, Hove, and Preston Dispensary, Assistant Secretary of; Messrs. Brady and Martin, Newcastle-on-Tyne; Messrs. J. Beal and Sons, Brighton; Dr. W. H. Bishop, Wylam-on-Tyne; Dr. R. H. Bellwood, Nottingham; Dr. C. W. Brown, Manchester; Dr. A. Brown, Lond.; Benger's Food, Manchester, Secretary of; Mr. H. Bennett, Builth Wells; Mr. C. A. Ballance, Lond.; Dr. G. P. Bate, Lond.; Dr. H. Boyd, Bendigo; Mr. James J. F. Bourke, Richmond, Queensland; Dr. Duncan Brown, Greenock; Dr. R. A. Bennett, Torquay; Mr. J. Bancroft, Acton; Mr. G. B. Bartlett, Lond.; Captain J. H. Burgess, I.M.S., Madras.

C.—Mr. F. J. Cruise, Baltinglass; Mr. H. G. P. Castellain, Lond.; Mr. W. H. Coates, Hucknall Torkard: Dr. T. Comber, Lond.; Messrs. Crossley and Co., Lond.; Dr. C. Chaplin, Angmering; Dr. V. Cammaresi, Rome; Dr. A. R. Carmichael, Liverpool; Dr. W. S. Carrol, Pontypridd; Mr. H. Case, Salisbury; Messrs. J. W. Cook and Co., Lond.; Messrs. Clave and Son, Stockport; Mr. J. Chatterjee, Calcutta; Dr. E. J. Cooke, Sheffield: Mr. A. G. Chitty, Lond.; Dr. H. G. Cooper, Altrincham; Dr. P. J. Cremen, Cork; Cambridge Hospital, Aldershot, Librarian to the; Messrs. T. Colman and Co., Lond.; C. O.; Mr. E. Champion, Ballarat East; Dr. E. Cullinan, Lond.; Dr. J. M. Cowan, Glasgow; Mr. E. G. Carter, Chapel Allerton; Mr. W. M. Crofton, Tullow; Dr. F. Chown, Hayle; Canada, High Commissioner for, Lond.; Dr. Alice M. Corthorn, Lond.; Dr. D. Campbell, Halifax, Nova Scotia; Dr. D. Crowly, Loughrea.

D.—Dr. T. Dobson, Windermere; Mr. A. C. Dornford, Lond.; Mr. A. Donnamette, Paris; Mr. A. H. P. Dawnay, Lond.; Dr. E. Desina, Naples; D. E. P.; Mr. W. F. Denning, Cramlington; Mr. F. Diemer, Cairo; Messrs. Detken and Rocholl, Naples; Mr. Elgar Down, Devonport; Dr. J. W. Dalgleish, Sutton; Mr. A. C. Dixon, Antofagasta; District Messenger Co., Lond., Secretary of; Dr. J. F. Devane, Limerick; Mr. S. Davey, Caterham Valley; Mr. R. Downer, Lond.; Dr. P. Daser, Lond.

E.—Mr. R. Evans, Pwllheli; Mr. J. H. Evans, Liverpool; Dr. A. M. Elliot, Cookstown; Dr. G. L. Eastes, Lond.

F.—Mr. G. Finch, Portinscale; Dr. H. Finley, West Malvern; Messrs. Fletcher, Fletcher, and Co., Lond.; Flintshire Dispensary, Holywell, Secretary of; Messrs. Fannin and Co., Dublin; Dr. R. F. Frew, Glasgow; Mr. L. Franklin, Southwick; Dr. J. Fitzgerald, Queenstown; Messrs. Ferris and Co., Bristol; F. C. A.; F. H.; Dr. J. M. Fortescue Brickdale, Bristol.

G.—Dr. J. G. Gibbon, Mullingar; Mr. H. Gunnell, Caerleon; Dr. E. W. Goodall, Lond.; Messrs. R. W. Greeff and Co., Lond.; G. M. L.; Mr. E. Gane, Ryhope; Dr. P. G. Garrett, Earl Shilton; Dr. A. Griffith, Hove; Dr. M. G. Greaven, Rosario; Miss A. Guillaume, Shapinshay; Messrs. Grindlay and Co.,, Lond.; Messrs. Gordon and Gotch, Lond.; Dr. G. F. Goldsbrough, Lond.; Dr. J. D. Giles, Middlesbrough; Dr. M. Granada, Riposto, Italy; Dr. Gill, Formby.

H.—Dr. J. J. Hickey, Lond.; Dr. G. F. Hulme, Felixstowe; Mr. G. A. Hawkins-Ambler, Southport; Lieutenant J. C. Hall, Castleford; Hanley Education Committee, Secretary of; Messrs. C. J. Hewlett and Son, Lond.; Mr. J. Hyde, Gargrave; Mr. J. J. Hemming, Margate; Mr. P. Howe, Denton; Mr. T. H. Hewitt, Lond.; Dr. E. R. Hunt, Brighton; Mr. G. G. Hamilton, Bournemouth; Dr. E. H. Harrisson, St. Neots; Mr. W. S. Holden, Liverpool; Mr. F. C. Hitchens, St. Austell; Messrs. Haar and Steinert, Paris; Dr. R. A. Hayes, Dublin; Mr. W. A. Higgs, Castle Coombe; Mr. H. Hedburg, Lond.; Dr. J. Howells, Bridgend; Messrs. Hooper and Co., Lond.

I.—International Plasmon, Lond.

J.—Mr. T. J. Jenkins, Honllan; Mr. R. Jones, Abergele; J. H., Lond.; Mr. J. H. Jones, Lond.; J. W. B.; Mr. H. E. Jones, Lond.; Mr. J. F. Jennings, Lond.; J. H.; Dr. J. A. Johnson, Lond.; Dr. A. W. Jagger, Flushing, U.S.A.

K.—Dr. S. J. J. Kirby, Lowestoft; Mr. W. Kay, Bentley; Mr. R. Keeble, Bagshot; Kreochyle Co., Lond.; Kent and Canterbury Hospital, Secretary of; Surgeon-Major B. Kendal, Lond.; Messrs. Knoll and Co., Lond.; Dr. H. C. Kidd, Bromsgrove.

L.—Mr. S. C. Lawrence, Lond.; Mr. R. H. Lucas, Bury St. Edmunds; Dr. W. S. Lee, Lond.; Dr. C. J. Lewis, Birmingham; Dr. J. S. W. Laing, Dundee; Dr. H. A. Lediard, Carlisle; Messrs. Longstreth, Lond.

M.—Mr. G. E. Mould, Rotherham; Dr. G. T. Maclean, Lond.; Mr. D. McColl, Tamworth; Dr. R. L. Moorhead, Blindley Heath; Dr. F. J. Malden, Malvern Link; Dr. E. R. Morton, Lond.; Dr. D. J. Marr, Nottingham; Mr. J. H. Menzies, Lond.; Mr. S. B. Mason, Pontypool; Mr. G. K. Munro, Glasgow; Dr. L. MacLachlan, Glasgow; Dr. W. Mayorga, Lima; Dr. J. Milner-Adams, Lond.; Dr. A. H. Miller, Cambridge; Dr. A. F. Miller, Stafford; Messrs. Z. P. Maruya and Co., Tokyo; Mr. J. E. May, Lond.; Messrs. Maclehose and Sons, Glasgow; Mr. T. B. Marshall, Lechlade; Mr. K. V. G. Menon, Tellicherry, India; Dr. R. A. McNeill, Surbiton; Dr. J. H. Meikle, Edinburgh; Medical Mission Hospital, Plaistow, Secretary of; Dr. J. Matthews, Tamworth: Mr. A. S. MacPherson, Bootle; Captain McKechnie, Etawah; Dr. T. S. Macaulay, Klang; Messrs. Morriss and Birch, Lond.; Messrs. Mathews Bros., Lond.; Medical Society of London, Registrar of.

N.—Dr. R. H. Norman, Lond.; Messrs. F. Newbery and Sons, Lond.

O.—Dr. J. F. O'Brien, Ballincollig; Mr. D. O'Sullivan, Kinsale; Mr. Offield, St. Helens; Dr. J. O'Connell, Mallow; Dr. E. Odsiozola, Lima: Sir Lambert Ormsby, Dublin; Mr. J. O'Conor, Buenos Aires; Mr. K. O'Brien, Oughterard: Ontario Province, Toronto, Assistant to Treasury Department.

P.—Messrs. C. Pool and Co., Lond.; Mr. F. Preston, Norwich; Dr. R. G. Price, Carmarthen; Mr. J. J. Pickles, Leeds; Mr. J. A. W. Pereira, Exeter; Messrs. Phillipson and Golder, Chester, Palitana State, India, Chief Medical Officer of; Mr. W. Phelan, Ballyroan; Dr. P. Pope, Lond.; Preston Royal Infirmary, Secretary of.

R.—Dr. W. Rankin, Glasgow; Messrs. Richardson and Co., Lond.; Messrs. J. Richardson and Co., Leicester; Dr. J. W. Rob, Weybridge; Dr. D. Riddell, Kendal; Dr. H. Rayner, Lond.; Mr. J. H. Ray, Manchester; Reuter's Telegram Co., Lond.; R. M. T.; R. R.; Mr. W. Ramsay, Melbourne; Dr. J. Reidy, Lond.; Dr. A. Routh, Lond.; Dr. G. J. Robertson, Oldham; Dr. M. Robertson, Leeds; Mr. J. K. Reeves, Lond.; Royal Ear Hospital, Lond., Secretary of.

S.—Dr. H. Sinigar, Southall; Mr. C. C. Smith, Woburn; Mr. F. W. Sears, Lond., Messrs. Stevens and Brown, Lond.: Mr. R. H. J. Swan, Lond.; Dr. J. Barclay Stewart, Haslingden; Stretton House, Church Stretton, Medical Superintendent of; Dr. J. Saffley, Liverpool; Mr. W. Shaw, Larne; Dr. D. d'O. Soares, Lisbon; Mr. J. W. Stainforth, Hinderwell; S. P. Charges Co., St. Helens; Mr. E. H. Shaw, Rotherham; Mr. H. F. Strickland, Lond.; Mr. H. B. Shepherd, Lond.; Dr. F. F. Schacht, Lond.; Messrs. G. Street and Co., Lond.; Dr. A. N. Sen, Bhowanipur; Dr. H. E. Symes-Thompson, Lond.; *Sheffield Daily Telegraph*, Manager of; Mr. S. Slade, Hatherley; Lieutenant H. Stott, I.M.S., Bombay; Somerset County Council Education Committee, Weston-super-Mare, Secretary of; *South Wales Argus*, Newport, Manager of; Sanitas Co., Lond., Secretary of; Mr. A. E. Shepherd, Doncaster; Dr. E. Schloesser, Pau; Surgeon, Wood Green; Mr. C. M. Stewart, Toronto; Society for the Propagation of the Gospel in Foreign Parts, Lond., Treasurer to the; St. George's Dispensary, Lond., Secretary of; Mr. A. H. Sutherland, Lond.

T.—Messrs. Taylor and Mackenna, Liverpool; Dr. J. Thomarson, Yarmouth, Isle of Wight; Dr. A. Tuxford, Boston; Dr. E. Taunton, Bethersden; Mr. W. R. M. Turtle, Lond.; Mr. W. Trotter, Lond.; Torquay Medical Society, Secretary of; Mr. L. S. Talbot, Timaru; Mr. H. C. Titterton, Wolston; Dr. A. E. Taylor, St. Leonards-on-Sea.

U.—Mr. H. Upcott, Hull.

V.—Mr. A. H. Vernon, Boscombe; Mr. C. H. S. Vinter, Blackpool; Victoria, Agent-General for, Lond.; Messrs. Van Houten, Lond.

W.—Mr. W. A. Ward, Richmond, Surrey; Mr. A. C. Wilson, Liverpool; Mr. V. Whitgreave, Penzance; Mr. W. Webster, King's Lynn; Messrs. A. J. Wilson and Co., Lond.; Miss W., Lond.; Dr. G. T. Western, Lond.; Messrs. F. Williams and Co., Lond.; Dr. R. M. Williams, Lond.; Dr. C. R. White, Merthyr Vale; Mr. H. Wickham, Rufford; Dr. H. G. Walker, Lond.; Dr. J. F. L. Whittingdale, Sherborne; Dr. C. Wall, Lond.; Mr. H. E. Worthington, Birchington; Lieutenant-Colonel J. H. Tull Walsh, I.M.S., Norwich; Dr. J. Lawson Williams, Beckenham; W. F. B.; W. C. B.; W. A. F.; Dr. F. G. Wallace, Lond; Winnipeg General Hospital, General Manager of; Dr. A. Watt, Glasgow; Mr. J. J. Waddelow, Whittlesea.

Z.—Messrs. C. Zimmermann and Co., Lond.; Mr. N. Zanichelli, Bologna.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*				TO THE COLONIES AND ABROAD.			
One Year	£1	1	0	One Year	£1	5	0
Six Months	0	12	6	Six Months	0	14	0
Three Months	0	6	6	Three Months	0	7	0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under	£0	4	0
	Every additional Line	0	0	6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

The Arris and Gale Lectures

ON

SOME PROBLEMS RELATING TO THE EVOLUTION OF THE BRAIN.

Delivered at the Royal College of Surgeons of England on Dec. 13th, 15th, and 17th, 1909,

BY G. ELLIOT SMITH, M.A. CAMB., M.D., CH.M. SYDNEY, F.R.S.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF MANCHESTER.

LECTURE II.[1]

Delivered on Dec. 15th.

MR. PRESIDENT AND GENTLEMEN,—In my first lecture I gave you a brief historical sketch of the discussions which established upon a firm basis the criteria which I shall make use of in the lecture to-day for the purpose of a critical analysis of the homologies of the various cortical areas found in the cerebral hemispheres of the lowlier vertebrata. This analytical study of the morphology of the cerebral cortex cannot be wholly divested of its highly technical and intricate character, because it deals with matters difficult in themselves, but which have been rendered infinitely more so by the various interpretations put upon the facts and the confusion of nomenclature with which these facts have been enshrouded by different writers. Nevertheless, this preliminary analysis is necessary before I can attempt a synthesis of the evidence relating to the evolution of the cerebral cortex in the vertebrata.

In my first lecture I explained to you how Professor Osborn, starting from the conclusions reached by Professor (afterwards Sir William) Flower in his researches on the cerebral commissures, proved that the upper of the two commissural bands found in the lamina terminalis of the monotreme (Fig. 6) and marsupial brain (Fig. 3) was the homologue of the topographically analogous commissure in the brains of reptiles, birds, amphibians, and even of certain fishes. It followed from this demonstration that, as soon as modern research had rehabilitated the conclusions reached by Professor (afterwards Sir Richard) Owen more than seventy years ago that this upper commissure in the marsupial was derived wholly from the hippocampi (Fig. 4), it became *a priori* probable that the area of the hemisphere wall from which the upper commissure sprang in the reptiles, birds, and amphibians would prove to be homologous with the hippocampus (compare Figs. 7, 8, 9, 10 and 11, *hip.*).

But these investigations yielded something more than mere *a priori* probabilities. We have seen that the cerebral cortex is fringed throughout the whole extent of its mesial edge in the monotreme and the marsupial by a properly developed and unmistakeable hippocampal formation. In all other mammals such a fringe is found only in that part of the mesial edge which extends from the uncus, near the tip of the temporal pole, to the posterior end of the corpus callosum (Fig. 1); but I have already called your attention to the fact that the rest of the mesial edge bears an insignificant rudiment, placed upon the corpus callosum (Fig. 1 *h''*) and in front of it (*h'''*) which morphological research has demonstrated to be the much atrophied vestiges of the anterior part of the hippocampal arc. Thus we find definite evidence for the generalisation that in *all* mammals the cerebral cortex is fringed with some structure representing a hippocampal formation along the whole extent of its mesial edge—from the olfactory peduncle in front to the region of the uncus behind and below.

For further elucidation of this matter see the figures illustrating Lecture I., also my writings,[2] and the beautifully illustrated memoirs of Giuseppe Levi, which confirm and extend my work on this subject.[3]

The recognition of the fact that the mesial edge of the cerebral cortex in all mammals is hippocampus points to the certainty that the corresponding part of the hemisphere in the ancestors of the mammalia must also be hippocampal in nature, and it also suggests the probability that this is a fundamental feature in the architecture of the cerebrum throughout the vertebrata. The failure to recognise this morphological argument led Professor Ramon y Cajal to reject the view that the mesial (medio-dorsal) part of the reptilian cerebral cortex is hippocampus,[4] and not only prevented him from reaping the full harvest of his own and his brother's important researches on the histology of the brain in reptiles and amphibians, but has also been responsible for the committal and the perpetuation of an error, which has found its way into most modern text-books of physiology and many books on anatomy—namely, the comparison of series of cortical nerve cells in different vertebrates in the belief that they formed a phylogenetic series. The whole value of such a comparison is destroyed when we realise that the cells were taken from areas which are *not* homologous.

But with the solitary exception of Ramon y Cajal all modern writers on this subject admit that the mesial fringing part of the cerebral cortex in all vertebrates must be hippocampus. Nevertheless some anatomists have failed to recognise exactly where the cortex ends and where the ganglionic mass, which the late Professor Huxley, in lectures delivered here in 1864[5] called "septal area," begins. It is a signal instance of Huxley's perspicuity that he came to realise the important morphological fact that the septum lucidum is merely the upper greatly stretched portion of the small and, in the human brain, quite insignificant band of ganglionic matter in front of the anterior commissure, to which Zuckerkandl many years afterwards gave the name "gyrus subcallosus." [In Fig. 1 (see Lecture I.) *p* is the gyrus subcallosus and *p'* is the septum lucidum. In Figs. 15–17, *para.* represents the paraterminal body.] Huxley grouped the septum lucidum and gyrus subcallosus together and called the whole "septal area." The septal area is the surface of the ganglionic mass to which I have given the name "paraterminal body"—"paraterminal" because in the lowlier vertebrates, in which its upper part is not yet modified to form the septum, its outstanding feature is its relationship to the lamina terminalis; and "body" to suggest its analogy to the striate body, not only structurally but also functionally. For the paraterminal body presents a relationship to the hippocampus analogous to that which the striate body has to the rest of the cortex (Fig. 17). It is one of the merits of Flower's work in 1867, to which I referred in my first lecture, that he accepted and demonstrated the importance of Huxley's conception of the "septal area," the full significance of which remained unappreciated until quite recently.

Just as the projection fibres of the neopallium (as well as many other tracts ascending to it) traverse the corpus striatum in the mammalian brain, so in all vertebrate classes the corpus paraterminale forms a matrix for fibres passing to and from the hippocampus; and part of the body in question often becomes prolonged as a fringe along the ventral edge of the reptilian and amphibian hippocampus, in a position analogous to that occupied by the fimbria in the mammalian brain (Fig. 15).

It is unfortunate that the late Professor von Kupffer should have mistaken this paraterminal fringe in the reptilian brain for the hippocampus itself—unfortunate, not only because von Kupffer admitted the logic of the morphological argument I have been discussing in this lecture; but especially from the fact that the element of confusion which he has thus unintentionally introduced is rendered far-reaching by being embodied in his excellent contribution to that great book of reference, Hertwig's "Handbuch der Vergleichenden und Experimentellen Entwickelungslehre der Wirbelthiere."[6]

---

[1] Lecture I. was published in THE LANCET of Jan. 1st, 1910, p. 1. For most of the illustrations (Figs. 6 to 15) in this report I am indebted to the Council of the Linnean Society.

[2] A Preliminary Communication upon the Cerebral Commissures of the Mammalia, with special reference to the Monotremata and Marsupialia, Proceedings of the Linnean Society of New South Wales, vol. ix. (series ii.), pp. 635–657, October, 1894. The Origin of the Corpus Callosum: a Comparative Study of the Hippocampal Region of the Cerebrum of Marsupialia and Certain Cheiroptera, Transactions of the Linnean Society of London, second series, Zoology, vol. vii., Part 3, pp. 47–69, June, 1897 The Morphology of the Indusium and Striae Lancisii, Anatomischer Anzeiger, Band xiii., Nos. 1 and 2, 1897. The Relation of the Fornix to the Margin of the Cerebral Cortex, Journal of Anatomy and Physiology, vol. xxxii., pp. 23–58 (read before the Anatomical Society of Great Britain and Ireland at Dublin, June, 1897). Further Observations upon the Fornix, with Special Reference to the Brain of Nyctophilus, Journal of Anatomy and Physiology, vol. xxxii., pp. 231–246, January, 1898.

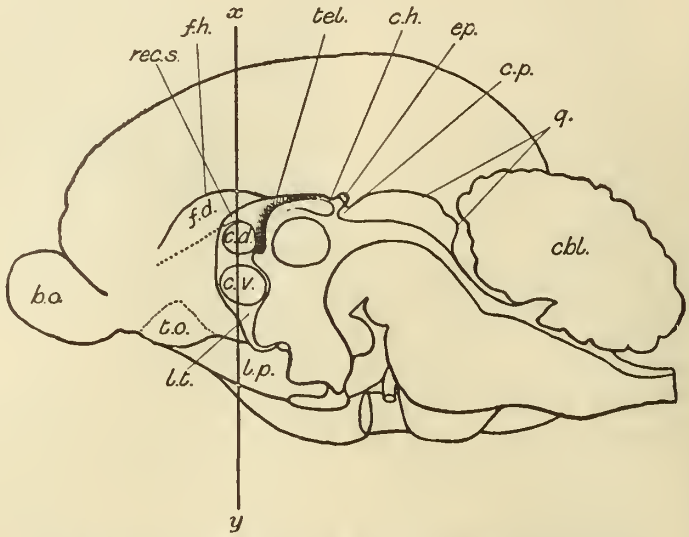
[3] Morfologia e Minuta Struttura dell'Ippocampo Dorsale, and Sull'Origine Filogenetica della Formazione Ammonica, Archivio di Anatomia e di Embriologia, 1904.

[4] Studien über die Hirnrinde des Menschen, 1906, Heft 5—Bresler's translation into German. (Compare my Fig. 16, H.)

[5] Medical Times and Gazette, March 5th, 1864, p. 256.

I have mentioned these matters, not so much for the reason of putting aside once for all the teaching of Ramon y Cajal and von Kupffer in reference to these points in the morphology of the cerebral cortex, as to bring before you the third element of proof that the medio-dorsal cortex of the sauropsida and the ichthyopsida is really hippocampus.

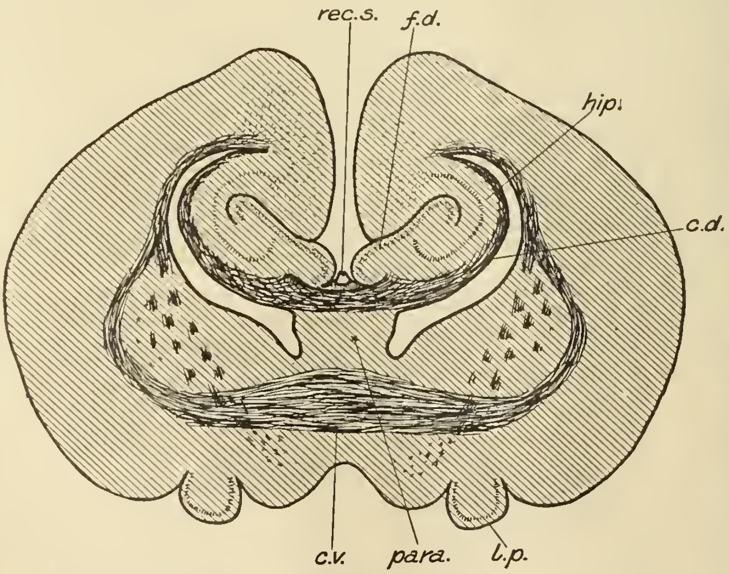
FIG. 6.



The outlines of the mesial aspect of the brain of Ornithorhynchus, shown in Fig. 5 (THE LANCET, Jan. 1st, p. 5). The line *x*, *y* indicates the plane in which the section represented in Fig. 7 was cut.

We have now seen, firstly, that the homology of the upper cerebral commissure in amphibians, reptiles, birds, monotremes, and marsupials having been established, the fact that this commissure springs from the hippocampus in the latter two groups of animals suggests the view that in the first three groups the area from which it arises is also hippocampus. Secondly, this view is further supported by the consideration, which I have just been setting forth, that the mesial fringe of the cerebral cortex must be hippocampus. To these arguments I must add the third and conclusive element in the evidence—that if the structure of the hippocampal rudiment in the fœtal monotreme, the arrangement of its fornix-fibres, its relationship to the paraterminal body, and the structure of the latter be compared with the conditions found in the reptile there can be no room for doubting the identity of the hippocampus in the latter.

FIG. 7.



Transverse section of brain of platypus, cut in the plane *x*, *y* (Fig. 6). *c. d.*, Hippocampal commissure. *hip.*, Hippocampus. *f. d.*, Fascia dentata. *para.*, Paraterminal body. *rec. s.*, superior recess of third ventricle.

A comparison of Figs. 8 and 9, representing transverse sections across the cerebral hemispheres (and their commissures) in a fœtal monotreme and a reptile respectively, will make this argument clear. The crucial regions in these two sections are shown upon an enlarged scale in Figs. 13 and 14.

I have set out this evidence in great detail elsewhere and given a series of diagrams to indicate how convincing and final the argument is.[7] We can take it, then, as an established and incontrovertible fact that the cortical area which immediately adjoins the ganglionic mass of the paraterminal body is hippocampus, whether it be the brain of a mammal, a reptile, a bird, or an amphibian that we happen to be examining.

But even when we have attained a general consensus of opinion that the medio-dorsal cortex of the reptilian brain is hippocampus, there still remain for solution two fundamental problems in the interpretation of this cortical area: (1) How much of the cortex represents the hippocampal formation; and (2) what is its nature—i.e., is it specialised into fascia dentata and hippocampus *sensu stricto?* The attempts at answering these two queries have yielded many conflicting interpretations, which are a source of the greatest confusion in the current literature of cerebral morphology.

With reference to the first query, How much of the reptilian cortex is hippocampus?—there can now be no doubt as to its mesial limitations. This has been made clear in the foregoing remarks. But where it ceases on the dorsum of the hemisphere is still a matter of dispute.

In many reptilian brains three distinct parts of the pallium, which forms the roof of the hemisphere (Fig. 16), are recognisable: the mesial (medio-dorsal) cortex (H), the dorsal cortex (D), and the lateral cortex (L).

Fourteen years ago, as the result of a detailed comparison of fœtal monotreme and reptilian brains, I was led to adopt the view adumbrated in 1892 by Dr. Adolf Meyer[8] that the mesial cortex alone represents the whole hippocampal formation. Within recent years Dr. Giuseppe Levi[9] has come to the support of Meyer and me in maintaining this opinion. But Professor Edinger[10] and Dr. Ariëns-Kappers have lent the weight of their great authority to another interpretation, in accordance with which the medio-dorsal cortex (H) represents the fascia dentata only, while the dorsal cortex (D) is the hippocampus *sensu stricto*. Ramon y Cajal, who, as I have already mentioned, opposed the view suggested by

---

[6] Band ii., Teil 3, 1906.

[7] On the Morphology of the Cerebral Commissures in the Vertebrata, with Special Reference to an Aberrant Commissure in the Brain of certain Reptiles. Transactions of the Linnean Society of London, second series, Zoology, vol. viii., part xii. By the courtesy of the Council of the Linnean Society I am able to reproduce some of these diagrams here.

[8] Zeitschrift für Wissenschaftliche Zoologie, Band lv.

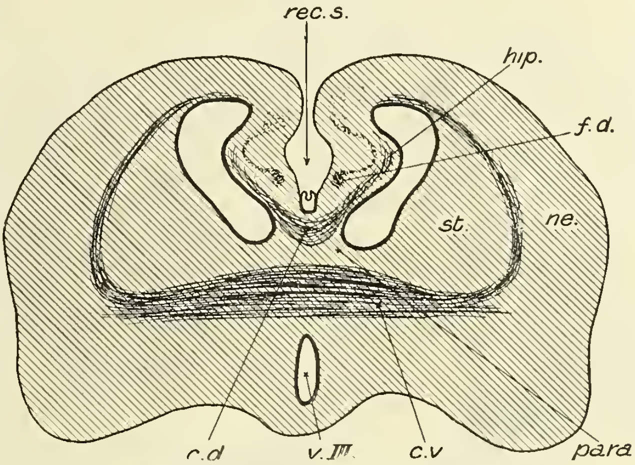
[9] Op. cit., supra.

[10] Vorlesungen, 1908.

Meyer and me that the mesial cortex (H) was hippocampal, has brought forward fatal objections to the interpretation suggested by Edinger and Ariëns-Kappers by demonstrating that the mesial cortex cannot be regarded simply as fascia dentata.

However, the histological facts, which have been so clearly elucidated by Ramon y Cajal, do not clash with the interpretation of the mesial cortex as a hippocampal formation; on the other hand, they help to explain much that was obscure, and they have enabled me to complete the chain of evidence concerning the nature and the mode of specialisation of that formation into fascia dentata and hippocampus *sensu stricto*.

FIG. 8.

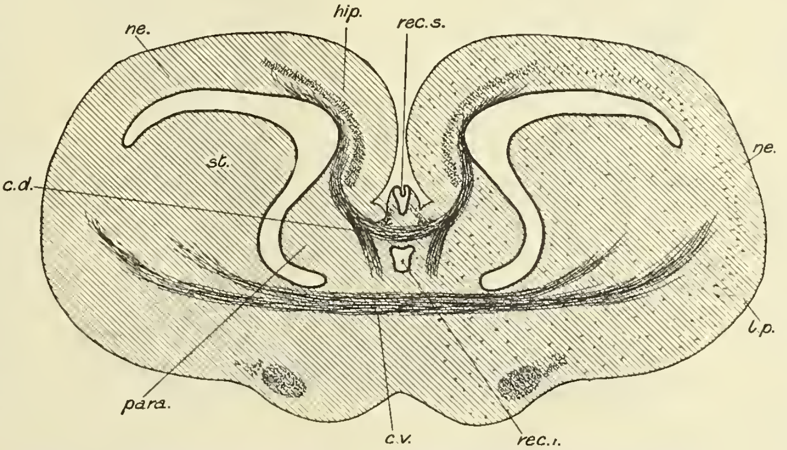


A corresponding section through a fœtal monotreme brain (Echidna). Same lettering as in Fig. 7. Note that the rudimentary fascia dentata has come into line with the hippocampal column of cells.

[With the help of a large series of diagrams the lecturer then explained the objections to Edinger's and Ariëns-Kappers's interpretation and the definite and precise reasons for regarding the medio-dorsal cortical area alone as hippocampal formation.]

In many reptiles the hippocampal cortex differs in texture at its mesial (ventral, Fig. 16, *a*) and lateral (dorsal, Fig. 16, *b*) extremities; at various times Meyer (1892), I (1896), and Levi (1904) have suggested that the development of more numerous and smaller cells at the mesial end (*a*) was a phase in the evolution of the fascia dentata. An examination of the minute structure of this mesial small-celled part justifies the statement made by Ramon y Cajal that it would not be correct to call it "fascia dentata," yet it is quite certain that it represents a stage which is already far advanced on the way to the differentiation of a true fascia dentata (see Fig. 17).

FIG. 9.



A corresponding section through a reptile's brain (*Hydrosaurus*). Same lettering as in Figs. 7 and 8.

The column of cells in the mesial cortex (H) of the reptile contains cells closely resembling and almost as highly specialised as those of the mammalian fascia dentata, but intermingled with cells of a form like those found in the hippocampus (*sensu stricto*) of the mammal as well as a third category of cell intermediate between the other two in structure and in the nature of its fibre connexions. At the mesial end of the column (*a*) the first class of cell is more abundant; at the lateral end (*b*) the other types. In mammals the second and third categories of cells disappear entirely from the main column of cells at its mesial end and thus the rudiment of the fascia dentata is formed. Some of the other two categories of cells remain on the ventricular side of the column and form the so-called nucleus fasciæ dentatæ. In the lateral part of the column the dentate type of cell disappears and we have the hippocampus *sensu stricto* as the result. Thus, in the mammal the hippocampal formation becomes specialised to form its two characteristic parts—the fascia dentata, which is a receptive mechanism for impressions of smell, and the hippocampus proper, which receives afferent impulses mainly through the intermediation of the fascia dentata and gives off projection fibres to other parts of the nervous system. If we call the fascia dentata olfacto-sensory the rest of the hippocampal formation might, perhaps, be termed olfacto-psychic, on the analogy of the terminology applied to the visual cortex in the neopallium.

Having established the homology of the medio-dorsal cortex in the reptilian brain let us now briefly consider the significance of the dorsal (D) and the lateral cortex (L). Edinger and Kappers regard the dorsal cortex (D) as being the representative of the hippocampus *sensu stricto* (i.e., that part of the hippocampal formation which is not fascia dentata and forms in the mammalian brain the hippocampal bulging into the lateral ventricle); and the former writer looks upon the lateral cortex (L) as the homologue of the neopallium.

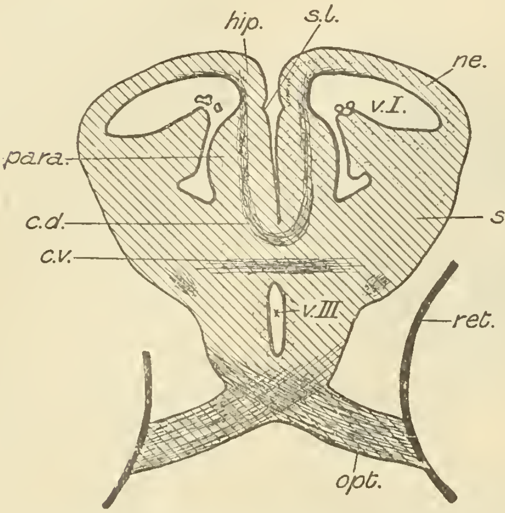
There seems to me to be sufficient evidence that the lateral cortex (L) receives the terminations of the nerve fibres of the lateral olfactory tract, and that for this reason, as well as on general morphological grounds, it is to be regarded as the homologue of the lobus pyriformis of the mammalian brain.

If we study the anatomy of the brain in the lowliest mammals it will be found that the neopallium becomes reduced to very small proportions in such marsupials as the "bandicoot" (*Perameles*) and the "marsupial mole" (*Notoryctes*), and presumably in these animals we approach as nearly as possible to the condition found in reptiles. In these brains the narrow area separating the mesial cortex (hippocampal formation) from the lateral cortex (pyriform lobe) is composed of neopallium; and by analogy I had imagined hitherto that the dorsal cortex of the reptile (D) must be the earliest representative of the neopallium. But there are many objections to the adoption of this view, which, on further study, have become so overwhelming that I feel compelled to reject the hypothesis of the neopallial nature of the dorsal cortex.

In the mammalian brain there is a strip of cortex immediately on the peripheral side of the hippocampus, which is commonly called the "subiculum hippocampi"; when the hippocampal formation extends upwards to the splenium of the corpus callosum and passes into the insignificant vestigeal band upon the corpus callosum, the subiculum does not end there, but is continued forward at the lower part of the gyrus cinguli. This is the cortical area from which Koelliker, Zuckerkandl, Oskar Vogt, and

Ramon y Cajal, amongst others, have shown fibres of the fornix longus to arise. As Ariëns-Kappers has well said, this area does not properly form part of the neopallium: it is really a transition region between it and the hippocampus. I have come to the conclusion that it is a closer approximation to the truth to regard the dorsal cortex of the reptilian hemisphere (D) as comparable to that part of the gyrus cinguli (the "interhemispheric cortex" of Ramon y Cajal), which is related to the fornix system.

FIG. 10.



A corresponding section through the brain of a fœtal Tuatara (*Hatteria*)—for comparison with Fig. 15, to explain how the paraterminal body (*para*) gets into the position shown there.

FIG. 11.

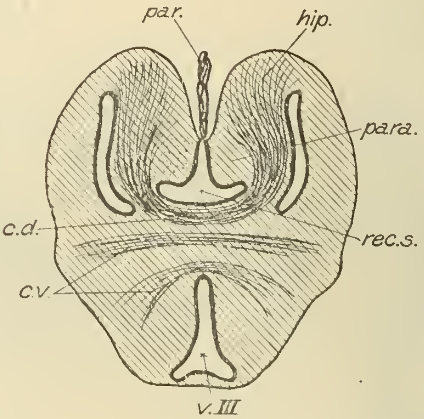


FIG. 12.

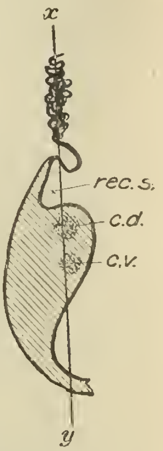


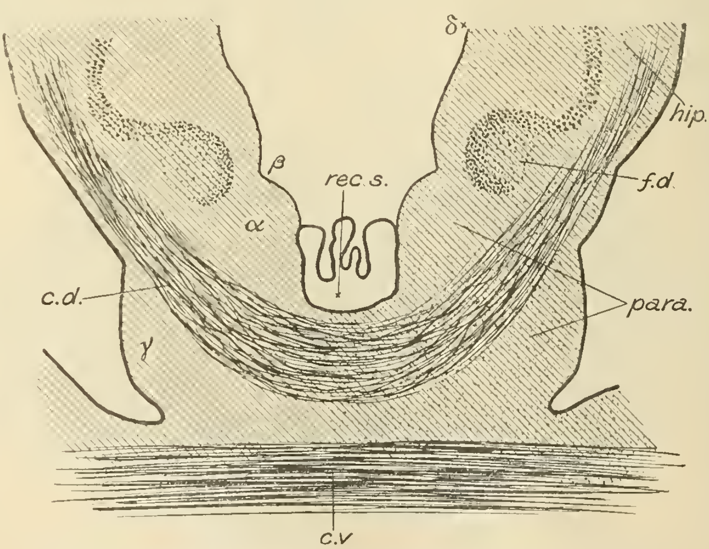
FIG. 11.—A corresponding section of a frog's brain to show its conformity to the same general scheme exhibited in Figs. 7, 8, 9, and 10.

FIG. 12.—The frog's lamina terminalis (compare Figs. 6 and 14) to show the plane in which the section shown in Fig. 11 was cut, and to demonstrate that the recessus superior (*rec. s.*) is identical in mammals, reptiles, and amphibians - i.e., the essential relations of the hippocampal commissure to the ventricle are identical, a fact denied by Johnston and other writers.

It will be observed that we are returning once more to a conception such as the genius of Broca embodied in the idea of a limbic lobe, which found more exact expression under the name "falciform lobe," as it was later modified and defined by Schwalbe.

[With the help of a series of diagrams the lecturer explained the reasons for the adoption of this view, and demonstrated the twofold arrangement of olfactory paths to the reptilian hippocampus —into its mesial fringe by fibres (Fig. 16, *f*) springing from the base of the hemisphere and others (*p*) coming from the lateral direction from the pyriform lobe, *viâ* the dorsal cortex.]

FIG. 13.



The crucial region from Fig. 8 shown on an enlarged scale to show the precise relations of the paraterminal body (*para.*), recessus superior (*rec. s.*), and fascia dentata (*f.d.*).

We are now in a position to outline the chief phases in the evolution of the cerebral cortex.

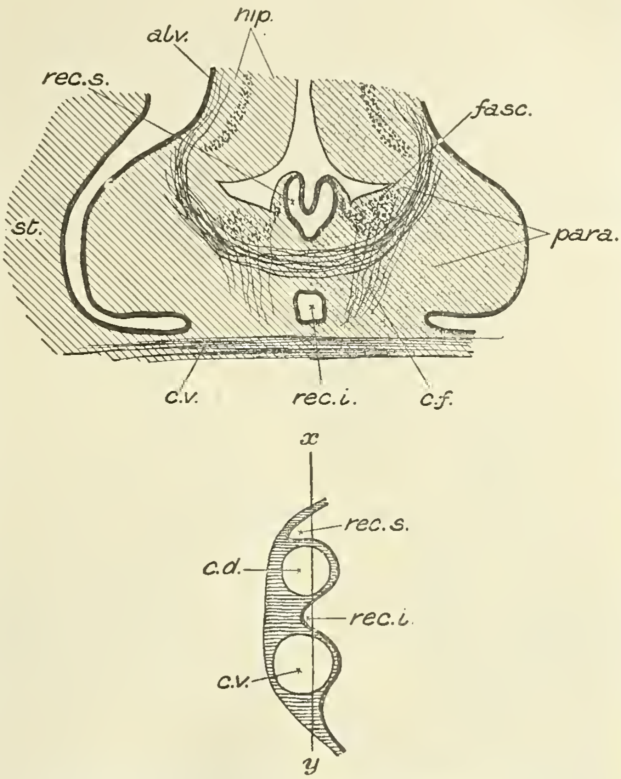
Beginning at the root of the vertebrate phylum we find that the lamprey (*Petromyzon*) has a cerebral hemisphere no bigger than its olfactory bulb. Into almost every part of the surface of this hemisphere nerve-fibres pass directly from the olfactory bulb. According to the recent researches of Dr. Tretjakoff of St. Petersburg, the whole surface of the hemisphere in the larval lamprey (*Ammocœtes*) receives such fibres, but in the adult there is, I believe, a definite primordial cortex to which smell impressions pass indirectly through the intermediation of another part of the hemisphere.

Even in this primitive brain there is already some slight indication of a differentiation of structure in the hemisphere. The greater part of the surface represents the rudiment of that basal cortex-like structure found higher in the vertebrate scale, which is called tuberculum olfactorium. Lying deeper, around the ventro-lateral aspect of the lateral ventricle, is the primordial corpus striatum, the part of the hemisphere which is brought into relationship on the one hand, with afferent fibres from the tuberculum olfactorium, and perhaps with others coming up from the hypothalamus, and, on the other hand, emits projection fibres passing both to the hypothalamus (and lobus inferior) and to the thalamus (ganglion habenulæ). There is a third part representing a primordial pallium lying at the dorsomesial aspect of the hemisphere, where the latter is joined to the epithelial roof of the fore-brain.

In its most primitive form the brain of the vertebrate animal might be compared to a close confederation of States, none of which is absolutely dominant. The cerebral hemisphere is little more than an instrument for the reception and conscious appreciation of smell impressions and a means whereby such impressions may bring their influence to bear on the nervous mechanisms which regulate movements, and so contribute their quota to the forces which control the behaviour of the animal and its reactions to its environment.

The mid-brain is related in an analogous manner to the visual organs, and in the lowliest vertebrates probably exercises a more potent influence than the cerebrum. But even in *Petromyzon* there are numerous connecting links between these different sensoria, which enable the impressions coming from one organ to influence the activities of the receptive apparatus of another sensory mechanism. The higher organisation of the brain is brought about by the extension of all the sensory paths up to the cerebrum and the evolution within the hemisphere of mechanisms for receiving and blending the various impressions of an object, so as to awaken a consciousness of all its properties, as they appeal to the senses of smell, taste, touch, sight, hearing, &c. But the cerebral hemisphere does far more than this—it provides a site far removed from the merely executive parts of the nervous system where these various sensory impressions, or the states of consciousness which they awaken, may be in some way recorded, so that later on new impressions may be influenced, compared, and tested by the results of these foregoing experiences. In other words, the cerebrum attains its dominant position in the hierarchy of the brain mainly because it provides the means for the evolution of an organ of associative memory.

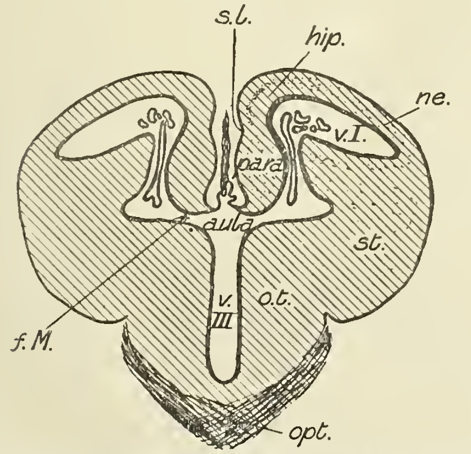
FIG. 14.



The corresponding part of Fig. 9, similarly enlarged to show its identity with the mammalian plan (*fasc.* here is *not* fascia dentata, but a particular fasciculus of the fornix in the paraterminal body).

But it took long ages of experiment before Nature slowly evolved from the primitive *Petromyzon* type of brain this organ of associative memory, which is found in its fully developed form only in mammals.

FIG. 15.

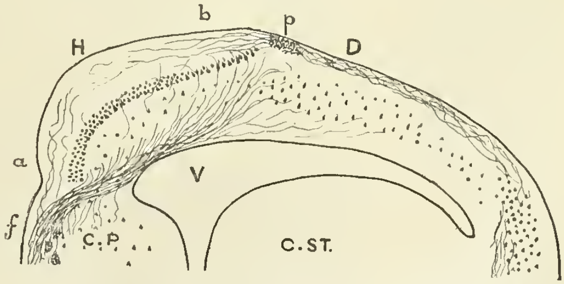


A section cut transversely through the fœtal Tuatara brain in the region of the foramen of Monro (*f. M.*) to show the paraterminal appendage (*para.*) of the hippocampus (*hip.*) which was mistaken for the latter by von Kupffer.

In sketching the present state of our knowledge concerning the origin of this highest type of cerebral hemisphere it is convenient to restrict our studies mainly to the consideration of four selected types: (1) a particular selachian; (2) a dipnoan; (3) a reptile; and thence pass to the lowlier mammals. Without a much larger allowance of time than I have at my disposal, it would simply be adding to the difficulties of the subject to refer to the specialised forms of brain found in most fishes and amphibians. The mud-fishes (dipnoi) are much nearer the main line of amniote evolution than the amphibia and most other fishes, and so far as the special object of these lectures is concerned, i.e., the evolution of the cortex cerebri, the dipnoi exhibit a more highly developed—at any rate, a much more reptilian-like—pallium than we find in any of the amphibia. Birds again present such a highly specialised and diversely-modified cerebrum that they have quite left the path leading to the formation of a neopallium and evolved a mechanism peculiar to their own class, which does much the same kind of work as the neopallium.

If, after examining the cerebral hemisphere in the lamprey, we turn to the elasmobranch fishes a much more definite specialisation into the three parts mentioned in the case of *Petromyzon* will be found. The fish which lends itself best to our purpose is one described by Professor Edinger and Dr. Ariëns-Kappers under the name *Spinax niger*.[11] In a transverse section through the hemisphere of this brain there will be seen upon the dorsal aspect a definite cortex cerebri or pallium forming almost a third of the section. Upon the ventral aspect there is another cortex-like structure—the tuberculum olfactorium—forming almost half of the section; separating this from the cavity of the lateral ventricle there is a thin layer of grey matter representing the primordial corpus striatum.

FIG. 16.



The upper part of a transverse section through the right hemisphere of a reptilian brain. H, The medio-dorsal cortex or hippocampus. D, The dorsal cortex. *f*, Fornix. C.P., Corpus paraterminale. C.ST., Corpus striatum. V, Lateral ventricle.

Thus by an easy step we have passed from the most primitive type of vertebrate brain to one in which a true and definite cerebral cortex or pallium is present. It is an even simpler matter to pass from the condition found in this selachian hemisphere and institute an exact comparison with that of the South American mud-fish *Lepidosiren*.[12]

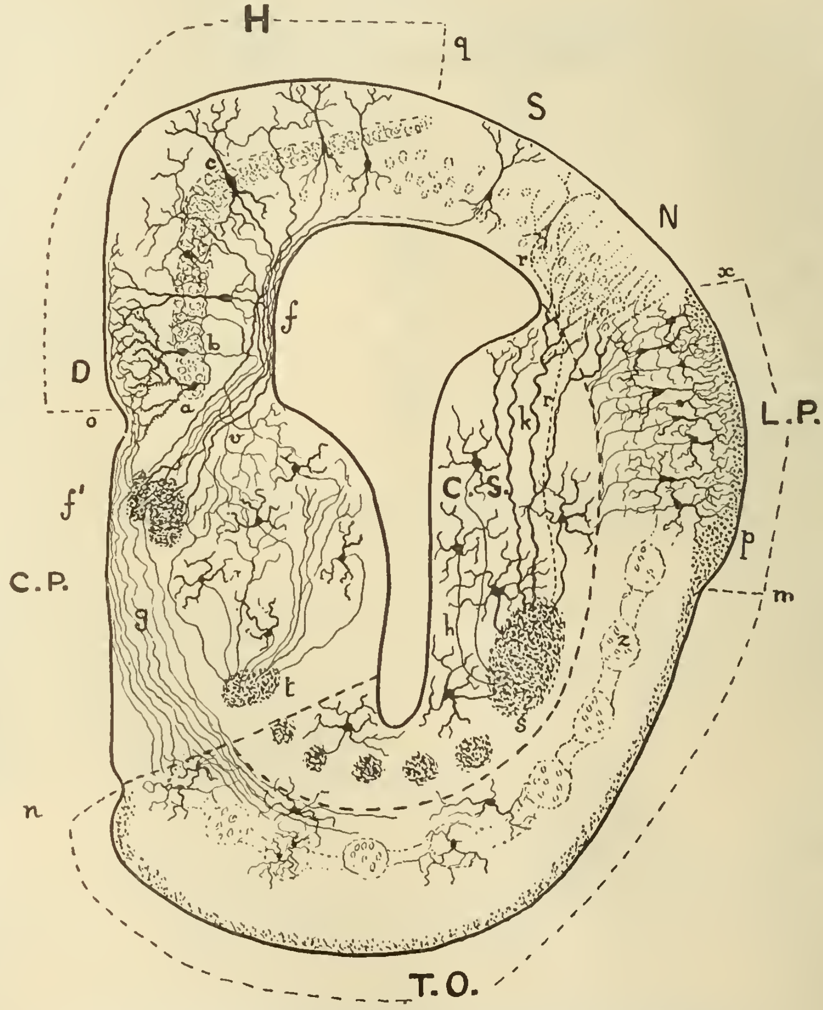
---

[11] See Edinger, Bau der Nervösen Zentralorgane, Band ii, 1908, fig. 265, p. 299.

[12] I have described this in some detail in the Anatomischer Anzeiger, Band xxxiii., 1908, pp. 513-540.

The general scheme of the constitution of the hemisphere in *Lepidosiren* closely resembles that of *Spinax*, but the specialisation of the different parts has been carried to a much higher stage. The pallial formation contains a more compact and regular layer of cortical cells; its lateral extremity shows signs of commencing specialisation to form the rudimentary pyriform lobe (compare Fig. 16, L), into which the fibres of a definite lateral olfactory tract penetrate; and the mesial extremity of the pallial formation is a definite primordium hippocampi (compare Fig. 16, H) with a well-developed system of fornix fibres in relation with it (compare Fig. 16, *f*). The hippocampus and the paraterminal body (compare Fig. 16, C P), which is functionally associated with it, are intimately connected with the lobus inferior (of the hypothalamic region) both by descending and ascending fibres; and it is possible that some of the latter may carry gustatory impulses into the cerebral hemisphere from the lobus inferior, into which (in the case of teleostean fishes) Professor Judson Herrick has traced large tracts carrying impulses upward from the taste nerves inserted into the medulla oblongata.

Fig. 17.



A diagram representing the essential features which a coronal section through the anterior end of the right hemisphere of a hypothetical promammal must have presented. H, The hippocampus. D, Its mesial part in process of specialisation to form the fascia dentata. *a*, Its "dentate cells." *c*, Its "hippocampal cells." *b*, An intermediate type of cell. *f*, *f'*, Fornix. C.P., The corpus paraterminale. T.O., Tuberculum olfactorium. S, The dorsal cortex (compare D in Fig. 16), now become the subiculum hippocampi. L, The lateral cortex of the reptile, now become the lobus pyriformis. N, The earliest rudiment of the neopallium. C.S., The corpus striatum.

In *Lepidosiren* the tuberculum olfactorium becomes so large that it forms more than half the hemisphere, and its cortex is most richly developed. It receives smell impulses direct from the olfactory bulb, and probably exerts an immediate influence upon the corpus striatum, which is so intimately related to it, and through it acts upon the more caudally-placed parts of the brain.

The brain of *Lepidosiren* is sufficiently highly organised to permit us to take the great step upward from the mud fishes to the reptiles without running any risk of sacrificing accuracy in our comparisons.

Compared with the condition of the hemisphere in the mud-fish that of the reptile presents three outstanding features of contrast. The pallial formation has undergone a great increase in size and an even more noteworthy specialisation in structure; the corpus striatum has become very much larger; and the tuberculum olfactorium has become smaller, its cortex especially being much less richly developed than that of *Lepidosiren.*

The higher degree of specialisation of the cortex is largely the result of a perfecting of the smell-mechanism; both the mesial and the lateral parts of the pallium (Fig. 16, H and L) become specialised and set apart from the intermediate (dorsal) cortex (D), and the hippocampal formation itself (H) shows signs of commencing specialisation to form the fascia dentata (*a*) and hippocampus *sensu stricto* (*b*). The fornix system (*f*) has become more highly developed and the paraterminal body (C P) has increased in bulk. In mammals it is a well-known fact that when an animal takes to living in water its olfactory apparatus dwindles until, in some of them which lead a wholly aquatic life (for example, certain whales and porpoises), the smell-organs vanish completely. In the lowlier vertebrates, however, the olfactory organs seem to be able to perform their functions in water; nevertheless, even in such animals they would probably become capable of a wider sphere of usefulness if the animal were to leave the water and take to dry land. Thus it is that in the reptiles, the lowliest class of vertebrates adapted for leading a wholly terrestrial existence, the sense of smell takes on an enhanced importance and the olfactory part of the brain—the cerebral hemisphere—shows a marked advance in size and degree of specialisation.

In the reptilian brain the mass of fibres connecting the corpus striatum to the thalamic and other regions of the brain shows a noteworthy increase in bulk. Amongst these fibres, which form a projection system analogous to that of the internal capsule in mammals, there are also present large numbers of ascending fibres, which are coming up from the region of the thalamus to terminate in the cerebral hemisphere. These fibres are of the utmost importance in the study of the history of the developing cortex. Our knowledge of them is as yet very imperfect and wholly inadequate for our purposes; yet, scanty as it is, its significance is very great. The histological researches of Ramon y Cajal have familiarised us with the endings of this system of fibres; but most of our knowledge of the nature of these tracts has been supplied by the important comparative and experimental researches of Edinger, Wallenberg, Gordon Holmes, and Ariëns-Kappers.

It is well known that birds possess very large and highly developed cerebral hemispheres, in spite of the fact that in many of them the sense of smell is of little consequence and the olfactory apparatus is very much reduced in size. It is obvious that the greatness of the hemisphere must be due to the admission into it of the paths coming from some other sense organs. Visual impulses certainly make their way into the bird's cerebrum; and Edinger, Wallenberg, and Holmes have demonstrated the presence of large tracts carrying to the hemisphere impulses collected by the trigeminal nerve, probably from the beak, the tongue, and other oral tactile areas.

In reptiles, which Huxley long ago showed to be nearly allied to birds, the thalamic nucleus in which the trigeminal lemniscus terminates is also largely developed; tracts pass from it into the corpus striatum; it is thus practically certain that a considerable proportion of the fibres which may be seen in the corpus striatum of any reptile, streaming up towards its dorsal surface, are the paths by means of which sensory impressions are being poured into the hemisphere.

It is well known that many reptiles use their tongues as tactile organs and test their food by associating impressions of smell and touch. It is also more probable than not that visual impressions can make their way into the reptile's hemisphere, but as yet the evidence is not altogether conclusive; and of the auditory paths even less is known.

It is probable that the enhanced importance of the sense of smell in reptiles, which followed upon their adoption of terrestrial habits, added to the functional value of the cerebral hemisphere, which had hitherto been an essentially olfactory organ; into relationship with these structures, which are concerned with the consciousness of smell and taste, it was natural that there should be brought the fibre-tracts conveying impressions from the tactile organs of the mouth, which stand in such intimate functional relationship with those senses. Thus the hemisphere in the reptile became a place of blending of the consciousness of the smell, taste, touch, and perhaps sight also, of objects which stimulated the organs of these various senses.

The admission of these new sensory paths into the hemisphere produced very marked effects, which are of very great significance, though they must be regarded merely as premonitory signs of the much vaster and far-reaching effects of the extension of the same process which characterise the birth of the mammalia and the evolution of that essentially mammalian organ—the neopallium.

The sensory fibres newly admitted to the hemisphere make their way to the dorsal aspect of the corpus striatum, and, as the immediate effect, the cortex in the neighbourhood takes on a sudden and rapid growth. This leads to great confusion in the structure of the hemisphere at the pallio-striate junction, the exact details of which have not yet been properly elucidated. There is, however, no structure to which the designation "neopallium" can be properly applied, even though we recognise that the disturbance produced is a sign of the first stage of the labour attending the birth of the new pallium.

One curious manifestation of these disturbing influences is seen in the ingrowth (towards the lateral ventricle) of part of the overgrown pallium, forming a structure, to which Edinger gave the name "epistriatum."[13] The epistriatum is not part of the striate body but is cortical in nature. Moreover, it is not a morphological subdivision of the hemisphere which can be identified in other groups of vertebrates, as many anatomists believe; it is merely a peculiar adaptation of structure to meet the conditions special to the reptile—namely, the disturbing influence of the recent admission of tactile impressions to the hemisphere.

Very great confusion has been introduced into the literature of brain anatomy through the failure to recognise that the conditions which have called this epistriatum into being are peculiar to reptiles, and that it is futile to search for any exact homologue of that body in other vertebrates. "Epistriatum" is a term which can be employed without confusion only in reference to the reptilian brain.

I have now sketched the main phases of the progressive development of the cerebral cortex in the vertebrate series until we have seen the premonitory signs of the crowning achievement of the process—the appearance of the ultimate product of the evolution of the animal fabric, the neopallium, which is the "organ of mind."

For the purpose of focussing the light which the study of the lowlier vertebrate types of brain has shed upon the nature of the mammalian cortex I have constructed a diagram (Fig. 17) to represent the essential features which the cerebral hemisphere of the reptilian-like ancestor of the mammalia must have exhibited. No living reptile is in the direct line of mammalian descent, so that the detailed comparison of the brain of any one reptile with that of a mammal is liable to lead to error. But if we take those features common to all reptilian brains and make a diagram representing a phase intermediate between that common denominator and the state of affairs found in the most generalised marsupials we arrive at what we may truly call the "promammalian" type of hemisphere represented in Fig. 17. It exhibits the essential relations of the two fundamentally distinct cortical areas—the basal or tuberculum olfactorium (T. O.) and the true cortex or pallium (D, H, S, L). The latter is differentiated into hippocampus (H), subiculum hippocampi (S), and lobus pyriformis (L); and between the latter two the newly differentiated "neopallium" (N) is seen in its earliest phase. The paraterminal body (C. P.) is the ganglion of the hippocampal cortex and is related to its fibre-systems (*f*, *f′*, *g*, and *t*) in a manner closely analogous to that of the corpus striatum (C. S.) to the fibre-systems of the neopallium and pyriform lobe (*k*, *r*, *h*, and *s*).

A Clinical Lecture

ON

CONGENITAL FAMILY CHOLÆMIA, OR RECURRENT FAMILIAL JAUNDICE.

Delivered on Dec. 2nd, 1909,

BY F. J. POYNTON, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO OUT-PATIENTS AT THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET, LONDON; ASSISTANT PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

LADIES AND GENTLEMEN,—One of the most interesting and least common of all diseases occurring in childhood has been termed congenital family cholæmia, or familial recurrent periodic jaundice. It is a condition not peculiar to childhood, for these patients may live to grow up and may marry and have families, some members of which may in turn show the same disability.

The great interest of this disease or fault does not lie so much in its rarity or in its hereditary characteristics as in the possible light that it may throw upon diseases of the spleen in their relation to the blood and liver. At the present time we are accumulating a vast number of facts about diseases of the spleen and the blood changes connected with them, and we recognise that in some of these conditions the liver is grossly affected, in others it is not, but the solution of the problem still remains a great mystery. This rare disease seems likely to throw some light upon the subject if we can only collect a sufficient number of cases for observation. Even those I am about to describe will illustrate some points of special interest in this study, and they show some peculiarities which may have been observed before but which have not, I think, been put forward. It is, indeed, almost impossible not to observe some interesting fact if you have a family of this kind under your care for any length of time. The cardinal features of my cases can be described in a few sentences. 1. They have all had jaundice immediately after birth. 2. They have had more than one attack. 3. They all have enlarged spleens and during their attacks enlarged livers also. 4. They are all anæmic and show definite changes in the blood. 5. Lastly, they are all somewhat undersized and delicate.

These three cases were shown at a clinical meeting of the Medical Society of London by Dr. W. L. Scott and myself in the spring and belong to the same family, and we are greatly indebted to Dr. Sidney Martin and Dr. Risien Russell for permission to use some of the notes made while under their care. The history of this family, so far as we could ascertain, is as follows. Their paternal grandmother had several attacks of jaundice and their mother suffers from biliousness. The family itself was 13 in number but 5 are dead. Two died from "consumption," one from "pneumonia," and two died in the first week of life from unknown causes. In accord with all the most characteristic cases on record there is no history of congenital syphilis. The children that are affected are the fifth, a young woman aged about 23 years; the twelfth, a boy aged about 9 years; and the thirteenth, a girl aged 5½ years. The ninth child, a boy of about 13, I examined and found to be unaffected. I will now give a few details of each case.

---

[13] For the most primitive form of epistriatum see the illustrated and descriptive catalogue of this museum, vol. ii., 1902, Figs. 32 and 33, pp. 122 and 123.

CASE 1.—This patient is 23 years of age and she is the eldest of the three whose cases are here recorded. She has had six attacks of jaundice and I have seen one of the worst of them in which the jaundice was intense. Her first attack occurred 14 days after birth, and in 1903 and 1905 there were severe ones. In 1908 there was a mild attack. The chief features of the one which came under my personal observation in 1905 were as follows. 1. A gradual onset with a sudden exacerbation during which there was the development of an intense yellow colour. 2. Paroxysms of abdominal pain, which were more severe at night, and chiefly referred to the splenic area. 3. Considerable enlargement of the liver which extended two fingers' breadth below the costal arch. I want particularly to draw attention to this point because in my experience of this family the liver has enlarged very markedly during attacks of jaundice, the spleen during attacks of anæmia. 4. Marked enlargement of the spleen which extended two fingers' breadth below the left costal margin. 5. Clay-coloured motions. 6. Bile and urobilin in the urine. 7. Absence of pyrexia. In three weeks' time there was recovery and the liver was no longer palpable. At this date the history of the other patients was unknown, and the condition was not recognised. This was also true when she was again admitted to the hospital not for jaundice but for anæmia.

The second admission was in October, 1906. There was then marked anæmia as shown by the blood counts, and with this functional cardiac murmurs, enlarged lymphatic glands in the posterior triangles, and an enlarged spleen. The liver was not palpable and no bile nor urobilin was found in the urine. The patient improved after two months' treatment with arsenic. Since that date she has come to me for paroxysmal abdominal pain, which has gradually passed away, and I then lost sight of her for a period of two years, that is, until shortly after Christmas, 1908, when she had an attack of jaundice lasting three days, which coincided with a severe cold. She now again came to me for increasing anæmia and breathlessness. At this date I once more found the liver enlarged and the spleen bigger than it had been before, but under treatment the liver once more almost regained the normal size. At the present time she is keeping in fair health.

Blood counts.—Oct. 16th, 1906: Red blood corpuscles, 3,000,000 per cubic millimetre; hæmoglobin, 78 per cent.; colour index, 1·1; shape, size, &c., normal; white blood corpuscles, 30,000 per cubic millimetre. Differential count, per cent.: small lymphocytes, 20; large lymphocytes, 6; hyaline, 1; neutrophiles, 68; eosinophiles, 3; transitional, 2. Treatment: Oct. 19th, 21st, 24th, 28th, and 31st, 1, 2, 3, 5, and 6 minims respectively of liquor arsenicalis three times a day; Nov. 1st, omitted.

Nov. 2nd: Red blood corpuscles, 3,500,000 per cubic millimetre; hæmoglobin, 75 per cent.; colour index, 0·95; vacuolation, poikilocytosis, and some anisocytosis; white blood corpuscles, 35,000 per cubic millimetre. Differential count, per cent.: small lymphocytes, 26; large lymphocytes, 20; hyaline, 2; neutrophiles, 50; transitional, 2.

9th: Red blood corpuscles, 3,672,000 per cubic millimetre; hæmoglobin, 56 per cent.; colour index, 0·7; vacuolation, poikilocytosis, some anisocytosis, and a few normoblasts; white blood corpuscles, 13,576 per cubic millimetre. Differential count, per cent.: small lymphocytes, 28·9; large lymphocytes, 10·2; neutrophiles, 53·3; transitional, 4; oxyphiles, 3·5. Treatment: Nov. 10th, 12th, 15th, and 19th, 2, 3, 4, and 5 minims respectively of liquor arsenicalis three times a day; Nov. 21st, omitted.

16th: Red blood corpuscles, 2,982,000 per cubic millimetre; hæmoglobin, 64 per cent.; colour index, 0·97; shape, size, &c., same as on preceding day; white blood corpuscles, 13,575 per cubic millimetre. Differential count, per cent.: small lymphocytes, 12·6; large lymphocytes, 42·3; neutrophiles, 36; transitional, 3·6; eosinophiles, 4·5.

23rd: Red blood corpuscles, 3,160,000 per cubic millimetre; hæmoglobin, 66 per cent.; colour index, 0·9; shape, size, &c., same as on preceding day; white blood corpuscles, 19,000 per cubic millimetre. Differential count, per cent.: small lymphocytes, 20·9; large lymphocytes, 34·4; neutrophiles, 40·5; hyaline, 2·1; oxyphiles, 2·5. Treatment: Nov. 28th and Dec. 1st and 4th, 2, 3, and 4 minims respectively of liquor arsenicalis three times a day: 9th, omitted.

30th: Red blood corpuscles, 3,672,000 per cubic millimetre; hæmoglobin, 60 per cent.; colour index, 0·8; shape, size, &c., same as on preceding day; white blood corpuscles, 23,700 per cubic millimetre. Differential count, per cent.: small lymphocytes, 23·1; large lymphocytes, 32·4; neutrophiles, 40·6; transitional, 1·6; eosinophiles, 2·7.

March 15th, 1909: Red blood corpuscles, 3,230,000; hæmoglobin, 73 per cent.; colour index, 1; vacuolation, poikilocytosis, anisocytosis, polychromatophilia, increase in average size; white blood corpuscles, 14,200 per cubic millimetre. Differential count, per cent.: small lymphocytes, 21·2; large lymphocytes, 12·6; hyaline, 3·7; neutrophiles, 55·5; eosinophiles, 3; transitional, 3·7; neutrophile myelocytes, 0·3.

CASE 2.—The patient was jaundiced when three weeks old, and was subject to occasional attacks of diarrhœa. In 1903 he was admitted, under Dr. Risien Russell, to University College Hospital for intense jaundice, which had been preceded by an attack of diarrhœa with dark motions. This attack was marked by the following symptoms in addition to the jaundice: (1) much enlargement of the liver, which reached to the umbilicus, and the presence of bile in the urine; (2) an enlarged and hard spleen; and (3) some bronchitis. Later there was the development of high fever, rising at night to 103° and 104° F., and coincident with this the development of a rapid anæmia, as shown by the blood counts. After six weeks' illness the child left the hospital anæmic but not jaundiced, with an enlarged liver and spleen. At this time the nature of the condition was unknown.

In 1906 the patient came to me with an increase in the anæmia, and more blood counts were made. At that time both the liver and spleen were enlarged.

In March, 1909, the blood was again thoroughly examined by Mr. Dennis Embleton, assistant in the pathological department of University College Hospital. In December the patient was certainly in better health than previously, and was the strongest looking of the three.

Blood counts.—Nov. 23rd, 1903: Red blood corpuscles, 1,904,000 per cubic millimetre; hæmoglobin, 0·46 per cent.; colour index, 1·1; white blood corpuscles, 28,280 per cubic millimetre. Differential count, per cent.: large lymphocytes, 4·9; small lymphocytes, 48·3; hyaline, 0·4; neutrophiles, 44·3; oxyphiles, 1·2; basophiles, 0·8; a few neutrophile myelocytes seen.

Dec. 10th: Red blood corpuscles, 2,084,000 per cubic millimetre; hæmoglobin, 0·36 per cent.; some chromoblasts; white blood corpuscles, 13,126 per cubic millimetre. Differential count, per cent.: large lymphocytes, 10; small lymphocytes, 41; neutrophiles, 37; hyaline, 10; basophiles, 2; some myelocytes.

August, 1906: Red blood corpuscles, 1,720,000 per cubic millimetre; hæmoglobin, 28 per cent.; colour index, 0·81; white blood corpuscles, 13,700 per cubic millimetre. Differential count, per cent.: small lymphocytes, 12·6; large lymphocytes, 8·6; neutrophiles, 75·3; transitional, 1·3; oxyphiles, 2·0.

March, 1909: Red blood corpuscles, 4,010,000 per cubic millimetre; hæmoglobin, 60 per cent.; colour index, 0·75; white blood corpuscles, 28,850 per cubic millimetre. Differential count, per cent.: small lymphocytes, 5·1; large lymphocytes, 24·2; hyaline, 6·8; neutrophiles, 57·4; basophiles, 1·0; transitional, 3·0; neutrophile myelocytes, 1·7. Average size of red cell increased.

CASE 3.—This patient, the youngest sister, was jaundiced 14 days after birth, and at 18 months the stools were noticed to be clay-coloured and since infancy to be frequently pale. She came to University College Hospital in 1906 for anæmia, vomiting, drowsiness, and constipation. It was then discovered that both the liver and spleen were enlarged and that the lymphatic glands in the posterior triangles, axillæ, and groins were also slightly enlarged. There was irregular fever rising to 103° F. and subsiding by lysis. The blood counts show the nature of the anæmia and hæmic cardiac murmurs were present. On one occasion early in the illness bile was noticed in the urine. After three weeks the child left the hospital, still anæmic and with an enlarged liver and spleen.

In January, 1909, she had a mild attack of jaundice, followed by marked anæmia, and in March I found the spleen considerably larger, reaching almost to the crest of ilium. She, like her sister (Case 1), suffers from occasional abdominal pain.

During this year her spleen has certainly increased in size, and she bears in appearance a close resemblance to her elder sister.

Blood counts.—August 16th, 1906: Red blood corpuscles, 2,612,000 per cubic millimetre; hæmoglobin not estimated; white blood corpuscles, 18,855 per cubic millimetre. Differential count, per cent.: small lymphocytes, 4·6; large lymphocytes, 37·3; neutrophiles, 47·0; eosinophiles, 4·3; myelocytes, 5·3; basophiles, 1·0; poikilocytosis, anisocytosis, vacuolation, polychromatophilia, some nucleated red cells.

August 23rd: Red blood corpuscles, 2,200,000 per cubic millimetre; hæmoglobin, 62 per cent.; colour index, 1·18; white blood corpuscles, 11,700 per cubic millimetre. Differential count, per cent.: small lymphocytes, 39·6; large lymphocytes, 4·3; neutrophiles, 46·6; eosinophiles, 4·3; myelocytes, 2·6; basophiles, 1·6; transitional, 1·3; poikilocytosis, anisocytosis, vacuolation, nucleated red cells. (N.B.—A small proportion of "myelocytes" might be regarded as hyaline or transitional.)

March, 1909: Red blood corpuscles, 3,285,000 per cubic millimetre; hæmoglobin, 60 per cent.; colour index, 0·8; white blood corpuscles, 24,100. Differential count, per cent.: small lymphocytes, 27·0; large lymphocytes, 7·6; hyaline, 3·0; neutrophiles, 58·0; oxyphiles, 2·0; polynuclear mixed granules, 2·0; transitional, 0·6; myelocytes, poikilocytosis, vacuolation ghosts.

These three cases illustrate some of the salient features of congenital family cholæmia, but to get a complete clinical picture it would be necessary to see them in an attack of jaundice. In fact, at the present time the name given to the condition does not really express the exact state of affairs, which is more accurately termed, so far as these patients are concerned, a recurrent jaundice congenital in origin and associated with blood changes and an enlarged spleen.

Mr. Embleton has added some valuable details of the blood examinations, the importance of which I can best emphasise by alluding to some of the literature upon the subject. First of all, I would refer to a very helpful article by Dr. H. P. Hawkins and Mr. L. S. Dudgeon.[1] These authors publish four cases having a general resemblance to these patients, but differing in some respects. Thus, for example, their first case, a policeman, aged 27 years, always showed a markedly yellow colour, but my cases are pale rather than yellow, although at the time of their attacks of jaundice they become extremely yellow. Dr. Claude Wilson's cases, published in 1890 in the Transactions of the Clinical Society, resembled this family in the lesser degree of jaundice that was present. Cowan's two cases are also described as pale or yellowish. In Pollak's case, on the other hand, the patient was almost always yellow. Sir Thomas Barlow and Dr. H. Batty Shaw's case, that of a young man, aged 19½ years, gave a history of pallor for the first five years, and after this of a varying jaundice. It will be clear that these cases are very interesting because they have periodic attacks of jaundice, and therefore seem to hold out opportunities of discovering the relationship to one another of the three cardinal features of the condition—the jaundice, splenic enlargement, and blood disturbances.

Naturally one first looks for post-mortem evidence as likely to be helpful, and so no doubt it would be, but at present the records are scanty. Minkowsky records one in a family of eight all afflicted in this way, death occurring from double pneumonia. There had been in this case chronic jaundice with urobilinuria and an enlarged spleen, but no macroscopical or histological lesions were found in the liver. There was an excess of hæmofuscin in the liver and a pigment calculus in the gall-bladder. I would emphasise that he comments upon the absence of angiocholitis. Claude Wilson mentions another case in the family which he traced over four generations. This patient died from acute jaundice during pregnancy. The liver showed no apparent connective tissue changes.

It is noteworthy that in my cases the liver enlarged rapidly during the attacks of jaundice, but diminished in size with rapidity afterwards. Again, in all three the liver has been less completely enlarged than the spleen. Hawkins and Dudgeon also point out that enlargement of the liver is not common, but the enlargement of the spleen is a constant feature.

The balance of clinical and post-mortem evidence appears to me to suggest the view that whatever may be the original fault in this condition the liver itself only takes a secondary position in the train of symptoms and comes into prominence when there is an acute strain thrown upon it by some faulty mechanism which is the determining factor in the illness. I emphasise these points about the condition of the liver because it has been held that the first error may be an angiocholitis, itself the result of some infection from the intestines. Further, there are various kinds of congenital jaundice, in some of which it is apparent that the biliary system is primarily at fault. For example, there are the cases described by Dr. John Thomson of congenital jaundice of a familial type, which may prove rapidly fatal and cause the deaths of several children in one family. Some of these cases of minor severity may live for years, and in such the liver is enlarged, and the gall-bladder distended; there is acholia, and secondary biliary cirrhosis supervenes, but there is no great enlargement of the spleen. It would seem, then, that this is a different class of case from those under consideration, which are sometimes termed in contradistinction the Minkowski type. Gilbert and Lereboullet, however, would group both into a large family of congenital angiocholitis, but for the reasons given above and for further reasons with which I shall next deal I incline to the view that these two types are of a different nature.

It is to the condition of the blood that we must now turn for some more information. Some of the details have already been given with the account of the illnesses. There remain now some special points.

Mr. Embleton investigated these cases in the quiescent stage, by which I mean when there was neither an outbreak of jaundice nor an obviously increasing anæmia, and I will give the gist of his summary. 1. All the cases showed a certain degree of anæmia, though in each case the colour index was good. The red cells showed marked poikilo- and anisocytosis with polychromatophilia. Macrocytes predominated over microcytes. There were nucleated red cells. 2. Instead of a leucopenia there was in all cases a leucocytosis, the increase chiefly affecting the mononuclear cells. Myelocytes were present in two out of the three cases. 3. The serum had no hæmolytic power. 4. The red corpuscles were unusually fragile as tested *in vitro*. 5. There was no increase in the agglutinating power of the sera and no phagocytosis of red corpuscles. 6. There was no bile pigment in the serum of any of the cases, but the serum was darker in colour than the normal.

These investigations follow the lines laid down by Chauffard, Gilbert, and Lereboullet, and Hawkins and Dudgeon, and support some of their observations. Thus, the anæmia, the alterations in the red cells, and leucocytosis, with the presence of myelocytes, are in accord. So also are the observations on the fragility of the red corpuscles and the failure to detect any hæmolytic power in the serum.

On the other hand, the failure to find any specific agglutinating power in the serum—though in agreement with the recent experience of R. Hutchison and P. N. Panton—differs from the results obtained by Hawkins and Dudgeon. I think we must say at present that such an agglutinating power as described by these observers is not always present.

The failure to find bile pigment in the serum is not in accord with several other investigations upon this question, and in explanation of the failure it may be suggested that at the time of the investigation there was no evidence of jaundice in the skin, mucous membrane, or the urine. The sera were darker, however, than usual. Up to the present time no opportunity has occurred for examination when there has been any visible jaundice.

There is clearly no doubt that the blood is much altered in this condition of congenital family cholæmia, and the question arises whether it is a result of the jaundice. This, however, seems unlikely, seeing that in my cases there was no jaundice at the time of examination, and that in conditions other than congenital family cholæmia, in which there is persistent jaundice, such alterations in the blood do not result. It appears more probable then that the fragility of the red corpuscles may be *a cause* of the jaundice, for experimental hæmolysis, it may be remarked, provokes biliary reaction and the secretion of a very coloured viscous, thick bile. Further, Lisné and Ravant state that hæmolysis produced by injecting distilled water into the veins of rabbits produces in small doses urobilinuria, in larger doses urobilinuria and choluria, in larger still hæmoglobinuria. If the jaundice is dependent upon the blood condition then it would appear that a certain degree of severity of blood destruction is required to produce it, for in cases such as these jaundice only appears in the paroxysms of illness.

I incline, for the various reasons given above, to the conclusion as stated by Minkowski, Chauffard, Hawkins, and Dudgeon that the primary change in this disease lies *in the blood-forming*, and not the biliary, system, and I think these cases bring some additional evidence in its favour. I incline to this conclusion in spite of the warning of Hayem that stress should not be laid upon the observations made on the fragility of red corpuscles *in vitro*. These experiments which have been made in my cases with 0·1 to 1·0 solution of sodium chloride will be found detailed by Chauffard, and Hawkins and Dudgeon, and by Embleton in his appendix to Scott's and my own cases in the present volume of the Medical Society's Transactions. It seems to me, also, that Hawkins and Dudgeon's second conclusion is the probable one—viz., that we are dealing with a congenital familial defect rather than an acquired disease.

I have now briefly considered the condition of the liver and blood, and there are left the problems connected with the spleen. Unfortunately the splenic functions are so little understood that we are at once involved in difficulties which are at present insoluble. I have already remarked that the splenic enlargement has been a constant in these three cases, and has always been more striking than the hepatic enlargement. There is also, I think, a tendency for the spleen to become firmer with advancing years. Does the disordered spleen produce the blood condition or the disordered blood conditions produce the splenic enlargement? Minkowski describes a case in which the spleen was enlarged at birth, pointing to pre-natal affection of that organ, and I am not aware of any case on record in which the spleen was at first thought to be normal in size and later was observed as enlarging; in all cases it has been found enlarged at the first examination. It is clear, then, that the disturbance of the spleen, whether primary or secondary, occurs very early indeed. Whether any observations on the most recent lines have been made on the blood at birth I do not know, but they would clearly be of interest from the point of view of the priority of the two lesions, the splenic and hæmic. With my very limited experience I would not venture to locate the exact seat of the lesions, but I picture it to be in the blood-forming organs rather than in the blood itself or spleen only, the chain of events being: (1) a congenital fault in the blood-forming organs; (2) as a consequence a faulty blood formation; and (3) as a consequence of this a disordered liver.

---

[1] Quarterly Journal of Medicine, vol. ii., No. 6, p. 165, January, 1909.

Two well-known conditions may receive consideration in connexion with congenital family cholæmia: (1) paroxysmal hæmoglobinuria, and (2) splenic anæmia of infants.

The occurrence in "congenital family cholæmia" of fragility of the red blood corpuscles at once suggests a relationship to paroxysmal hæmoglobinuria, and there are other interesting points of resemblance. For example, these patients feel the cold very much and are not so well in the cold seasons. Thus the eldest (Case 1) had a severe attack of jaundice in March, 1905. She broke down again in October, 1906, and again from December to March, 1909. The boy (Case 2) had an attack of jaundice in November, 1908, and again in January to March, 1909. Bettmann observed attacks of hæmoglobinuria in one of his cases when exposed to direct cold; and Claude Wilson noted in two of his cases, both of them children, that they became the colour of daffodils if they had a cold bath, this again pointing to the probable influence of cold upon the red corpuscles. On the other hand, in paroxysmal hæmoglobinuria the spleen may become large and hard during the paroxysm, and to a lesser degree and more rarely the liver may become enlarged, thus showing the implication of these two organs. G. H. K. Macalister, in a valuable article on paroxysmal hæmoglobinuria,[2] emphasizes that disturbance of the liver during the paroxysm may show itself in diarrhœa, bilious vomiting, or even slight jaundice. During the paroxysms, again, there are marked changes in the red blood cells; the numbers rapidly diminish, they are altered in shape and size, and many lose much of their hæmoglobin. There is also some increase in the number of leucocytes during the attacks, and the blood serum shows an excess of lutein the day after the attack.

There are certainly interesting resemblances in the nature of these two diseases; but, on the other hand, there is apparently an essential difference in the blood conditions. Eason and Macalister have both demonstrated the presence of a specific hæmolysin in the blood in hæmoglobinuria, but attempts to demonstrate such a hæmolysin in congenital family cholæmia have so far failed. Dudgeon, Embleton, and Painton have each reported the absence of any such specific hæmolysin. How real this apparently essential difference may be I presume only further experience can determine. Then, again, it would seem difficult to explain why hæmoglobinuria has been so exceptional an occurrence in congenital family cholæmia if the two are, as it were, different phases of one disturbance. Yet we must remember that experimental investigation has shown that when hæmoglobin is set free in the blood and the condition of hæmoglobinæmia established the urine does not show changes unless that degree of hæmoglobinæmia is high; for it would appear that the liver has great power in dealing with moderate degrees of hæmoglobinæmia. Camus, indeed, calculates that a destruction of one-fifty-seventh of the total hæmoglobin in the body may take place before any hæmoglobinuria ensues. The exceptional occurrence of hæmoglobinuria in this disease may not then after all be so inexplicable as appears at first sight.

It is tempting to hypothesise that in congenital family cholæmia the fragility of the red blood corpuscles leads under slight provocation to a moderate degree of cell destruction and cell waste. This destruction is subacute in severity and sufficiently obstinate to produce anæmia and to test to the full the powers of the liver, yet not sufficient, except in very rare examples, to allow of the presence of hæmoglobinuria. The absence of any specific hæmolysin even in small quantities in congenital family cholæmia would, however, under such an hypothesis be difficult to understand; and if one is surprised at the rarity of hæmoglobinuria in the disease one must under this hypothesis be also surprised that jaundice is not more frequent in paroxysmal hæmoglobinuria. A comparison of these two diseases is, nevertheless, interesting, and helps, I think, to bring home what a fascinating problem is that of the inter-relation of the spleen, liver, and blood.

In conclusion, if one of these cases had been under observation in the first year of life, when not in the jaundiced state, the infant would have presented an enlarged spleen, possibly an enlarged liver, and an anæmia. The blood count would probably have shown some two to three millions of red cells per cubic millimetre. Poikilocytosis would have been present, macrocytes predominating over microcytes. There would have been nucleated blood cells. The colour index would have been fair and the leucocytes increased, the increase chiefly affecting the mononuclear cells. Probably myelocytes would have been found. There would then have been considerable difficulty in distinguishing the condition from the splenic anæmia of infancy.

I am not aware of any extensive observations upon the fragility of the red blood corpuscles in splenic anæmia infantum to put beside the investigations in congenital family cholæmia. In any case from the point of view of an ordinary clinical diagnosis it is clear that there is a marked superficial resemblance between the two conditions. In arriving at the differential diagnosis stress would be laid on the hereditary and familial characteristics of congenital family cholæmia, and above all on the occurrence of paroxysms of jaundice. On the other hand, importance must be attached to the large size of the spleen and low colour index in splenic anæmia infantum. It must also be remembered that splenic anæmia infantum, although at the present time fitted into a compartment of its own for teaching purposes, is in reality but little understood, and for this reason it may be well thought over in relation to congenital family cholæmia. Even if they are totally different in nature such a comparison may help us to escape from the thraldom of diagnoses founded upon blood examinations which probably only hint at the true meaning of the various diseases with which they are connected.

Harley-place, W.

PHTHISIS IN CHILDREN.

By CLIVE RIVIERE, M.D. Lond., F.R.C.P. Lond.,

PHYSICIAN TO OUT-PATIENTS, CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK, E.; ASSISTANT PHYSICIAN, EAST LONDON CHILDREN'S HOSPITAL, SHADWELL, E.

So much diversity of opinion appears to exist as to the prevalence of phthisis in school children that I have thought it worth while to review the facts, for my own and perhaps others' edification, in the light of an experience derived from many years' work in the out-patient departments of both a "chest" and a children's hospital, in addition to some acquaintance with the work in the London County Council schools.

It is obvious that the discrepancy of views arises partly from a want of agreement as to what constitutes "phthisis" in children. By some the word is used in its proper sense to denote a chronic pulmonary tuberculosis of a type similar to that found in the adult, but by others it is used, quite wrongly, to cover all cases of tuberculosis of the lungs. However misleading the term "phthisis" was in the past, especially in the days before the discovery of the tubercle bacillus, however objectionable its derivation, there is no doubt that for many years the word has stood to denote a very definite entity, and it should now be used in this sense and in this alone.

The term "pulmonary tuberculosis" may have quite other signification; I am sure it is much better never to use this term when phthisis is meant, since it is obvious that, used without qualification, it includes all forms of tubercular disease in the lungs. In the adult, to be sure, it generally stands for phthisis, but in children this is very far from being the case. Phthisis, as I hope to show, is an uncommon disease of childhood, but no one will deny that other forms of pulmonary tuberculosis in children are, at certain ages, exceedingly common.

---

[2] Quarterly Journal of Medicine, vol. ii., No. 8.

Some will be disposed to feel that this is perhaps a distinction without a difference, or that the difference is merely one of pathological significance, but this is not so. The disease for which the term phthisis stands is by its course, symptoms, signs, and prognosis still more distinctive to the clinician than to the morbid anatomist. What are some of its special aspects in childhood I shall attempt to indicate at a later stage of this paper.

At the outset may I bring to your notice certain facts derived from the Registrar-General's reports dealing with the incidence of tuberculosis in general? The following table shows the mortality (per 1,000,000 living at the ages stated) for different age-periods during the years 1903–07 in London:—

All Forms of Tuberculosis.

Under 5 years.	5–	20–	40–	60–	80 upwards.
3788	766	1970	3313	2313	977

From this table it appears certain that (neglecting the type of infection altogether) the mortality from tuberculosis as a whole is far lower at school age than at any other period. This is even more so than appears, since the figures covering the school age (5 to 14) include also cases up to the age of 20 years, when phthisis begins to be common, but this is perhaps an advantage, since it cannot be denied that this mortality table covers most of those cases of phthisis which are stated by some to be so common in the schools. It must be admitted, then, that, deplorable as the mortality is at any age, at any rate the school child is marvellously free from fatal tuberculosis, and there is but little excuse for the cries of the alarmist. What is really serious and distressing is the enormous and partly avoidable death-toll below the age of 5 years which the above table so clearly demonstrates. Perhaps the relative immunity of later childhood is due to some extent to the early mortality which quickly removes the predisposed.

Our conceptions of pulmonary tuberculosis have been somewhat modified of late by the discoveries of Calmette, Guérin, and Breton, confirmed on other lines by Vansteenberghe, Grysez, and others, but still denied by some observers. These experiments seem to show that the common channel of infection in pulmonary tuberculosis of animals is not the air channels, as was formerly held, but the intestinal mucosa. In young animals it is found that the bacilli (or other particulate matter) are caught in the intestinal wall or mesenteric glands, but in adult animals they pass through these to the thoracic duct, and so by the blood-stream to the lungs. These discoveries accord well with our knowledge of tuberculosis in the human and, though we need not reject altogether the old theory of infection through the air-tubes, it seems certain that the dust-borne bacillus is given a very important second chance when, by swallowing, it is carried into the alimentary canal. The following brief summary expresses what appears to happen at different ages:—

I. *In early childhood.*—The bacilli are mechanically arrested in the mesenteric glands after passage through the intestinal wall and set up a tubercular adenitis. At the same time a few escape farther by the thoracic duct to the lungs and start a localised focus there. This is often found as an old, wedge-shaped, caseous mass in the lower parts of a lung in cases of tuberculosis of children where the thoracic glands show extensive disease. From this localised lung lesion the bronchial and tracheal glands are supplied with constant doses of tubercle bacilli, and rapidly enlarge and caseate. On this account the disease in them appears older than in the mesenteric glands when in fact the greater amount of caseation is probably due to the larger doses of tubercle bacilli supplied to them. When the mediastinal glands are caseous and the lymph channels blocked, the lymphatic stream may be reversed, and the disease spread from the glandular focus once more into the lung. In cases, comparatively few, where the mediastinal glands alone are affected, we may fairly suppose that the infection has entered through the bronchial mucous membrane.

II. *In later childhood* (in what may be described as the "school age") fatal tubercular disease is altogether less frequent, as is proved by the figures already quoted. Probably the most susceptible have already fallen victims to it. The intestinal lymphoid tissue and the mesenteric glands still arrest the bacilli, but are probably more able to deal with them. Nevertheless abdominal tuberculosis in various forms occurs in the earlier school years, and intestinal ulceration is common, whether secondary or primary, in cases dying from phthisis. The few bacilli which escape the glandular structures are carried to the lungs, but no longer set up a localised basal patch but the apical infection which leads to phthisis. This fact is due, I would suggest, to the gradually diminishing function of the apex of the lung which occurs as the respiratory movements assume the adult type. It was pointed out by Dr. Arthur Keith that the immediate apex is aerated solely by movements of the diaphragm, and in adults temporary collapse at this point can often be demonstrated and must surely predispose to tubercular infection. With growing age the diaphragm functions less and less in respiration, and hence apical tuberculosis becomes more and more common, the incidence falling especially on girls in whom the respiratory change is most early and striking. Hence the bacilli which escape the still mechanically active lymphoid structures lead to phthisis, but being scanty in numbers the disease is often extremely curable.

III. *From puberty up to adult life* the lymphatic glands gradually gain their adult structure, and arrest less and less the tubercle bacilli entering by the intestinal canal. Soon the whole brunt of the invasion falls on the lung, and as early adult age is reached phthisis becomes both a common and fatal disease. As years advance the lung tissues offer more resistance, and the prognosis becomes better and better. I offer this as a sketch of what our present knowledge appears to show as taking place at different age periods.

To turn to the *clinical aspects* of tuberculosis at these different periods we will but touch on the conditions in early childhood before turning to the subject of this paper—that of phthisis during school-age. Up to the age of five years or so pulmonary tuberculosis is nearly always an acute disease, either part of a general tuberculosis or a tubercular bronchopneumonia. The few more chronic cases are mostly those of tuberculosis of tracheal and bronchial glands with secondary lung infection, and these often become acute and generalised in their later stages. Phthisis, simulating the disease in the adult, is only a pathological curiosity.

By the time the *school age* is reached the more acute and fatal forms of early childhood are mostly left behind. In what forms, then, may pulmonary tuberculosis show itself in the school, and how can it be recognised? There are two forms in which it is likely to occur: (1) As a secondary spread to the lung from caseous tracheal and bronchial glands; and (2) as phthisis.

1. Among cases of the first group one of two things must happen.

(*a*) The disease will *spread*, in which case a condition of serious illness incompatible with school attendance is quickly brought about. These cases, in my experience of "chest" and children's hospitals, are even less common than phthisis.

(*b*) The lung tubercles are few and curable, and the case remains one of *tuberculosis of thoracic glands*. This is the real *bête noire* of the school doctor.

I think there is no doubt that a large percentage of school children suffer with tuberculosis of thoracic glands, but this can be but seldom diagnosed, though it may be often suspected. It is probable also that in a proportion of these there is a limited spread into the lungs; but that recovery both from this and the glandular disease generally occurs with no more definite signs than pallor and malnutrition being clinically evident is certain.

There is but one source from which any valuable evidence as to the occurrence of unsuspected glandular tuberculosis in children can be obtained, and that is the post-mortem records of *children picked off in full health* by some acute disease. Such records are, fortunately, obtainable (though none for this country), but as nearly all the cases were those fatal through diphtheria, it is obvious that the children were mostly below the age of five years, and many would probably have died from tuberculosis before the school years were reached. On the other hand, by increase of age the chances of picking up tubercle increase, so the following figures can hardly err by excess if we apply them to school children in general. I would here deprecate attempts to compare *ordinary* post-mortem statistics of tubercle with conditions obtaining during life. It is obviously absurd to apply the percentage of tuberculosis found in children dying from chronic disease, including tubercle, to living children found in the schools.

—	Councilman (Boston).	Baginsky (Berlin).	Heller (Kiel).	Hamburgher (Vienna.)	Ganghofer (Prague).
Number of necropsies ...	220	806	714	150	972
Number tubercular	35	144	140	32	252
Percentage tubercular ...	16%	18%	20%	21%	25·9%

Where details have been given it appears that in nearly all these cases tubercular thoracic glands were present (and often tubercular mesenteric glands also), and in about one-third of these some spread to the lungs was found. Apical lung disease was discovered in 0·5 per cent. (Ganghofer) and 0·66 per cent. (Hamburgher) among the available figures.

Here then we have, possibly in the schools, some 20 per cent. with tubercle of thoracic glands, and 8 per cent. with some spread from these to the adjoining lung. How do such cases reveal themselves? If signs were present what would such signs be? It must be admitted that enlarged glands alone give no signs unless pressure signs, and when disease has spread into the lung to such a degree as to give signs in the interscapular region the lung disease, in my experience, is progressive and fatal. If these 8 per cent. are not curable they must be fatal through one of two channels, either through lung disease as described (and this is uncommon), or through tubercular meningitis, also uncommon at these ages. In either alternative the child will not be found in the school.

As for the pressure signs, these are present in but few cases and are seldom distinctive; the commonest are enlarged chest veins and spasmodic cough, both open to other interpretation. Such signs as pressure on trachea or bronchus are very uncommon, and when such gross lesions exist the children do not remain in school. A persistent bronchial catarrh around the roots of the lungs with a tendency to areas of temporary collapse may point to some such pressure, and these signs are suspicious in a child of tubercular appearance, but are never diagnostic. On the whole, it may be said with confidence that this type of tuberculosis is rarely diagnosable in the school child, though its presence may often be suspected.

2. *Phthisis in children.*—When we turn to phthisis, on the other hand, we have a condition whose physical signs alone will, in most cases, lead to a diagnosis; indeed, in my experience the disease is less often passed over than diagnosed where it does not exist. Where the disease is at all progressive the signs are usually more evident than they are in the adult, and, I think, more rapidly developed. We must not, however, any more than in the adult, wait for physical signs before steps are taken in a case under suspicion. Unfortunately, in children it is seldom that active symptoms, as hæmoptysis, precede the appearance of physical signs, so that as a rule the signs are quite well marked by the time the case falls into the hands of the physician. Where this is not the case suspicion is most often aroused by the onset of wasting and pallor, and for these, of course, where other causes have been excluded, treatment on the lines of tubercular disease should be pursued till the location of the focus makes itself manifest.

Among the cases of tubercular disease found in healthy children dying from acute disease I have already mentioned that Ganghofer found 0·5 per cent. with primary apical tuberculosis and Hamburgher 0·66 per cent. These cases may be said to represent fairly the conditions which would be found among the living (in Prague and Vienna) at these ages, but the ages (not given) are, on the grounds already stated, probably much lower than the school age. Since phthisis becomes more common with every year of life the percentage for school age will probably be higher than this. When we turn to the clinical aspect we find the following percentages quoted by different observers for British elementary schools (urban):—

Author.	Number of cases.	Percentage of phthisis.
Squire and Gowdey (London)	1670	0·47
Lecky and Horton (Brighton)	806	0·37
John Hay (Liverpool)	436	0·45
Greenwood (Blackburn)	400	0·25
A. P. Low (Dundee)	517	0
R. V. C. Ash (Dunfermline)	1371	0
Michael Hay (Aberdeen)	600	0·5

These may be said to agree very fairly and probably represent the proportion of phthisis, in a diagnosable condition, present among school children actually attending school.

When we turn from these to such results as those, often quoted, of the late Professor Grancher[1] of Paris, it is obvious that something quite different is meant by the figures. Professor Grancher and his assistants, among 4226 children examined, found about 15 per cent. apparently tuberculous; but to anyone who reads his paper it is apparent that the business was a conscientious attempt to diagnose thoracic glandular tuberculosis, and not phthisis. Of the 4226 children examined, "open tuberculosis" was found in but 3, and of the others, all of whom remained fit for schooling, only a very few showed even such sign as impairment to percussion. We can but commend this as an honest and useful attempt to take such cases at the earliest moment, but I would insist that the much-quoted 15 per cent. did *not* apply to phthisis. Whether their discoveries stood for disease at all is another matter; it is easy to be deceived in the interpretation of slight signs in children. How often will the areas of collapse occurring in children with adenoids simulate tuberculosis and cause doubt in the minds of the most skilful observers!

Other misleading figures to which a reference seems necessary are those of Dr. Mary H. Williams.[2] Her paper contains many fallacies and inaccuracies, and the percentage of phthisis she found (15·4) in her schools is startling till she explains that she accepts bronchitis as evidence of a tubercular process. Would that all observers were equally candid in revealing the grounds of their heterodoxy!

Many conditions in children are liable to be, and are, mistaken for phthisis, and in certain cases the differential diagnosis may be most difficult. Indeed, the interpretation of the physical signs, when found, presents far more difficulty than it does in the adult; there is more choice of possibilities and hence more chance for error, and this holds good for all varieties of lung disease in children. The following appear to me to be the conditions most frequently leading to difficulty:—

(*a*) Physiological conditions, especially blowing breath sounds at the right apex in thin children.

(*b*) Adenoids when associated with bronchitis, in which condition collapse of some standing not infrequently occurs and simulates tubercular consolidation.

(*c*) Bronchitis with signs confined to the roots, and sometimes both apices of the lungs, with or without temporary collapse.

(*d*) Conditions of bronchiectasis with or without fibrosis, especially where a whole lung is involved up to the apex. Where, as occasionally occurs, the apex *only* is involved the condition may be very difficult of diagnosis.

(*e*) Wasting conditions not dependent on tuberculosis, and especially the condition of wasting and pallor accompanying carbohydrate dyspepsia in children.

(*f*) Tuberculosis spreading from tubercular thoracic glands, though here the diagnosis is of less importance than in the conditions already mentioned.

The Clinical Aspect of Phthisis in Children.

In the experience of a large out-patient clinic at my East-end "chest" hospital I have been much struck with the comparative rarity of phthisis in children compared to that in the adult. This has not been due to any scarcity of children presenting themselves for treatment, for they attend in large numbers, and I find that at my children's hospital, also in the East-end, still fewer cases of phthisis appear.

---

[1] Grancher: Revue de Thérapeut. Médico-Chirurg., 1906, vol. lxxiii., p. 757.

[2] Williams: Brit. Med. Jour., Feb. 13th, 1909, p. 387.

These, when found, I usually transfer to my chest hospital so the figures to be presently given for this institution err, if at all, on the side of excess. Cases are not missed, for in every case at both hospitals the lungs are carefully examined, and in most cases re-examined on one or more occasions.

With a view to discovering the proportionate incidence of phthisis in children compared to phthisis in the adult, I have studied my out-patient notes for the four years 1905-06-07-08. I find, among cases of undoubted phthisis, the following proportion of children between the ages of 5 and 14 years (inclusive):—

Year.	Adults.	Children.
1905	205	9
1906	226	4
1907	307	6
1908	427	12

Total: Adults, 1165; children, 31, or 2·6 per cent. of total.

In addition were found 19 doubtful cases in children, the majority being cured conditions of probable tubercular origin. Since doubtful cases were not counted among adults it is fair to exclude these in children also; if they are counted in it will make the highest possible figure 50 cases, or 4·1 per cent. of the total. On turning to the Registrar-General's reports we find the number of deaths from phthisis between the ages of 5 and 14 years to be 2·43 per cent. of the total in 1906 and 3·1 per cent. in 1907, figures which correspond very closely with those given above.

On the whole it may be accepted with much probability that less than 4 per cent. of all cases of phthisis are found in children of school age. If, now, we compare the numbers living between the ages of 5–14 years (inclusive) with those living above these ages, we find from the last Census (1901) 6,829,031 in the former category and 21,982,104 in the latter for the whole country. This may be taken to represent sufficiently nearly the proportion existing in London at the present time, and from it we find that of all persons above the age of 5 years 24 per cent. are of school age (5–14 years inclusive). If, then, phthisis were as rife at school age as in later life, 24 per cent. of cases would occur between these years instead of the 3 per cent. or thereabout of my figures and those of the Registrar-General. It is clear from this that phthisis at school age is a comparatively rare disease.

With a view to comparing some of the clinical points of phthisis in children with the disease as it occurs in the adult I have collected together cases in children (56 in all) where reliable details of the disease could be obtained. These 56 cases were distributed as follows:—

Ages.	Boys.	Girls.	Total.
14 years	7	9	16
13 ,,	4	8	12
12 ,,	3	5	8
11 ,,	1	4	5
10 ,,	0	1	1
9 ,,	0	2	2
8 ,,	1	4	5
7 ,,	2	2	4
6 ,,	0	2	2
5 ,,	1	0	1
Total ...	19 boys.	37 girls.	56

This table shows how girls were affected twice as much as boys, how great an increase of cases occurs towards the age of puberty, and, indeed, how comparatively few are the cases among younger children.

Site of lesions.—Among these cases the *left lung* appeared to be the earliest seat of infection in 35 cases, and the *right* in 21 cases. This is in marked contradistinction to tuberculous disease spreading from caseous thoracic glands where the right side preponderates to a marked degree. Other peculiarities about the lesions in children are the tendency to one-sided disease and the position of cavitation. As a rule the lung first attacked becomes diseased to a more considerable extent than in the adult before signs appear at the opposite side. This is an important point to remember in diagnosis, since the absence of signs at the opposite apex may lead to a wrong diagnosis of "non-tubercular" where considerable one-sided disease exists. With regard to cavitation, it is my experience that this often occurs lower down, and farther out in the lung than is usual in the adult, the top of the axilla being a common situation.

Types of disease.—Phthisis in children may be most conveniently and usefully divided into (*a*) cases *without* and (*b*) cases *with marked cavitation.*

(*a*) The former correspond most closely to bronchopneumonic "caseous tuberculosis" of the adult, but in my experience run a much longer course. The disease extends a long way in one lung before the other is attacked, is slowly but surely progressive, but leads to little wasting. Indeed, the general nutrition often remains remarkably good in these cases, the child may live one or even two years, and die in the end of mere lack of aerating surface sufficient for bodily needs. The signs are those of softening, but without the presence of clinical cavitation.

(*b*) Cases with marked cavitation form, as a rule, a striking contrast to those described and correspond to "fibro-caseous tuberculosis" (chronic phthisis) of the adult. Cavitation may be, and often is, extreme, involving in some cases nearly the whole of a lung, and secondary infections, consequently, play a marked rôle in the disease. Anæmia and emaciation are generally considerable, but temporary arrest is much more likely to occur than in the cases without cavitation mentioned above, though far less common than with lesions of similar extent in the adult.

Hæmoptysis.—This is considered a rare symptom in phthisis of children but it occurs in a proportion of the older cases. Among 51 of my cases where inquiry was made hæmoptysis had occurred at some time in 17. Among these, one died from hæmoptysis and another from pneumonia following repeated attacks of hæmoptysis in the ward.

Duration of life.—The duration of life in phthisis is a difficult matter to average on account of the great variation among individual cases. Some run a short, some a long course, but I think it must be admitted that the average course of a fatal case in the child is much shorter than in the adult. Among cases in my series, only 12 in number, where I could ascertain the duration of the disease up to death, in only 1 did this reach 3 years, in 1 between 2 and 3 years, in 2 between 1 and 2 years, and in 7 the duration appeared to be 1 year or less. It must be remarked that the duration in these cases was dated from the onset of symptoms, and these tend to appear late in phthisis of children, but still it appears to me that fatal cases run a comparatively short course.

Curability.—Among a number of my old cases written to with a view to ascertaining their present condition the following results were obtained and are of some interest. Of 21 cases seen or heard of 9 were dead, of whom most had died within a few months, but 2 had lived 2 and 2½ years respectively since last examined. It may here be remarked what a very long time a hopeless case with advanced lesions will sometimes hang on. Eight cases, all re-examined, appeared to be cured and were at any rate arrested; 6 of these were in the first stage (Turban) and well 1–3 years (3 years in 3 cases!) later, and 2 were in the second stage, well and with arrested lesions 3½ and 4 years later. Four other cases seen were in good condition after 1 year, but with lesions still apparently active.

These figures introduce us to an important point in phthisis of children—namely, its curability. I have seen many cases (some quoted above) with well-marked signs and with tubercle bacilli in the sputum quite well and at work three or four years later, and the number of cases where cure occurs in an early stage are, I am quite sure, considerable. The consideration of such cases followed from disease to arrest brings one by a natural process to cases, sufficiently common, where slight signs, probably of arrested tubercle, are discovered at one apex. Such signs may be discovered accidentally, or may be accompanied by cough or wasting. Among the 19 "doubtful cases" of phthisis in my out-patient figures, 10 were of this nature. In these the signs consisted of impairment and deficient movement at one apex, with blowing, and in some cases feeble, breath sounds. In some cases these signs appear to correspond to an arrested lesion and are associated with symptoms which may recur or may finally disappear; in many, however, the disease appears to be cured, and I have seen such children years later in good health and with precisely similar signs. I see no reason to doubt that most of these are instances of arrested tubercle, though of course it is obvious that there are other possibilities into which space does not allow me to enter.

Before concluding this paper I must refer to the startling results which have been obtained by the routine examination of children by von Pirquet's vaccination. As a result of this test fully 68 to 94 per cent. of children in Vienna between the ages of 11 and 14 years were pronounced to be tubercular. Such figures, if the conclusions are confirmed, serve to show in a startling manner the ubiquity of the tubercle bacillus and the importance of improving the national physique, but they have little bearing on the presence of clinical tuberculosis in the schools. It is obvious that we cannot consider 94 per cent. of such children as tubercular subjects any more than we can feel anxiety about the presence of an appendix before appendicitis shows itself. The matter is beyond the scope of the clinician, but it should give qualms to the hygienist and the legislator.

In summing up the conclusions of this paper I must recall again its main contention—namely, that phthisis is a form of tuberculosis occurring uncommonly in childhood. It must not be supposed, however, that on this account I desire to belittle the importance of the tuberculosis problem at school age; tuberculosis, especially of thoracic glands, is sufficiently common, and all reasonable measures should be taken for dealing with suspects as early and efficiently as possible. What is a much more serious matter, however, and one which demands immediate measures of prophylaxis, is the huge death-roll from tuberculosis in children *below* the age of five years, a subject outside the scope of this paper.

My conclusions are as follows:—

1. That the term "phthisis" should be reserved, when speaking of children, for a disease identical with phthisis in the adult, and should *not* be used to cover all forms of pulmonary tuberculosis.
2. That, using the term in its proper meaning, phthisis is *not* a common form of tubercular disease in childhood.
3. That fatal tuberculosis is (comparatively) uncommon at school ages, the bulk of tubercular infection during this period being localised and recoverable.
4. That phthisis, when it occurs in children, is eminently curable in early stages, but that, when fatal, it generally runs a shorter course than in the adult.

Queen Anne-street, W.

A CASE OF JAUNDICE OF DOUBTFUL ORIGIN, WITH FATAL TERMINATION, OCCURRING DURING PREGNANCY.

BY G. FULLER ENGLAND, M.D. CANTAB.,
SENIOR PHYSICIAN TO THE ROYAL HANTS COUNTY HOSPITAL, WINCHESTER;
AND
FRANCIS R. THORNTON, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case is of interest on account of the complexity of the symptoms presented and the consequent difficulty of arriving at a correct diagnosis. In order to demonstrate this it will be well, perhaps, to at once describe the history of the case.

The patient, a married woman, aged 28 years, was admitted into the Royal Hampshire County Hospital at 2 A.M. on the morning of Sept. 10th, 1909. Her past history presented no item of interest beyond the fact that she had had one child, now three years old. At 7 P.M. on the evening previous she was seized with severe abdominal pain, followed by sickness, the material brought up being first dark in colour and later clearer. The vomit was not seen by a medical man. She was given first gin, which was ejected, and later some brandy which she retained (strength unknown). These symptoms continued until 9 P.M., when they were replaced by a series of fits, simulating to all intents and purposes uræmic convulsions. These became more frequent and at 12.30 A.M. a medical man was called in, who at once sent the case into hospital.

On admission the patient was unconscious, with pulse 120, respirations 40, and temperature 96° F. Shortly after convulsions again commenced, but were controlled by chloroform and an enema containing 30 grains of chloral hydrate and 1 drachm of bromide of potassium. It was found on examination that she was about six months pregnant. A catheter was passed at once and 13 ounces of urine were drawn off. This urine was of a dark claret colour, specific gravity 1030, acid, and contained albumin and blood in large quantities. The condition was thought to be one of eclampsia with acute nephritis.

A short time later the patient was removed to the theatre with the object of inducing labour as soon as possible. No further anæsthetic was required, the patient being still unconscious, and there had been no recurrence of fits for about an hour and a half. The os was found to be soft and easily dilatable, two fingers being readily admitted. The head was presenting in the left occipito-anterior position and well down, so beyond sweeping the fingers well round the lower segment nothing was done, except that a biniodide douche was given and the vagina plugged with an iodoform tampon.

The patient was returned to bed at 5 A.M. As soon as daylight began to appear a marked icteric colour was noted on the face and body. The conjunctivæ were œdematous and oozing a serous fluid which yielded a display of colours with nitric acid, and there was oozing of dark blood from the lips, which coming at this stage diminished the probability of its being due to a bitten tongue. At 10 A.M. the condition was much the same; pulse 132, of fair volume and regular, temperature 97·4°, and respirations 40 and stertorous. Labour was apparently commencing. At 1 o'clock an enema was given, 16 ounces of urine being previously withdrawn, and shortly after she was delivered of a stillborn female child, which had apparently been dead not more than 24 hours. The child was well formed, weighed 2¾ pounds, and was 13 inches in length, the cuticle showing no maceration, but being intact all over. The placenta was small and like the membranes was stained with bile. The colour of the child was normal. The patient from this time got steadily worse, though the icteric tinge seemed to vary in intensity within short periods of time. At 8 P.M. she had a slight general convulsive attack, accompanied by a rise of temperature to 99·4°; her pulse and respiration increased and the former became irregular. The end came at 11 P.M.

A Clinical Research Association report on a specimen of urine drawn off on Sept. 16th is as follows:—

> The specimen of urine, marked ——, received on 18/9/1909, has been duly examined, and I have been instructed to forward the following report thereon:—Reaction: Acid; sp. gr. 1028. Albumin: A very large amount. Blood: *Vide infra.* Sugar: 20·41 parts per 1000, or 8·93 grains per ounce (see note).
>
> *Microscopical examination of centrifugalised deposit.*—The deposit contains only a moderate number of red blood discs, associated with granular cells, of a renal type, and a very few minute granular and hyaline tube casts.
>
> Many bacteria are present, but probably they are only adventitious. There are no traces of pus and we can detect no crystals of leucin or tyrosin, or of any other substance.
>
> The deep brown colour is due entirely to methæmoglobin, and is altogether out of proportion to the small quantity of red blood discs found in the deposit. The condition is, undoubtedly, a true methæmoglobinuria. No bile pigment is present. No reaction is obtained for acetone or for diacetic acid.
>
> *Note.*—The sugar has been proved to be glucose by the production of phenyl-glucosazone crystals.

Mr. Thornton also found the urea diminished to about half normal.

Here, then, we have a combination of symptoms which presented a considerable difficulty to us in attempting to arrive at the real nature of the disease. At first apparently we had an ordinary case of eclampsia to deal with, but from the presence of jaundice and the accompanying effusion of blood and bile-stained serum from the mucous surfaces, there was evidently something further to be explained.

Acute yellow atrophy of the liver was the most natural idea which presented itself and the condition had many points in common with the classical descriptions of that disease; e.g., Dr. J. S. Bristowe sums up his chapter on this complaint thus:—

> The most characteristic phenomena in the clinical aspect of malignant jaundice are, in combination, slight jaundice, grave cerebral disturbance, hæmorrhage from and into various organs and tissues, profound change in the composition of the urine, absence of fever, and an almost invariably fatal issue.

His remarks also concerning the pulse were corroborated by our observations, for he says:—

> The pulse is characterised by remarkable and sudden variations in frequency, but is generally abnormally quick. With the supervention of coma, however, it becomes more uniformly rapid, and at the same time more and more feeble.

Against this diagnosis we must place the acuteness of the onset and the fact that the urine showed no crystals of either leucin or tyrosin. The liver dulness also showed no diminution, though at so early a stage this would hardly have any significance.

There is, however, another condition presenting very similar clinical signs—viz., phosphorus poisoning. Against this was the difficulty of obtaining any history of the patient having had access to phosphorus (though a stale bottle of that poison was found in the house), and the early appearance of the jaundice following the convulsions. In favour of it, on the other hand, the patient was stated to have suffered greatly from depression and had a great dread of her confinement. Her mother also is in an asylum, though, as far as can be ascertained, there is no suicidal tendency. Common to both conditions we have the state of the urine which, although not showing the presence of leucin or tyrosin, both of which substances may, or may not, be found in either case, yet presented the colour and general appearance of both possible causes. It should be mentioned that later there were large quantities of granular casts showing the acute inflammatory condition which obtained in the kidneys, and which might be compatible with either diagnosis.

The report of the urine as supplied by the Clinical Research Association from the specimen which was obtained shortly after admission, stated also that it contained "8·9 grs. per oz. of sugar (this being proved to be glucose)," and that the deep brown colour was due entirely to methæmoglobin and was altogether out of proportion to the small quantity of small red blood discs, the condition being undoubtedly a true methæmoglobinuria. No bile pigment was present in this specimen, though its presence was well marked later on. With this we conclude our remarks on the clinical symptoms and turn to the result of the post-mortem examination of the internal organs.

Necropsy.—On opening the abdomen the liver was somewhat enlarged, projecting slightly beyond the costal margin, and on removal considerable hæmorrhagic stains were found on the lower surface of the diaphragm. The liver weighed 64 ounces; in colour it was yellowish-red and mottled in appearance, with, on section, occasional patches of yellowish-gray substance scattered throughout the surface, the brilliancy of the colouring being still more striking in the whole organ when sliced. It was firm but not leathery, nor greasy. The stomach wall was much congested and showed hæmorrhages both fairly large and petechial. The mucous membrane was smooth and œdematous, no actual ulceration being present. The contents were dark and grumous but with no distinctive odour. In the kidneys the pyramids were much congested, and there was abundant blood-clot present in the pelves. The capsule stripped readily. The spleen was congested and friable, not apparently enlarged. The lungs and heart were normal, with the exception of a slight thickening of the mitral valve of old standing. The stomach and its contents, liver, and spleen were sent to the Clinical Research Association for further investigation, and the following report was returned:—

> The specimen marked —— received here on 21/9/09 has been duly examined, and I have been instructed to forward the following reports thereon:—
>
> The organs of this patient do not confirm the suspicion of irritant poisoning of any kind. The stomach shows no disintegration of the mucous membrane, and its congested appearance has probably the same cause as that of the liver and spleen. The liver, which is large (in phosphorus poisoning its size is diminished), shows only very small areas of hæmorrhage and necrosis, and no widespread necrosis of the hepatic cells. The spleen is much congested and shows practically no other change.
>
> The kidney presents a definite early tubal nephritis, the convoluted tubules being chiefly affected, and showing necrosis and disintegration of their epithelium.
>
> These appearances, taken with the history of the case, point to death from puerperal eclampsia and not to phosphorus poisoning or acute yellow atrophy, the presence of methæmoglobin in the urine being probably indicative of a high degree of hæmolysis of toxic origin.
>
> *Chemical analysis.*—We have examined the contents of stomach. No unoxidised phosphorus could be detected nor any lower oxide of phosphorus.

From this report it will be gathered that the histological examination does not bear out either possible diagnosis suggested by the clinical signs. We should like, therefore, to offer a few remarks bearing on the subject of this notice.

Firstly, with regard to the size of the liver. Various authors say that the liver may or may not be enlarged in acute yellow atrophy; there is, it seems, no doubt that, when the disease has continued for some time, there is distinct diminution of the liver bulk together with a leathery cut and feel and a general wrinkling of Glisson's capsule. It will be of interest to put in here the evidence of one of the greatest of observers—viz., Trousseau—since his observations clinically have not been improved upon even by the most accomplished physicians of the present day.

Trousseau in his "Clinical Medicine" mentions more than one case in which a diagnosis of malignant jaundice was made in which the liver was, or had been during the illness, actually enlarged, and quotes five (at that time eminent) pathologists who "have not only ascertained that the physical character of the liver may be normal, but believe that histological examination gives in many cases only negative results." Frerichs, on the other hand, says "that palpation and percussion enable us generally, but not always, to ascertain that there is considerable diminution in the volume of the organ"; but, goes on Trousseau, "This assertion of Frerichs is the more remarkable that a great many cases occurred in women at the sixth, seventh, and eighth month of pregnancy, a stage of gestation at which we know that there is a notable augmentation of the size of the liver irrespective altogether of any morbid condition." Could it not have been that here the symptoms were so acute that this not unusual enlargement, occurring as in this case during the sixth or seventh month of pregnancy, still persisted?

Another point on which we may be permitted to make observation is the suggestion by the Clinical Research Association that the case was one of acute toxæmia of renal origin. What else, after all, is acute yellow atrophy but an acute toxæmia, which is known to be accompanied by profound renal changes? And on this point we should like to say that we can find no evidence in the text-book descriptions of eclampsia or of acute nephritis in which jaundice has especially been noted as a symptom, though Osler, Saundby, and others describe methæmoglobinuria of toxic origin as being often associated with gross kidney changes.

In the later stages of paroxysmal hæmoglobinuria the conjunctivæ and skin sometimes assume an icteric tinge, for Hayem has found hæmoglobin in excess in the blood serum in paroxysmal hæmaturia and considers that the hæmoglobin is set free in the blood before it appears in the urine.[1]

Again, in acute nephritis and eclampsia this further very important symptom is generally pronounced—viz., suppression or at any rate very considerable decrease in the amount of urine, whereas in the case we have described as much as 29 ounces were excreted by the kidneys in about 18 hours.

What, may be fairly asked, is the element required constituting the difference between "an acute toxæmia with marked jaundice of renal origin" and acute yellow atrophy, which is undoubtedly a toxæmia, though the determining poison has not as yet been differentiated, but which is always accompanied by inflammatory changes in the kidneys? Taking into consideration the various aspects of the condition described, are we to regard the case as one of puerperal eclampsia with unusual symptoms or one of acute yellow atrophy of such rapid development that the usual macro- and micro-scopical appearances in the liver had not had time to manifest themselves?

Later researches appear now to point to the probability of acute yellow atrophy not being, strictly speaking, a pathological entity, but only constituting evidence of an eclamptic toxæmia in which the liver changes are the most prominent features, since in the more recent literature on the subject we find an article on "The Toxæmia of Pregnancy with Vomiting"[2] by Ellice Macdonald, in which, quoting Stone, he says:—

> Eclampsia is now generally recognised as a toxæmia whose chief lesion is a degeneration and necrosis with multiple hæmorrhages of the liver.
>
> The kidney changes, although forming an important part of its terminal features, are essentially secondary. All the older theories of eclampsia have been successfully applied to the condition which is described as hyperemesis gravidarum. We have also found under this latter clinical picture lesions which are identical with those occurring in acute yellow atrophy of the liver. At the same time we know but little in regard to the pathogenesis of this latter disease except that in one quarter of its cases it is associated with pregnancy, this indicating that it is probably due to a toxæmia.
>
> An analysis of its symptoms also shows it presents essentially the same clinical picture as eclampsia; in other words—under the clinical titles of hyperemesis gravidarum, eclampsia, and acute yellow atrophy of liver we have found enough to warrant a definite statement that they are one and the same disease.

The clinical history and pathological findings of the present case go a long way towards establishing this dictum.

---

[1] Saundby's lectures on Bright's Disease.

[2] American Journal of Obstetrics, 1905.

INFECTIVE ENDOCARDITIS AS A COMPLICATION OF PREGNANCY.

BY EVERITT E. NORTON, M.D. DURH., D.P.H., &C.,
MEDICAL SUPERINTENDENT, ISLEWORTH INFIRMARY.

CASES of infective endocarditis are sufficiently rare, varied as to causation, and difficult of diagnosis to be always of interest. I am only too well aware that the two cases here described are deficient in many details which would have been of value, and my excuse for offering reports thus incomplete must be that the cases present features of peculiar interest and importance from a medico-legal as well as from a clinical standpoint. They both occurred in young women; each of the patients was the subject of an unwelcome pregnancy, and each had confessedly and to the knowledge of others been making attempts to procure abortion. In each case there was a sudden attack of severe illness, miscarriage occurred, and death rapidly followed upon a profound toxæmia. The symptoms bore the strongest resemblance to those which might have been produced by septic complications following upon abortion criminally procured by the use of instruments.

The occurrence of so sudden and tragic a fatality, under such conditions, to a pregnant girl cannot fail to give rise to the gravest suspicions and insinuations; most unjust accusations might be made, and in these the medical man in attendance might only too easily be seriously involved. In each of these cases an inquest was held, and the only verdict possible, in the circumstances, was returned—that death was due to "Natural causes," and that no attempts which might have been made to procure abortion had any share in bringing about the fatal issue.

CASE 1.—The patient was single, aged 28 years. She was said to have been generally healthy. Towards the end of June, 1908, she came to stay with friends in this neighbourhood; she was known to be about four months pregnant, but was believed to be otherwise well. She was said to have at this time taken pills, which were understood to contain aloes, in considerable numbers; even (it was thought) as many as 72 in three days. There was also a suggestion that she "had had something done" at a house in Hammersmith. She appears to have first complained of definite illness on June 30th, and "flooding" and miscarriage followed.

Upon admission, at 3.45 P.M. on July 2nd, the patient was in a cyanosed and collapsed condition. The pulse was 128, respirations 44, and temperature subnormal. There was no rash. No specimen of the urine was obtained. There was no dropsy. The chest had been blistered by poulticing. There were signs of broncho-pneumonia; dyspnœa was marked, and the sputum was blood-stained. The heart sounds were somewhat masked by the pulmonary sounds; on definite bruits were noted. Respiratory movement of the abdomen was normal; there was neither pain nor tenderness. The spleen could not be felt. The contracted uterus was palpable, the fundus reaching to within two inches of the umbilicus. A vaginal examination (on the 3rd) showed that the cervical canal was patulous and empty; a small piece of membrane was removed from the vagina. The red lochial discharge which was present at first became darker and offensive a few hours later.

The patient failed to rally under stimulating treatment. The temperature remained subnormal with the exception of a slight rise (to 101° F.) shortly before death. The pulse became weak and rapid and there was profuse sweating. The mental dulness and apathy gave place to delirium, cyanosis became more marked, and death occurred at 3.30 on the afternoon of the 3rd, just 24 hours after admission. There were no convulsions. No blood count was taken.

Necropsy.—There was general pulmonary congestion with patches of broncho-pneumonia, but no consolidation. The heart was of normal size and showed no signs of long-standing disease or of congenital defect. The right side revealed no abnormality of cavities or valves. The aortic valves were normal. Upon the mitral valve, on both cusps and along the whole length of the line of contact, was an irregular row of rough vegetations—some being of considerable size. There was no peritonitis. The uterus showed evidences of recent pregnancy; it was empty, but the decidual remnants and placental site were sloughing and had an offensive smell. The appendages were healthy. Nothing suggestive of instrumental interference was found. The bladder was healthy. There were no abnormal conditions of the gastro-intestinal canal, or of the liver or kidneys, so far as could be made out upon naked-eye examination. The spleen was somewhat enlarged, congested, and very soft; it contained one large abscess-cavity, evidently due to the breaking down of an infarction.

CASE 2.—The patient was single, aged 21 years. She was described as having been a healthy girl. She was thought to have had a "threatening" of rheumatic fever as a child, but not to have been at the time laid up or to have shown symptoms of serious illness. In June, 1909, she was treated for influenza and was, at the same time, found (by the medical man who attended her) to be pregnant. In August she occasionally vomited; at about this time she was known to have obtained pills and was believed to have taken them in the hope of terminating the pregnancy. So far as was known, no other steps were taken with that object. On Oct. 8th she went to begin work at a new place as general servant; she ate a full meal and made no complaint of illness. After working for some time on the following morning she complained of "biliousness" and vomited; she was found, upon the evening of the same day, to have a temperature of 103° F. On the 10th, feeling too ill to remain up, she returned to bed and was seen by a medical man, who considered that she was suffering from acute rheumatism. She continued very ill; an opinion was formed that the fœtus was dead, and (upon the 12th, when a rash was for the first time observed) she was sent to the infirmary.

Upon her admission, at 4.45 P.M. on Oct. 12th, the patient was found to be exceedingly ill. There was occasional delirium. She complained of headache and malaise, of pains in the joints, and of vomiting and diarrhœa. The temperature was 102·8°, pulse 104, irregular in time, and respirations 48. The tongue was dry and furred. The pupils were equal and reacted normally. There was no dropsy. Neither effusion nor definite pain or tenderness was found in any of the joints. There was thickly upon the face, neck, and back, and sparsely elsewhere, a discrete subcuticular rash; this in some places disappeared upon pressure, but in others was hæmorrhagic, the petechiæ being numerous upon the face and back. The rash was plainly visible through the epidermis of the palms and soles. There was dyspnœa. There was no pulmonary consolidation and no sputum. The heart sounds were indistinct, the first being blurred and the sharpness of the second being lost; no definite bruits were detected. There was no pericarditis. Such nourishment as was taken was speedily vomited, together with bile-stained fluid. The abdomen moved with respiration; there was some general tenderness; the pregnant uterus occupied the right side of the abdomen; there were no fœtal movements or heart sounds. The spleen was not felt. There was no vaginal discharge. No specimen of urine was obtained, though some was passed in the bed.

On the 13th the patient had not rallied. The temperature varied between 102° and 104°; the pulse was rapid, weak, and irregular, and the respiratory difficulty continued. The mental condition was worse. Pains in the limbs and joints were still complained off. There was frequent vomiting of large quantities of bile-stained fluid. A warm water enema produced a normal result. Urine was passed in the bed. At 1 A.M. on the 14th there was profuse sweating, and at 1.10 a fœtus of the age of over five months was expelled, the patient being apparently too dazed to realise what was occurring. The miscarriage presented otherwise no unusual features; the fœtus was macerated and had evidently been several days dead. The uterus contracted normally. Later the pulse became weaker and cyanosis more marked. The abdomen was distended, tympanitic, and tender, and there was vomiting of blood-stained fluid. Death took place at 3.15 P.M. The rash persisted. There was no œdema. No convulsions occurred. No catheter specimen of the urine was obtained. No blood-count was taken.

Necropsy.—A post-mortem examination was made on the 15th. The rash was almost as distinct as it had been during life, and was clearly seen even upon the palms and soles. The lungs were congested at the bases and elsewhere; there was a little fluid in the pleuræ. There was no pneumonia. The heart weighed 14 ounces; in the pericardium was an ounce of serous effusion. The cavities and valves of the right side presented no abnormality. On the left side there was a large mass of rough vegetation upon one cusp of the mitral valve; of the aortic valve each cusp presented along its free edge a row of "warty" vegetations of considerable size; to one of them a large mixed clot was adherent; there was no perforation. There was neither evidence of long-standing disease of the heart nor congenital defect. There was no peritonitis. The uterus was empty and contracted, its appearances being consistent with the occurrence of miscarriage; the appendages were healthy; there were no signs of any instrumental interference. The bladder was empty. The stomach was in a condition of catarrhal inflammation and was distended with blood-stained fluid and (as were the intestines) with gas. The liver was not enlarged and was pale, with the exception of the congested inner zone of the lobules. The spleen was small and soft and showed no gross abnormality. In the kidneys the changes were very marked and interesting. The organs were greatly enlarged and weighed together 18¾ ounces. The surfaces were intensely congested and bore numerous petechiæ. On section the whole substance of both was found to be uniformly and densely crowded with suppurating foci of the size of small pin-heads; there were a few firm white infarcts. Sections (prepared by the Clinical Research Association, Limited) showed microscopically large numbers of septic emboli surrounded by inflammatory leucocytes and areas of necrosis of the kidney tissues. An infarct was seen to be a similar condition but larger in area and not surrounded by so much inflammatory exudate. A section stained by Gram's method showed numbers of micrococci. The right shoulder-joint (to the neighbourhood of which, in particular, pain had been referred) was examined but revealed no abnormality. No bacteriological examination was made.

Remarks.—These two deaths resulted from infective endocarditis, the fatal issue being possibly hastened in the second case by uræmic conditions following upon the widespread changes in the kidneys. It seems justifiable to conclude that the occurrence of miscarriage was the inevitable result of the infection and death in utero of the fœtus, and had probably (as has been said) no relation whatever to any attempts which had been made to bring about the termination of pregnancy. It is at least impossible to substantiate any theory which would connect such attempts with the causation of death.

The cases were of the "fulminating" type, though in one there was certainly some slight cardiac hypertrophy. In the excellent paper by Dr. Thomas J. Horder[1] it is remarked that "the fulminating form" of infective endocarditis "may sometimes be suspected but is rarely diagnosed"; the earlier of my cases was not diagnosed and the conditions found post mortem came as a complete surprise to those present at the examination; the second case was suspected, mainly on account of the presence of the petechial eruption. For various reasons, which need not be here referred to, no steps were taken even after death to determine the nature of the infecting organisms. Although the cases belonged to that class of the disease in which a definite source of infection has more frequently been found there was no such lesion apparent. There was no sign of gonorrhœa or of its complications, and there was no reason whatever to suspect, from the known facts, the presence of that disease.

Infective endocarditis is apparently of extreme rarity as a complication of pregnancy, though puerperal and post-puerperal cases are not uncommon. Dr. Herbert French, in his Goulstonian lectures upon "The Influence of Pregnancy upon certain Medical Diseases, and of certain Medical Diseases upon Pregnancy,"[2] makes no reference to this condition; he remarks, with regard to fevers, that "generally speaking the pregnant state seems to confer some degree of immunity, the reverse being true of the puerperium." Dr. Horder[1] found no instance of pregnancy amongst the 150 cases of infective endocarditis which he collected; he has, moreover, kindly looked through the cases of pregnancy with complications admitted during five years at St. Bartholomew's Hospital, and no such case appears to have been under observation. In most of the other articles below referred to there is no mention of this complication; Le Gendre,[3] however, records a most interesting case of a patient who was under observation at the Lariboisière Hospital from April 17th until May 6th, having then no cardiac lesion. She became again ill, being then three months pregnant, on May 15th, and was readmitted on the 21st with severe cardiac and febrile symptoms, but with no joint localisation. A yellow staphylococcus was cultivated from the blood. The patient was treated by intravenous injections of collargol. In spite of the presence of tubercular disease at the apex of one lung and of the occurrence of pulmonary infarction recovery took place and the pregnancy continued to term; a cardiac lesion remained.

References.—1. Infective Endocarditis, with an analysis of 150 cases, Dr. Thomas J. Horder, the Quarterly Journal of Medicine, April, 1909, vol. ii., No. 7. 2. Goulstonian Lectures, Dr. Herbert French THE LANCET, 1908, vol. i. 3. Endocardite à Staphylococques, M. Le Gendre, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, tome xx., 3me série, 1903. See also: An article, by M. A. Siredey, in tome xv., 3me série, 1898, of the Bulletins et Mémoires. Also: The Heart and Circulation in Pregnancy, Journal of Obstetrics and Gynæcology, 1905, vol. vii., Dr. H. Oliphant Nicholson. Harveian Lectures: The Heart in its Relation to Pregnancy, &c., Dr. M. Handfield-Jones, THE LANCET, 1896, vol. i. Maternal Heart in Pregnancy, &c., Dr. Mackenzie and Dr. Nicholson, Brit. Med. Jour., 1904. vol. ii.

Isleworth.

A FATAL CASE OF POISONING BY PHOSPHORUS, WITH UNUSUAL SUBCUTANEOUS HÆMORRHAGES.[1]

BY REGINALD G. HANN, M.R.C.S. ENG., L.R.C.P. LOND.,

AND

R. A. VEALE, M.B., B.S. LOND.,

RESIDENT MEDICAL OFFICER, LEEDS GENERAL INFIRMARY.

THE use of phosphorus by abortionists in England is now very rare; it was never so popular here as it was a generation ago in Germany, where it was by far the most common means employed either in the form of heads of lucifer matches or vermin-killer. Latterly lead has become largely used in this part of Yorkshire and is now, practically speaking, the only metal resorted to for the purpose. During the last four years an average of about ten cases per annum of suicide by phosphorus appear in the Registrar-General's returns, though it is likely that this number should be increased by the addition of some classified as deaths from vermin-killers. In the case now recorded we infer, as so small a quantity of the paste was taken, that the girl's intention was to bring about a miscarriage, for it is notorious that suicides tend to be lavish with whatever means they select.

An unmarried girl, aged 19 years, on her mistress becoming aware that she was about two months pregnant, was summarily dismissed from her situation and went into lodgings. Towards noon on the following day she took a quantity, afterwards estimated at a drachm, of a rat poison containing about 4 per cent. of phosphorus, and within a short time complained of abdominal pain and a feeling of distension. On the next day she was unable to get up until the afternoon, and while dressing she vomited some clear fluid. The sickness recurred and was accompanied by great thirst. The bowels were not moved. She took no food whatever on this day. On the third day, after drinking tea she rose at 10 A.M., and during the morning vomited repeatedly. In the afternoon, finding her left foot swollen, evidently owing to the first subcutaneous hæmorrhage, she walked to the hospital, but owing to some irregularity on her part was not attended, and returned to her lodgings and had tea. She went to bed early and had a supper of bread-and-milk. There was thus some abatement of the symptoms on this day, as was shown by the fact that she was able to get out and also to take food. At 2 A.M. on the next day she felt so ill that she aroused the people of the house. Vomiting was frequent, blood being present in considerable quantity, abdominal pain was severe, and a profuse uterine hæmorrhage appeared. Thirst was continuous and unrelieved by the large quantities of water she drank.

The patient first came under observation at 11 A.M. on the fourth day of her illness. She was semiconscious, extremely restless, perpetually turning from side to side in bed, unable to answer questions, the only reply to attempts to arouse her being an appeal for water. Hæmatemesis was frequent and the uterine hæmorrhage copious. On examination a remarkable condition was disclosed. Below the waist-line more than half of the total skin area was the seat of enormous subcutaneous hæmorrhages. The front and back of each thigh, both buttocks, the greater part of the left leg and the right foot presented continuous patches, dark purple in colour, with sharply-defined and often crescentic margins. The intervening skin, as elsewhere throughout the body, was normal. There was no jaundice. No satisfactory examination of the abdomen could be made owing to the pain and the girl's restless condition. There was incontinence of urine. The bowels were not moved. The temperature was subnormal, respirations 48, and pulse 120 and very feeble. She was admitted into hospital under Dr. E. F. Trevelyan, but died at 7.40 P.M.—less than three and a half days after taking the poison.

---

[1] A paper read before the Therapeutical and Pharmacological Section of the Royal Society of Medicine on Dec. 7th, 1909.

Necropsy.—The post-mortem examination was made 19 hours later. The body was that of a heavily-built stout girl, the abdominal fat being at least one and a half inches in thickness. No secretion could be squeezed from the mammæ. The large purpuric areas were already showing signs of putrefaction, the edges becoming green, and on the right thigh there were a few bullæ filled with blood-stained fluid. It was noted that there was considerable staining around the puncture made by a hypodermic needle. The brain was normal. On opening the thorax it was found that the pleural cavities contained a small quantity of dark-coloured fluid. Much hæmorrhage had occurred into the mediastinal tissues. Numerous subpleural ecchymoses were seen. The heart and lungs were normal. There was slight excess of peritoneal fluid hæmorrhagic in character. Most extensive retroperitoneal hæmorrhages were present, especially about the neighbourhood of the left kidney, while there were also hæmorrhages in the omentum and the mesentery. The liver was enlarged, weighing 54 ounces, and was of a brilliant canary-yellow colour. The liver substance bulged from its capsule on section and presented the appearance of acute fatty degeneration. There were hæmorrhages into the wall of the gall-bladder, which was thickened and gelatinous-looking. The kidneys were normal in size and on section pale yellow in colour. The stomach was filled with dark fluid material; its mucous membrane appeared normal. The uterus was enlarged and contained a hæmorrhagic mole consistent with the history of a two months pregnancy. The right ovary showed a corpus luteum. The rest of the abdominal viscera were normal in appearance. Unfortunately no specimen of urine was obtained.

Sir Thomas Oliver, who has examined microscopic specimens from the case, writes: "The liver shows signs of very advanced fatty degeneration, a large number of the cells having been completely transformed. The kidney shows very slight changes, indicating, therefore, that the brunt of the poison had been borne by the liver. The fatty degeneration so marked in character is interesting, seeing the short time the patient lived after taking the poison."

Remarks.—Jaundice due to blocking of the bile-capillaries is present in 80 per cent. of these cases by the third day. Though its early appearance is of serious import, speaking generally, it bears no constant relationship to the gravity of the disease or to the extent of the changes in the liver. It may well be that in some rapidly fatal cases, such as this, death comes too early for jaundice to develop. As is usual the primary symptoms—those of gastro-intestinal irritation—were marked off from the secondary signs of toxic poisoning due to hepatic failure by a period of comparative comfort on the beginning of the third day. The only symptom which did not share in this improvement was the thirst which throughout the illness was persistent and distressing. We think it likely that the massive subperitoneal hæmorrhages stood in direct causal relationship to the abdominal pain of the latter part of the illness, and we would compare this with similar conditions as they occur in Henoch's purpura and in acute hæmorrhagic pancreatitis. The subcutaneous bleedings in their wide extent were unlike anything seen in ordinary cases of purpura, and, so far as we know, have never before been recorded in phosphorus poisoning.

Leeds.

FRIEDREICH'S ATAXIA.

By A. ROWLEY MOODY, M.B., C.M. EDIN.

FRIEDREICH'S ataxia is a sufficiently rare disease for an account of a series in one family to be interesting, with the possibility of adding something to our knowledge of the disease or the means of successfully dealing with it.

I was consulted on May 25th, 1899, by a young woman, aged 22 years. Her father died from pneumonia when 64 years old. He had been a strong, vigorous man, and the mother, who accompanied the patient, was strong and well. Menstruation began at the age of 18 years, and for a time she was quite regular and normal in that respect, but had not been unwell for 18 months prior to the time she first consulted me. She said that she had lost a good deal of weight, did not sleep in the early part of the night, was subject to dreams, and was not refreshed in the morning. Her mother said she twitched and talked in her sleep, and that she was a good deal upset mentally, often brooding over the disease which she believed she had inherited, and which she thought was attacking her.

The patient had noticed an increasing difficulty in getting about for six or seven years and was afraid she was going like her sisters and brother. She first noticed that she was clumsy and easily tripped up and could not run. She stood with feet apart and turned somewhat inwards, with the body and head inclined forward. The gait was unsteady and clumsy and zig-zag. The unsteadiness was slightly increased by closing the eyes, but markedly so on turning, so much so that she had to clutch at something fixed; occasionally jerky and irregular movements took place in the legs, arms, and neck. These symptoms, the mother said, were more pronounced in bed at night.

On asking the patient to pick up a pencil the hand and arm, instead of coming in one continuous line to the object, made several jerky, hovering movements as if uncertain of their aim or wishing to put the object off guard that it was intended to seize. Eventually she took it with a clutching, hurrying grasp. The front part of the foot had to be raised by bending the knee more than usual to clear the floor, but there was no thumping down of the heels. There was some delay in commencing any movement. Mentally she was alert and intelligent, but the face was expressionless except for the eyes. At the same time she was able to laugh and to smile, but it suggested an effort to do so. The speech was slow, hesitating, and delivered in as few words as possible with a monotonous scanning intonation. There was great delay in commencing replies to questions, so much so that I thought at first she did not intend to answer at all. There was well-marked lateral and antero-posterior curvature of the spine.

There were no areas of anæsthesia, no neuralgia, no crises. The pupils reacted normally for light and distance. There was no optic atrophy; the sight remained still good. There was no nystagmus at that time. There was complete normal control of the bladder and the other organic reflexes were normal. The knee-jerk was absent in the left leg, but there was a slight movement on the right side. The hands were not deformed, but hung listlessly in her lap or by her side; the feet were turned a little inwards.

In view of the bent condition of the spine and the evident difficulty in keeping herself erect, as well as to alleviate any irritation in the cord which would be produced or increased by this altered position, a well-fitting poroplastic jacket was applied, and in consideration of the probable developmental origin of the disease she was put upon a course of thyroid tabloids, and in the course of a few years ovarian tabloids were added. Both of these tabloids she has continued intermittently up to the present time.

I examined her recently and found there was still the same incoördination, but the paresis had not appreciably increased in the legs or the arms. The knee-jerks were completely absent in both legs. There was no deformity of hands or feet. She was no thinner. Nystagmus was present on turning the eyes in a constrained position. The speech has remained the same in general character, but now there is no delay in replying, and there is more animation. The expression of the face and the attitude are as first described.

On going into the family history I found her family were yeomen farmers, and for several hundred years had owned and lived at their farm. This is situated in one of the healthiest districts in the kingdom, where the people are notoriously robust and hardy. They have records of several intermarriages amongst relatives, probably brought about by the desire to keep the property in the family. The father and mother were second cousins, and were much above the average in physique and strength. The mother says her grandmother suffered in the same way as these children. There were nine children, five of whom are healthy and four developed this disease.

The eldest child, a girl, was said to commence the disease at the age of 14, and died from it at the age of 26, being then unable to leave her chair to which she was lifted out of bed. The feet and hands, they say, were deformed in the same way as the two cases that follow.

The eldest son commenced to show symptoms between 13 and 14 years of age. When I saw him he was a man of enormous physique, 6 feet 2 inches in height, and broad in proportion. He was helped from bed every morning into a specially made massive and immovable chair where he remained all day. His mental powers were good, his speech and facial aspect were as described in the first case, and the eyes were normal; there was complete paresis of the legs with great stiffness, and the legs were swollen to an enormous size, with the skin coarse and pitted, almost suggesting elephantiasis. The feet were characteristically deformed, short, stumpy, with high-arched instep, with the toes over-extended at the interphalangeal joints. When I first saw him there were a number of deep excavated foul and painful ulcers in the legs; these, they said, had been caused by slight knocks. They slowly disappeared after prolonged treatment, and as great care was exercised not to knock them there was no recurrence. He said that the least scratch or cut was difficult to heal. The paresis was almost complete in the arms and hands; he could, however, lightly grasp between the index and second fingers; the thumb was entirely useless. The manus cava was well marked. Lateral nystagmus was also present in fixing the eye at an unusual angle. There were no crises, nor neuralgias of any kind. The feet were drawn inwards so that they rested on their outside edges. He died eight years ago from pneumonia at the age of 42 years.

The next child affected, a girl, showed symptoms first at the age of 14 years. She was able to get about up to the age of 35, but is now unable to walk or feed herself. She has slight power of movement in the arms and only with great difficulty can grasp a pencil, when it is held up to her, between the index and second fingers. Her feet and hands show the pes cavus and manus cava symptoms in a typical manner. Nystagmus is present. The speech is thick and monotonous and the attitude and facial expression are similar to the cases already described, with well-marked bending of the spine. The eyes are normal and the sight is good. She complains of no pain and says she should be well if she only had the use of her limbs. During the last two years her legs have begun to swell, and the swelling is now well marked, but not extensive, from three inches below the knee downwards. The swelling does not pit easily on pressure and the skin in the affected part is beginning to get coarse, but there are no ulcers.

The second son, although not afflicted with this disease, is mentally deficient. He is, however, a well-grown powerful man. With this exception, all the children are mentally much above the average and are fine specimens of humanity, one son having a wide reputation as an athlete.

The only case which has been treated for the constitutional disease is the one first described, and in view of the fact that the disease had already existed for nearly eight years and taking into account the age of the patient when treatment was commenced, I think that we may regard the progress of this case as favourable. It is impossible to say that the disease has been arrested; in fact, in the nystagmus and knee reflexes the disease has made some headway, but, as the history shows, slight improvement has taken place in some respects. Further, the locomotive powers and the use of the arms are quite as good now as they were when I first saw her 11 years ago.

It would be interesting to know the result of continuous treatment of the same kind applied in the early stages of Friedreich's ataxia, especially in young patients in whom active development is still progressing.

The history of these cases strongly supports the theory that the disease is hereditary, and bears out the idea that it may be caused by some error in the developmental forces, which is not accidental and which may possibly arise in some cases from consanguinity. But apart from the interest in the hereditary character of this disease to which this range of cases clearly points, there are some clinical aspects which I have not seen recorded hitherto. Œdema appeared in the three children who had suffered for the greatest number of years and was a symptom which developed late in the course of the disease and which progressed *pari passu* with the paresis. At the same time the skin also underwent a progressive change, becoming in the first place coarse and pitted and eventually assuming almost the appearance of elephantiasis. In these cases it was associated with trophic ulcers, which, however, were different from the ulcers found in cases of locomotor ataxia and other spinal lesions in that they were markedly painful.

Shelton, Stoke-upon-Trent.

DISPLACEMENTS OF THE SEMILUNAR CARTILAGES.

BY KENELM H. DIGBY, M.B., B.S. LOND.,
SURGICAL REGISTRAR, GUY'S HOSPITAL.

CERTAIN joints in man possess interarticular fibro-cartilages, namely, the knees, the temporo-mandibular articulations, the sterno-clavicular joints, and the joints between the bodies of the vertebræ. The triangular cartilage separating the inferior radio-ulnar from the wrist-joint is an additional instance. In each case the interarticular cartilage forms a more or less complete partition, producing a double joint, each part of which has its own distinct movement—a movement which (except in the case of the intervertebral joints) is of a different kind from that of the neighbouring part.

In the knee, on the femoral side of the interarticular cartilages, hinge motion of flexion and extension takes place; on the tibial side a slight degree of rotation is permitted during flexion. In the temporo-mandibular joint a gliding backwards and forwards takes place above the interarticular fibro-cartilage, whilst below the cartilage hinge movements of opening and closing the mouth are possible, together with some little rotation. In the sterno-clavicular joint up-and-down movements are said to occur on the clavicular side, and forward and backward movements on the sternal side of the interarticular cartilage. The triangular cartilage, uniting the radius to the styloid process of the ulna, by its upper surface axially rotates on the ulna during pronation and supination, but its lower surface helps to form the wrist-joint proper at which backward and forward or lateral movements can occur. The spine gains increased range of movement from the duplication of the intervertebral joints by the discs, but the kind of movement in adjacent synovial sacs is similar.

With the exception, therefore, of the intervertebral joints, the *variety* of movement in a joint is increased by the presence of interarticular cartilage. Should an interarticular cartilage lose its attachment, it is liable to shift its position and interfere with the mechanism of the joint. This is evidenced in the internal derangements of the knee and of the temporo-mandibular articulation. The other interarticular cartilages in man are so securely anchored as to resist detachment. The general rôle of interarticular cartilages has thus been outlined. In the special case of the knee certain points in their structure and function require closer examination.

The general shape of the cartilages is suggested by their name—semilunar. But there are two important points in their conformation which are less frequently emphasised. In the first place, they are wedge-shaped in section, with the apex pointing into the centre of the joint (*vide* Figs. 1, 2, 3, 4), and so, considering that both upper and lower surfaces are smooth and freely lubricated with synovial fluid, it is difficult to imagine that a normally lubricated, undetached cartilage should become severely squeezed between femur and tibia. In the second place, whilst the lower surface of each cartilage is flat, gliding easily on the flat top of the tibia, the upper surface is concave, so that each semilunar cartilage forms a socket for one femoral condyle. The oval shape of the internal semilunar cartilage is associated with the greater antero-posterior surface of femur in contact with it during complete extension. During flexion the internal condyle of the femur is in close articular contact only with the posterior portion of the internal semilunar cartilage. (Fig. 1.) The base of each wedge-shaped cartilage is planted fairly upon the capsular ligament, the fibres of which pass into the fibro-cartilage.

Fig. 1.

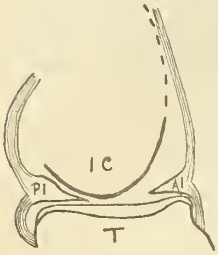


Fig. 2.

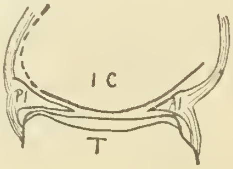


Fig. 3.

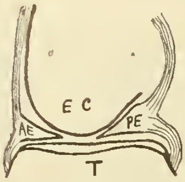
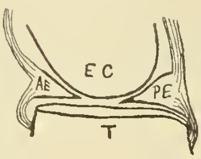


Fig. 4.



Figs. 1, 2, 3, 4.—I C, Internal condyle of femur. E C, External condyle of femur. T, Upper end of tibia. A I, Anterior part of internal semilunar. P I, Posterior part of internal semilunar. A E, Anterior part of external semilunar. P E, Posterior part of external semilunar.

These figures are diagrammatic sections: 1. Through the internal condyle in flexion. 2. Through the internal condyle in extension. 3. Through the external condyle in flexion. 4. Through the external condyle in extension.

Note the wedge-shape of the semilunar cartilages in section, their superior concavity, and that the internal condyle only completely occupies the internal semilunar in extension. In flexion it does not touch the anterior end of the semilunar; the ligamentum alarium fills the interval. The diagrams also show the anterior part of the capsule tight and the posterior part of the capsule relaxed during flexion.

The so-called "coronary ligament" is nothing but that piece of the capsule, stretching from the periphery of the cartilage to the tibia, which has a length of about half an inch and upwards. Since the cartilage is attached to the capsule much nearer the tibia than the femur, it follows that it has closer tissue connexion with the tibia than with the femur. And this at first sight is what renders the separation of semilunar from tibia difficult of comprehension. But it must be remembered that if there be no direct anatomical union of femur and semilunar there is, nevertheless, in virtue of the upper concavity of the semilunar a close functional union, inasmuch as the femoral condyles are firmly fixed in the hollows of the semilunars by the weight of the body, atmospheric pressure, and muscular tone. So strong is this union that in excessive rotation at the knee the semilunars tear their capsular anchors before parting company with the femoral condyles with which they have only indirect tissue connexions.

The chief movements at the knee are flexion and extension. Such movements can only take place between the femur and the interarticular cartilages. For, below the cartilages, the opposed articular surfaces are approximately flat. A peculiar kind of rotation accompanies the last stage of extension and the first stage of flexion. Owing to the greater antero-posterior articular surface of the inner condyle of the femur the completion of extension at the knee is accompanied by a slight rotation outwards of the tibia on the femur. This rotation has the effect of diminishing muscular strain in the erect position; partly because of tightening of all the ligaments; partly because, as hinge movements cannot occur without some rotation taking place, and as, in the erect position there is no tendency to rotation as there is to flexion, only slight tone of the biceps is required to maintain the attitude. But apart from this the flexion and extension are not the movements of a hinge joint for the parts of the femur in articular contact are constantly changing. It is probable that during extension the forward roll of the lower end of the femur (Fig. 5) will tend to sweep any loose body in the front of the joint backwards into its centre, and thus may be explained the presence of a displaced anterior end of the semilunar in the intercondyloid notch, a condition of things sometimes disclosed at operation. It is absurd to suppose, however, that this tendency could result in detachment of a healthy semilunar cartilage. Moreover, the first detachment of a semilunar cartilage does not occur during sudden extension of the knee.

Fig. 5.

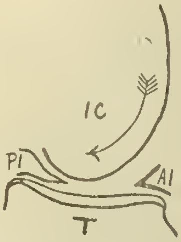
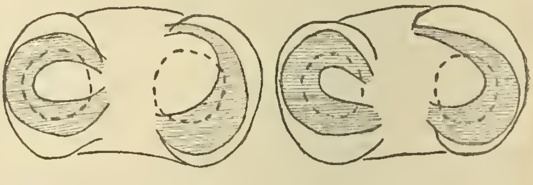


Diagram to show the "roll" of the femoral condyles during extension owing to fresh parts of the femur coming into articular contact. I C, Internal condyle here shown in flexion. T, Upper end of tibia. A I, Anterior end of internal semilunar cartilage. P I, Posterior end of internal semilunar cartilage.

In addition to flexion and extension anatomists describe a rotation which takes place between the semilunar cartilages and the tibia. I have heard it said that such movement does not occur and that the apparent rotation really takes place at the foot. That there is real rotation of the tibia when the knee is flexed is shown by the alteration of direction of the inner surface of that bone. This is proved also by the fact that, where the foot and ankle are immoveably cased in plaster-of-Paris and the thigh fixed, some abduction and adduction of the foot still occur, and these movements could then only be produced by rotation at the knee. If a spring-clip with a pointer attached be made to encircle the lower part of the leg where the bones are subcutaneous the degree of rotation can be fairly measured. The range of inward rotation is about twice as great as that of outward rotation.

This rotation below the semilunar cartilages does not occur in the fully extended limb, for then nearly all the ligaments are tight. Indeed, when everything is severed except the crucial ligaments, these are still sufficiently taut to prevent the slightest rotation. (The inability to rotate has nothing to do with the adaptation of bony surfaces in extension, for in all positions the articulating plane of the tibia is a flat surface.) The rotation during flexion is permitted by the lax state of the ligaments. The mechanism of this rotation can be seen in any dissected joint. Each semilunar cartilage is firmly fixed by its ends to the middle of the joint. Peripherally the capsular attachments are lax. In rotation the tibia rotates beneath the cartilages, so that relatively to the upper surface of the tibia one cartilage swings forwards

Fig. 6.



Diagrams to show rotation of the tibia below the semilunar cartilages during flexion of the left knee, as seen from above. The simple outline is that of the upper end of the tibia, the shaded areas denote the semilunar cartilages, the dotted circles are intended to represent (quite diagrammatically) the femoral condyles. The left-hand diagram is of a flexed knee without any rotation of the tibia; the right-hand diagram is of a flexed left knee showing a slight degree of outward rotation. The front of the joint is above in the diagrams.

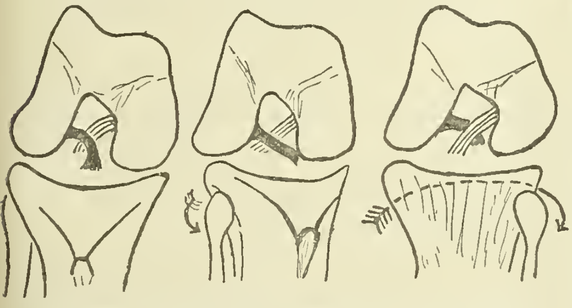
and the other backwards, each, of course, maintained in contact with the corresponding femoral condyle. (Fig. 6.)

Though the range of this rotation is slight its value is considerable. It adds to the fine adjustments of the foot which are required in running over unequal ground, and, what is perhaps more important, must play a great part in checking dislocation of the knee. If it were not for the slight "give" of the semilunars, any sudden wrench during flexion would be sufficient to throw the condyles of the femur off the tibia. Of course, the semilunar cartilages also tend to prevent dislocation by forming a socket, if a shallow one, for the femur. But if they were fixed to the tibia as the cotyloid ligament is fixed to the acetabulum, a sharp twist would still risk dislocation.

Outward rotation of the tibia at the knee is produced normally by the biceps muscle, inward rotation by the popliteus and inner hamstring muscles—viz., sartorius, gracilis, semitendinosus, and semimembranosus. Abnormally severe twists are caused by indirect violence usually applied to the foot, and there is detachment of the semilunar from the capsule and so from the tibia. These severe forms of violence are considered subsequently.

Inward rotation of the tibia is checked by a "winding up" of the crucial ligaments. Outward rotation is first checked by the attachment of the anterior end of the internal semilunar cartilage to the front part of the capsular ligament. Thus it is upon this portion of the attachment of the periphery of the internal cartilage to the capsule that chief strain is likely to fall. The action of the crucials is well seen if a knee-joint be denuded of all its ligaments except the crucials, and be flexed to a right angle. The tibia then can only be rotated inwards some 20°, but can be rotated outwards through two right angles so that the anterior border looks almost directly backwards (Fig. 7).

FIG. 7.



Three diagrams of the flexed knee-joint to show the action of the crucial ligaments in rotation of the tibia. All the other ligaments have been divided. In the left-hand diagram there is no rotation. The middle diagram shows inward rotation of the tibia checked early by winding up of the crucial ligaments. The right-hand diagram shows outward rotation continued through nearly two right angles, so that the back of the tibia is now in front. Outward rotation of the tibia first unwinds and relaxes the crucial ligaments. Hence these interosseous ligaments check inward, but not outward, rotation. The anterior crucial is black, the posterior crucial is lined in the diagrams.

Strain does not come upon the attachment of the posterior ends of the semilunar cartilages to the capsule, because rotation only occurs during flexion of the joint and the posterior part of the capsule is then relaxed and can follow either cartilage forwards, as opposed to the anterior fibres of the capsule which are tense, especially if the vasti be acting.

The semilunar cartilages are composed of fibro-cartilage. Cartilage is the one tissue in the body which can stand extreme pressure and friction. So that the laceration and pathological changes seen in displaced semilunar cartilages can hardly be due to squeezing between tibia and femur. If they were, since action and reaction are equal and opposite, one might expect the adjacent articular cartilage of the femur and the tibia to show similar changes, which, I believe, they do not in any recent case. The blood-supply of the semilunar cartilages comes through their peripheral attachments to the capsule; when a cartilage is detached its blood-supply is interfered with and it undergoes degenerative changes and may then be secondarily affected by pressure between femur and tibia. The smoothness of surface is lost, degenerative changes may follow, and the whole mass if sufficiently detached may be carried by the "roll" of the femur into the centre of the joint. I suspect that the pain of "slipping of a cartilage" is due to pull upon, and laceration of, the capsular attachments and not to any "squeezing" of a probably[1] insensitive fibro-cartilage. Any initial crushing of a cartilage, the attachments of which have not been lacerated, is well-nigh inconceivable.

Certain facts appear prominently in the histories of cases of internal derangement of the knee. The injury is rarely due to direct violence. The patient has often fallen, but the fall is the result rather than the cause of the injury. It is usually the indirect application of force which determines the lesion. The knee at the moment is almost always in some position of flexion, the quadriceps extensor muscle is often contracting, and commonly the weight of the body is being transmitted partly through the articulation. But the exciting force is a rotary one, either a twist of the foot when the thigh is more or less fixed, or a twist of the femur as the whole body swings round whilst the foot is, for instance, firmly planted on the ground. These points are illustrated in most careful accounts of the accident. The following are some of the usual methods of meeting with the injury. They have been taken from some of the reported cases and also from an examination of 100 consecutive cases which were operated upon at Guy's Hospital up till the end of 1907.

1. A slip or twist whilst running, walking, or dancing. The wrench at the knee, especially in recurrent cases, is often of a trivial nature.
2. Catching the inner side of the fore part of the foot against some obstruction, or catching the foot in a hole, or between two planks.
3. Turning suddenly on one leg, as in dodging a vehicle in the street, or as in football, golf, cricket, tennis, or gymnastic exercise.
4. Slips or short falls on to one leg, (with the foot in the abducted position), stepping off a platform on to the permanent way, or stumbling downstairs. The patient often describes his falling with "one leg doubled under him."
5. Being tripped up as in wrestling or football.
6. Attempting to rise after squatting some time upon the toes or kneeling with toes turned out.
7. Turning over in bed, the foot being restrained by the weight of the bedclothes. This is by no means so rare as might have been expected. A young woman, aged 21 years, "turned round in bed to stop an alarm clock and felt something go in her knee and the knee began to swell." Considerable displacement of the internal semilunar cartilage was found at operation.
8. Climbing a ladder or going upstairs, the former especially necessitating outward rotation at the knee.
9. Kicking at a football with the inside of the fore part of the foot, chiefly in the case of one unaccustomed to play. 14 of the 100 cases collected from the Guy's Hospital records were ascribed to football. Most of these would come under the headings 3 and 5.
10. The foot may be caught in some moving structure, as in the spokes of a revolving wheel.
11. A small number of cases have been reported as the result of direct violence. Except for these few cases nearly every accident was due to a twist or wrench.

It will be seen that whether the foot is twisted or whether merely fixed whilst the body rotates, an important factor is the leverage afforded by the projection of the foot at right angles to the leg. Man pays for the privilege of being a plantigrade animal by his liability to injuries of the lower limbs by rotary violence. The outward twist of the foot exerts a more powerful strain than does the inward. For to turn the mass of the body by twisting the foot outwards requires more force than to do so by turning the foot inwards. Moreover, the usual attitude of out-turned toes invites the outward rather than the inward twist. Most of the *indirect* injuries of the lower limbs are due to this outward twist: Pott's fracture-dislocation (with it spiral fracture of the fibula, so clearly demonstrated by Mr. W. Arbuthnot Lane), spiral fracture of the bones of the leg (where the fibula in consequence breaks at a higher level than the tibia), the usual displacement of the internal semilunar cartilage, spiral fracture of the shaft of the femur, and intracapsular fracture of the neck of the femur. The particular lesion which follows the outward twist of the foot is determined by the position of the rest of the limb, the age of the individual, and like factors.

---

[1] Quain's Anatomy, 1891, vol. i., Part II., p. 250, under heading of "Fibro-cartilages": "No nerves have been traced into any of the cartilages, and they are known to be destitute of sensibility." Moreover, in a case of displaced internal semilunar cartilage, in which complete extension of the knee was impossible, owing (as disclosed at operation) to part of the internal cartilage lying between the ends of the bones, the patient could bear his whole weight upon that leg without pain, and considerable force could be painlessly expended in attempts to straighten the knee.

In a careful investigation of the clinical histories it will be found that many semilunar displacements are certainly due to outward rotation, which is what one would expect; for the position of the foot invites outward rotation, outward rotation imposes a greater strain, and it is not checked by the crucial ligaments as is inward rotation.

Sir William Bennett has described exactly the pathological anatomy of internal derangements of the knee occurring in his large surgical experience of these cases. He finds the larger proportion involve the anterior end of the internal semilunar cartilage, the anterior two-thirds being more or less torn from the capsule or even the anterior end of the cartilage also detached. Whilst this is the common condition, injuries of the posterior part of the internal semilunar and also injuries of the external semilunar cartilage occur in a proportion of cases. Some of the lacerations of the posterior part of the internal semilunar cartilage found in addition to partial detachment are possibly produced during the removal of the cartilage, since they may be mimicked in removing normal cartilages post-mortem.

The common semilunar displacement is due to violence applied to the foot usually in an outward direction. It is difficult to give statistical proof for this statement as accounts of the accident rarely state whether the "wrench" was outwards or inwards. (It must be admitted that the patient sometimes states that the foot was turned inwards at the first accident.) The tibia rotates outwards beneath the semilunar cartilages which cap the femoral condyles. As the knee at the time is flexed there are no tibio-femoral ligaments which can limit outward rotation of the tibia. The strain may be expected to fall upon the capsular attachments of the anterior end of the internal semilunar and the posterior end of the external semilunar cartilage. As the posterior part of the capsule is relaxed it can follow the external semilunar into the joint. But the anterior part of the capsule is taut and the internal semilunar cartilage adhering to the femoral condyle is dragged from the capsule in front (Fig. 8) and shoots with a click into the joint. Even the anterior cornu may be detached and the loose part be rolled into the intercondyloid notch; or the periphery of the cartilage may remain on the capsular ligament and only the inner margin be torn away; or, the anterior end of the cartilage maintaining its hold, the femoral condyle may subsequently ride over the peripherally detached cartilage, which will then turn over into the joint like the "handle of a bucket," as it has been aptly described.

FIG. 8.

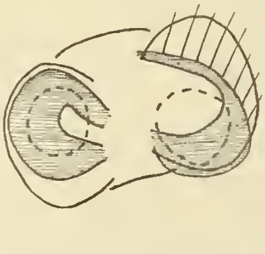
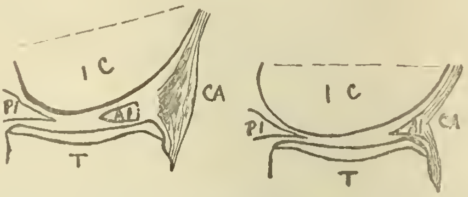


Diagram to show excessive outward rotation of the left tibia below the semilunar cartilages during flexion of the knee, as seen from above. The simple outline is that of the upper end of the tibia, the shaded areas denote the semilunar cartilages, the dotted circles are intended to represent (quite diagrammatically) the femoral condyles. The lines radiating from the anterior two-thirds of the periphery of the internal semilunar cartilage mark the region of greatest strain. Compare the two diagrams in Fig. 6. The front of the joint is above in the diagram.

During flexion any loose portion has room to lie free in front, but the greater antero-posterior length of the fully extended internal condyle can spare no room, so that unless the displaced cartilage be restored to its normal position complete extension cannot occur, and the so-called "locking" of the knee ensues. (Fig. 9.) Short of complete rupture of the peripheral attachment there may be laceration with hæmorrhage. This may give rise to a loose body in the joint, or even by its size may push the semilunar cartilage inwards, preventing extension, and, as Sir William Bennett pointed out, only slowly absorbing, the condition is not susceptible of manipulatory reduction. Laceration of the capsular attachment will give rise to the sickening pain, the local tenderness, and the effusion into the joint. Complete extension may be impossible. Its attempt does not always give rise to severe pain. The relaxed condition of the ligamentum patellæ first described in Hey's original paper may signify relaxed tone of the quadriceps, and so diminution of tension upon the lacerated capsule. More often, perhaps, the relaxed condition is the result of repeated effusions into the joint. Strong outward rotation of the tibia gives rise to pain over the peripheral attachment of the internal semilunar. Strong inward rotation is painless. But if the knee is locked it may be impossible to produce any rotation.

FIG. 9.



Diagrams to illustrate incomplete extension of the knee in a case of displacement of the fore part of the internal semilunar cartilage. I C, Internal condyle of femur. T, Upper end of tibia. P I, Posterior end of internal semilunar cartilage. A I, Anterior end of internal semilunar cartilage. C A, Anterior part of capsule.

The right-hand figure shows normal complete extension. The left-hand figure shows the capsule lacerated and slightly swollen, and the anterior end of the internal semilunar cartilage separated from the capsule and displaced inwards into the joint. Note how the slight elevation of the anterior part of the upper surface of the inner tuberosity of the tibia tends to prevent the anterior end of the internal semilunar cartilage from being squeezed back during extension of the knee after displacement has once occurred.

It is easy to see how conservative treatment may sometimes result in benefit. The cartilage, if displaced, is reduced by manipulation; its base lies in contact with the lacerated capsule, and, if all rotatory movements are avoided, adhesions will form. The subsequent use for some months of an Ernst apparatus, which prevents the least rotation at the knee whilst permitting flexion and extension, may result in a cure. The wearing of a boot with sole and heel higher on the inside has been employed to favour adduction and inversion of the foot. The avoidance of exercises, such as football and hockey, which involve twisting on the legs, is imperative. The patient is told to walk with the toes straight in front and not turned out.

The normal and pathological anatomy, the clinical histories and symptoms, the conservative methods of treatment which occasionally meet with success, all favour the view that excessive outward rotation of the tibia beneath the interarticular cartilages produces a laceration of the capsular attachments of the fore part of the internal semilunar cartilages which is the usual lesion in this class of injury.

I wish to express my indebtedness to Mr. G. F. Stebbing for his valuable advice and criticisms in connexion with this paper.

HOSPITAL FOR SICK CHILDREN: POST-GRADUATE CLASSES.—The winter session of lectures and demonstrations at the Hospital for Sick Children, Great Ormond-street, commenced on Jan. 13th, when Dr. A. E. Garrod demonstrated selected cases from the medical wards. On Jan. 20th Mr. E. M. Corner will treat of Appendicitis and its Treatment in Children. The lectures are given at 4 P.M. on each Thursday and are free to all qualified medical practitioners.

A CASE OF SEPTIC INFECTION CONSEQUENT ON MASTITIS.

BY ALEXANDER D. PITHIE, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.

THE patient in the following case was a married woman who was confined prematurely of an eight months' child on June 4th, 1909, and made a fair recovery. Her highest temperature during the first month was on the fifth day, when it was 99° F., with a pulse-rate of 102. In the right breast she had no milk, and in the left only a little, but not enough for the child, who accordingly had to be fed with the bottle. The left breast ached from the time the child was put to it till the time of sitting up, when it felt so heavy that the nurse supported it with a sling on the tenth day, after which it was more comfortable. At the end of the first month the patient menstruated, when the left breast became very tender and ached, a lump appearing which was so tender to the touch that she could only lie on her back. The district nurse then advised hot fomentations for four days, when the pain became less, but when the next period came on the pain was worse, and at the time of the third period, or about Sept. 4th, there was found a lump of the size of a walnut, which became inflamed and shiny, forming an abscess, which broke on Sept. 25th, and offensive thick yellow pus was discharged. She still continued the fomentation for ten days. The nurse saw her on Oct. 5th, and kept her in bed; the temperature was normal, but the patient was very weak and on that night she had a rigor, with sickness and faintness.

When called to see the patient on Oct. 7th I found her in an almost collapsed condition, with a temperature of 103° F. and a pulse-rate of 100, the temperature rising that night to 104·8°. The breast was red but not swollen, the redness being more of a skin rash. To the left of the breast there was an opening which was evidently superficial, as a probe could not be inserted to any distance, but no evidence of pocketed pus could be found. No other condition to account for the high temperature could be detected. Strychnine and quinine were administered and the temperature gradually came down till the 11th when it suddenly rose again to 105°. This time not only the breast but also the whole of the chest and upper part of the abdomen became covered with the rash which was of a bright red colour. The right breast also became painful and a painful spot appeared on the left shoulder. No evidence of suppuration was to be found. The patient at this time had the appearance of a person *in extremis*. I then injected 10 cubic centimetres of Allen and Hanburys' polyvalent antistreptococcic serum in the walls of the abdomen, repeating the injection in ten hours. As the vomited I decided to give it per rectum, which was carried out for the remainder of the treatment. For the first three days she retched after each dose of serum, but then tolerance was established and the nausea passed off. Administration of serum was carried out three times a day until the 15th when it was given twice daily, and then once a day till the 18th, when it was stopped, the temperature being normal and the pulse-rate 88. Her condition otherwise was very good and all appearances pointed toward a sure convalescence. On the 26th, however, the temperature once more began to increase, being 100·2° in the morning and rising to 102·4° the next morning, when a small superficial lump was found on the left breast. Again the whole of the chest and neck was covered with the rash. On the 27th serum was given twice, and on the following day three times, when the temperature came down to 97·8°, serum being given once daily and for the last time on the 30th. The patient then made a slow but satisfactory recovery, and is now quite well.

The points of interest in this case are the evident absorption of septic matter from a mastitis without any evident collection of pus; the prompt and satisfactory action of the serum after quinine had been given without good effect; and, finally, the recurrence of the symptoms in a few days after the serum had been stopped, and the controlling power of the serum when again resorted to. This leads me to think that in similar cases it would be well to continue the administration of serum for some time after all symptoms had subsided, if even in smaller or less frequent doses.

Lymington, Hants

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL AND SURGICAL SECTIONS.

Duodenal Ulcer.

COMBINED meetings of these sections were held on Dec. 14th, 1909, and Jan. 11th, Mr. G. H. MAKINS being in the chair.

Mr. B. G. A. MOYNIHAN delivered the opening address on Duodenal Ulcer, which was printed in THE LANCET of Jan. 1st, p. 20.

Mr. H. COLLINSON read a paper on the Analysis of 197 Cases of Duodenal Ulcer operated upon by Mr. Moynihan (1900–1908).

Sir T. LAUDER BRUNTON said that with regard to the season it had been his experience that gastric and duodenal ulcer—he could not distinguish them in his list of cases—was much more common in two periods of the year. He had not noticed it so much in mid-winter, but much more in autumn and spring. And the reason which he had assigned to himself was that people put off too long their winter clothing and so were chilled in autumn, and they put off their winter clothes too early in the spring, and in each case a chill was liable to result. Many years ago, when he was working at the physiology of the subject for Burdon Sanderson's "Hand-book for the Physiological Laboratory," he made very many experiments upon the stomach and upon the intestine. He tried, and in vain, to make gastric ulcers. He put a ligature round a small portion of the mucous membrane of the stomach which he had previously opened, and then closed the wound, keeping the animal under narcosis, and allowed it to remain four or five hours. He thought that at the end of that time an ulcer would be found at the spot where the blood-supply had been stopped by the ligature. But in none of the cases was he successful. Mr. Moynihan had left out reference to one part which he (Sir Lauder Brunton) would like to supplement—namely, the cause of the pain. The pain came on between two and four hours after the stomach had commenced to discharge its acid contents. Those acid contents came over the duodenum and smarted the ulcer, causing intense pain by the acid acting on the bare surface. This pain could be relieved by not putting anything into the stomach which causes a reflex contraction of the pylorus, the acid juice from the stomach was thus prevented from flowing into the duodenum, and any acid which was already there was quickly neutralised by the alkaline juice of the duodenum itself, possibly partly by some of the bile. That might be imitated by giving bicarbonate of soda in large doses. Time was a very important factor in the diagnosis, as Mr. Moynihan had said. Sometimes one might be misled as to the nature of the lesion, and yet be right as to its position. In one case which was brought to him the symptoms were pain four hours after feeding, and he thought there must be something wrong in the duodenum, but it did not yield in the ordinary way to the administration of alkalies, and he said he was doubtful as to whether it was ulcer or not, but he thought it must be something wrong with the duodenum. He never saw the case again. Eighteen months afterwards there was a description in THE LANCET of an operation on that patient. From that it turned out that he was right as to the position of the lesion, but it was a kink and not an ulcer. Time had also been very valuable to him in diagnosing duodenal ulcer when the diagnosis for a time would have been very doubtful. As an example he might mention that he was once asked to see a patient who was suffering from severe lumbago. On examination he found that the so-called lumbago was limited to the right loin; it did not extend round the back. It came on between two and three hours after a meal and was again stopped by food. He (Sir Lauder Brunton) concluded that it was a duodenal ulcer, and told the doctor that it could be perfectly well ascertained whether it was duodenal ulcer or not by giving a large quantity of bicarbonate of soda, and if it was duodenal ulcer, by neutralising the acid of the gastric contents one would stop the pain. The doctor tried it and the pain ceased immediately, so that there was some doubt as to the diagnosis. Two or three days afterwards the doctor told him that the patient had passed a large quantity of blood by stool. Then he (Sir Lauder Brunton) found that the patient had been allowed to get up, and he instructed that he should be kept in bed, and he also added something to the medicine, bicarbonate of soda, as it occurred to him that a large quantity of bicarbonate of soda would tend to make the surface of the ulcer softer. And to counteract that it would be better to put him on carbonate of lime, which would act as an astringent. But the difficulty about that was that it tended to cause constipation, and therefore some carbonate of magnesium was added. It was an exceedingly useful combination for duodenal ulcer, and he counselled that it should always be given in such cases, in addition to paying attention to the history of the case. He never advised operation unless he found by using mixed carbonates the pain was at once relieved by them. In one case which he saw he tried that plan; he was not successful, and he wondered at it. But the history of the case seemed to point so clearly to gastric or duodenal ulcer that he thought it must be ulcer. In that case, as Mr. Moynihan had mentioned, the pain was not on the right side but was rather under the left ribs, and that further misled him. He put the patient to bed in the ordinary way and kept her on rectal feeding for three or four days, and then gave her a very limited diet. At the end of that time she began to improve, but still she had occasional recurrent pain. That patient had suffered for about a couple of years or more from regularly recurring attacks of pain, coming on about four hours after a meal, lasting for a short time and then disappearing. She had never had a sign of jaundice; there was no tenderness over the liver. After being in the hospital for a time she had what seemed to be a perforation, she became suddenly comatose and lay on the bed perfectly still. In all cases of gall-stones he had seen the patient had been writhing and moving about with agony, but in this case there was nothing of that sort. He asked a surgical colleague to see her and he said she could not be operated upon then as she was collapsed and would die from the operation—they must wait until she recovered. She did recover from the attack, and at the operation it was found there was no ulcer in either duodenum or stomach, but there were between 200 and 300 minute gall-stones of the size of a millet seed, and each of those had been sufficient to pass through the cystic duct without blocking the common bile-duct. She had so many of them that she was able to provide a small gall-stone for every meal for about two years before, and she had enough left there to serve for a meal each for 100 more days. That case showed that the diagnosis of duodenal ulcer from gall-stones was not always easy, and the two points he wished to lay stress on were first of all the necessity of keeping the surface warm in order to prevent the occurrence of either gastric or duodenal ulcer; and secondly, the use of mixed carbonates in large doses as a means of diagnosis. It was desirable to mention also that those mixed carbonates were a means of relieving the patients who did not wish to have an operation, and if combined with careful dieting and rest in bed with warmth to the surface he thought one might sometimes obtain cure without recourse to operative measures. But he was fully agreed that where the ulcer was obstinate and did not yield to such measures the surgeon must be asked to interfere.

Mr. FREDERIC S. EVE said that he wished first to congratulate Mr. Moynihan on the excellent results which he had tabulated. Although he agreed that as a rule the symptoms of duodenal ulcer were definite, yet there were certain important exceptions to that. The conjunction of symptoms of pain two or three hours after a meal, together with hunger pains, did not necessarily mean, in his opinion, that the patient had duodenal ulcer. He was convinced that a patient might have all the symptoms which Mr. Moynihan had described as those of duodenal ulcer and yet be suffering from a simple functional disorder of the stomach, whether it were called hyperchlorhydria or not. Until recently he had always found a duodenal ulcer at the operation when it had been suspected from the symptoms. But a fortnight ago he operated upon a patient possessing all the symptoms which had been described but in which no ulcer was present. It was such a striking case that he would briefly quote it. The patient was a man aged 30 years. He had suffered from frequent periodic attacks of abdominal pain for nine years altogether. A year before he had an attack which lasted something like six months. His present attack commenced 12 weeks before admission to hospital. He complained of pain in the epigastrium, coming on two or three hours after a meal. He often awoke at night with an attack of pain which was relieved by taking warm milk. He questioned the sister and nurse as to this, and, in his opinion, the patient had quite definite "hunger pain." He operated upon him but could find by palpation nothing in the duodenum. One of his colleagues who was assisting him pointed to a slight thickening and wrinkling of the peritoneum which he thought suggested an ulcer on the anterior surface, but he (Mr. Eve) could not find any thickening beneath it. He made an opening in the anterior wall of the stomach near the pylorus and passed his finger through the duodenum, but could find nothing. He therefore ungloved his hand and passed his bare finger in, and his colleague did the same. He also examined the interior of the stomach. There was no ulcer of either stomach or duodenum. This patient, therefore, had all the symptoms upon which Mr. Moynihan laid so much stress: marked periodicity of attacks and "hunger pain," &c., and yet no duodenal ulcer was present. Two days after that he met with another case, that of a man who had had precisely similar symptoms, and it was thought by several good observers that he had duodenal ulcer. In that case also there was no ulcer of the duodenum, but an ulcer on the lesser curvature two inches from the cardiac orifice of the stomach. There was no doubt that the diagnosis of duodenal ulcer was often beset with difficulties. In a patient who died in the London Hospital from perforation there was only pain for one week before his death. And yet he had a chronic ulcer on the anterior and posterior surfaces of the duodenum. He agreed with Mr. Moynihan in regard to the frequency of multiple ulceration of the duodenum. In the years 1907–08 there were 22 post-mortem examinations in cases of death from duodenal ulcer in the London Hospital. Twenty-one of them died from perforation and one from hæmorrhage. In one-third of those cases there were contact ulcers—i.e., ulcers on opposing surfaces of the duodenum—and in five of the 22 there were ulcers both in the duodenum and stomach. He fully concurred in the opinion expressed that an operation should not be delayed in any case of suspected duodenal ulcer. If the symptoms did not yield to medical treatment, or if a second attack occurred, he thought an exploratory operation should be done. His experience of gastro-enterostomy had been satisfactory, but one of his cases died 40 days after the operation, and after leaving the hospital, from uncontrollable melæna, which no doubt came from the ulcer. Therefore he did not consider that gastro-enterostomy was necessarily a curative procedure. He therefore advocated not only gastro-enterostomy but also narrowing of the pyloric orifice by a series of gathering sutures in order to prevent later closure of the opening made by the gastro-enterostomy. He fully concurred in the wisdom of Mr. Moynihan's advice—namely, that if the ulcer was situated on the anterior or outer surface of the duodenum in an accessible position it should be in-folded, but he could not agree with him as to the necessity of excising the ulcer. Mr. Moynihan had himself pointed out that ulcers of the duodenum were frequently multiple. If one proceeded to excise an ulcer on the anterior surface of the duodenum it was very likely there would also be one on the posterior surface, and that would lead to a complete resection of the duodenum, a proceeding which would be by no means free from danger. He wished to ask Mr. Moynihan whether, since he had adopted excision of the ulcer, he had associated it with gastro-enterostomy. If he did not he (Mr. Eve) thought there was a good chance of the symptoms recurring. Mr. Moynihan had not told the meeting what signs he relied upon to establish the fact that there was an ulcer of the duodenum. He could not agree with that gentleman that it was the invariable experience that the ulcer was plainly seen and demonstrable on opening the abdomen. In two instances which he could remember he had found it necessary to open the stomach by an incision and to insert his finger into the duodenum. In one of these cases (the man who died subsequently with hæmorrhage) he observed a thickening of the head of the pancreas which could not be distinguished from a chronic indurative pancreatitis. The duodenum was adherent to the pancreas in that region, but he had noticed in severe cases of chronic indurative pancreatitis that such a condition was not uncommon. He passed his finger through the pylorus and found a very deep ulcer on the inner surface of the duodenum, which penetrated the pancreas deeply. It was not large in diameter but just admitted the tip of his index finger. In the other case the patient presented all the symptoms of gastric ulcer and had hæmatemesis. On examination of the outside of the stomach he found no evidence of gastric ulcer, and therefore he explored its interior. On passing his finger through the pylorus he came upon a duodenal ulcer, but there was no ulcer of the stomach. He thought far too much stress was often laid on superficial changes in the peritoneum as establishing the existence of gastric or duodenal ulcers. In the case which he had quoted, in which duodenal ulcer was absent, there were changes in the peritoneum which might easily have been mistaken for thickening over an ulcer ; and he had noticed on the surface of the stomach thickenings and yet had found that no ulcer was present beneath them. He would urge on his surgical colleagues, for the sake of scientific accuracy and to guard against the possibility of error, that the examination of the interior of the stomach by incision should be much more frequently carried out ; and he believed that method had thrown considerable light on the pathology of gastric conditions. For instance, in 29 consecutive cases diagnosed by able authorities as gastric ulcer he opened the stomach itself 21 times, and in 12 out of those 21 no ulcer was present. The symptoms were either due to gastrotaxis or some allied condition. He therefore wished to urge the importance of that method of examination. If carried out carefully it did not increase the mortality, for in not one of those 21 cases did the patient succumb. Although he differed from Mr. Moynihan in some details he was nevertheless an admirer of his work.

Dr. W. HALE WHITE said he thought one thing which must interest many members present was not so much the part of the subject which had been dealt with that evening as that of the likelihood of medical men coming across those cases, whether they were very numerous, and how likely they were to be met with. Therefore he made out a few figures dealing with that point. The classical series of cases at Guy's Hospital compiled by Perry and Shaw showed that out of 17,000 post-mortem examinations there were only 70 cases of duodenal ulcer. That carried them down to 1892. But in the 3,800 post-mortem examinations for the last seven years there were 38 cases, so that showed apparently an enormous increase in the number of duodenal ulcers found. But on looking into the cases the reason for that increase was as follows: that now the medical profession generally recognised that the patients' only chance when perforation of gastric or duodenal ulcer occurred was to send them into hospital as quickly as possible, whereas in the olden days the trouble was not even taken to send them to the hospital—they were regarded as necessarily fatal. Looking at the matter again from the statistical point of view, in the last 12.000 medical cases admitted duodenal ulcer was diagnosed 33 times. But taking 1000 cases seen outside the hospital, duodenal ulcer was diagnosed 24 times. That seemed at first sight to give a very much larger number of duodenal ulcers among people seen outside the hospital than of people seen inside it. But there again the fallacies were many, because on looking into the cases one saw that of the 33 in the hospital 17 were fatal, again many perforative cases. And of the 24 outside the hospital only one was fatal, and that was fatal on account of hæmorrhage. He thought those figures showed the small number of in-patients compared with the number seen outside the hospital, and that there must be a great many people suffering from duodenal ulcer whose symptoms were not considered sufficiently severe to secure their admission to hospital. And as the subjects of the condition outside the hospital lived near the hospital and would come into the hospital for serious complications, it must be concluded that for a large number of people with duodenal ulcer hospital out-patient treatment sufficed. And with regard to cases seen outside the hospital, it must be remembered that in every one of those cases the patient was bad enough to require that there should be a second opinion on the case. So the supposed greater frequency of duodenal ulcer compared with 20 years ago was due to greater medical knowledge, which no one had contributed to so much as the work of Mr. Moynihan in this country and the Mayo brothers in America. With regard to the symptoms, he had thought over what appeared to him to be a picture of the pain of duodenal ulcer. But he would not weary the meeting with it, because it came to what Mr. Moynihan had said, and he did not think he could in any way improve upon Mr. Moynihan's description of the pain coming on at a definite interval after food, and the strange part which misled many people was the periodicity of the pain. The patients would go for months without pain, and everyone knew people who could go out to dinner for two or three nights a week for months and have no symptoms, but occasionally would have an attack so bad as to cause them to writhe on the floor in consequence of it. He had seen a man writhing on the floor in such an attack, and the cause of it was proved by operation to have been duodenal ulcer. One thing which he was accustomed to lay much stress on was local tenderness in the region of the duodenum, and a great help in diagnosis in those cases was a slight rigidity of the right rectus, compared with the left. It was that local tenderness which led to the great difficulty in diagnosis, for he agreed with Mr. Moynihan that the diagnosis of duodenal ulcer was not difficult. Of recent cases when surgical operation was done—in very many cases it was—the diagnosis was found to be correct in every case. It was difficult sometimes to tell whether a patient was suffering from duodenal ulcer or from gall-stones, not when they were passing gall-stones but when they were suffering from the pain which was due to gall-stone lying in the gall-bladder, too large a stone to pass down. He would have mentioned, if there had been time, a case in which there was confidently thought to be duodenal ulcer. As far as one could see from outside, the duodenum was healthy, but the patient had a large stone in the gall-bladder, which was removed, and the pain had ceased. It was possible that owing to the close contiguity of the gall-bladder and the duodenum to each other the symptoms were due to some trouble in the duodenum proceeding from the gall-bladder. That seemed to him to be the greatest difficulty in diagnosis in many of those cases. He had come across one or two interesting complications which had not occurred in Mr. Moynihan's descriptions. One patient was suffering from considerable parotitis, and in the last three months he had seen two subphrenic abscess cases in connexion with duodenal ulcer, and one of them yielded nearly two pints of pus, and it very well illustrated a point which was of help in diagnosis. A subphrenic abscess due to duodenal ulcer must almost necessarily be to the right of the suspensory ligament, and most subphrenic abscesses to the right of that ligament were due either to duodenal ulcer or to appendix trouble. But he thought the appendix ones practically never contained air, but the duodenal ulcer cases might. In that particular case, because the abscess cavity contained air they settled it was duodenal ulcer, and that turned out to be correct. Another interesting complication which he had come across was that once in a bad case of hæmorrhage one could feel a blood-clot in the duodenum. Hæmorrhage came on while she was lying in hospital and it was fatal. So the abdomen had been examined, and directly after the hæmorrhage a sausage-like tumour could be felt which gradually disappeared. Then the patient had another attack of hæmorrhage, from which she died. An ulcer was found at the post-mortem examination. Mr. Moynihan had carefully said that the operation was to be done for chronic duodenal ulcer. That, of course, naturally supposed there must be a stage during the patient's illness during which he or she should be allowed the benefit of other treatment to give the patient the chance of getting well. The more or less routine treatment which he had adopted had been to put the patient rigidly to bed, and she was fed on a mixture of egg and milk, half a pint of milk with an egg beaten up in it, and a teaspoonful of that at a time every half hour. The quantity was increased until the patient was taking two or three pints a day. In order to get into the patient large quantities of fat, which were so useful, cream might be added to the egg and milk or olive oil might be given, which in addition to being more fatty was slightly aperient, for these patients were often constipated. After a month or so of that treatment they could be given meat and chicken chopped up. But if after that treatment the pains continued he certainly thought the case ought to be handed over to a surgeon for operation. For one severe or two or three less severe hæmorrhages it was probably wise to do a short-circuiting operation even without waiting for medical treatment, for there were many fatalities from hæmorrhage due to duodenal ulcer. He had intended to ask Mr. Moynihan whether it was not an objection to excising an ulcer that the ulcers might be multiple, and therefore one or more of them might be left behind after the operation.

Mr. H. F. WATERHOUSE said he was glad to find himself in almost complete agreement with Mr. Moynihan, and that was not astonishing, for English surgeons had learnt most about the subject from Mr. Moynihan. One point which struck him exceedingly in duodenal as compared with gastric ulcer was the comparative frequency of the two in hospital as compared with private practice. In hospital practice he had had a vastly larger number of gastric ulcers, whereas in private patients the duodenal ulcers preponderated. In private practice he had had three or four duodenal ulcers to one of gastric. He took it that that was largely accounted for by the frequency with which gastric ulcer occurred in young anæmic servant girls. Duodenal ulcer which he had met with on the operating table had proved to be indurated and chronic and always easily felt and demonstrable. He thought Mr. Moynihan had done good service by pointing out that an ulcer which could not be felt—he would not go so far as to say which could not be demonstrated to the people in the operating theatre—was not properly a duodenal ulcer. Practically every duodenal ulcer which he had had, had been palpable. As to age, his statistics were in striking agreement with Mr. Moynihan's. They were commenced between 30 and 45; probably nine-tenths of the cases occurred in that age-period. But duodenal ulcer was not unknown in childhood. He had had one definite duodenal ulcer in a child under a year old, and another one in a child under 5 years of age. He thought the possibility of duodenal ulcer occurring in childhood had been overlooked by most writers on the subject. He was convinced it was not a very rare condition. Again, as regards multiplicity, he thought Mr. Moynihan had done useful service in pointing out that duodenal ulcers were frequently multiple. He had never felt more than four or five on the operating table. That possibility of multiplicity of ulcers should be a direct bar to any such operation as excision. In the treatment of such ulcers he used only, and should continue to use only, gastro-enterostomy. In spite of what Mr. Moynihan had said, he regarded excision of the ulcer as dangerous, and it must have a greater mortality than such an operation as gastro-enterostomy, in which, in careful hands, the mortality from the operation was practically *nil*. He would like one result of the present debate to be a general agreement, that excision of duodenal ulcers was to be a thing of the past and that every case of the kind was treated satisfactorily and sufficiently by means of gastro-enterostomy. He would like to refer to the frequency with which he had found gastric and duodenal ulcers in combination. It had been something like 1 in 4, and that led him to speak of the difficulty of diagnosis. Mr. Moynihan and Dr. Hale White said the diagnosis of these ulcers was not usually difficult. It might not be to those gentlemen, but he was afraid that to the ordinary man like himself the diagnosis of that condition had not infrequently been a matter of some considerable difficulty, and his difficulty had been in differentiating between gastric and duodenal ulcer, and where that difficulty had arisen there had generally been found to be both gastric and duodenal ulcer coexisting. Therefore he did not wish it to be understood that all members agreed as to the ease with which the diagnosis could be made. He had known the best physicians and surgeons make mistakes in the diagnosis between those two conditions, and also between duodenal ulcer and gall-stones. He had seen three or four cases of duodenal ulcer in which the pain radiated extraordinarily. It was not usually the case in duodenal ulcer, but was general in gall-stones. Where the duodenal ulcer caused such pain that the patient writhed on the floor it was very difficult to know whether it was a case of gall-stones or not. He was in agreement with Dr. Hale White with regard to tenderness: he regarded tenderness and a slight rigidity of the right rectus muscle compared with the left as valuable signs in diagnosis. He also agreed with the opener as to hyperacidity. In all the cases which he had had examined free hydrochloric acid had been found to be under the normal. A point in the diagnosis was melæna. That had been present in the majority of cases of the condition with which he had had to deal. And where no melæna had been obvious to the naked eye blood was found in the stools by microscopical examination. It was a cause of gratification to surgeons to known that the distinguished physicians themselves who had taken part in the discussion recognised fully that when medical treatment had failed it should not be prolonged to any great extent, but the case should be handed over to the surgeon before any harmful results, such as stenosis, had had time to develop. With regard to treatment, he considered that the one and only treatment was gastro-enterostomy, and as far as his experience went that was all-sufficient and satisfactory. He knew no operation which gave greater relief for any condition than gastro-enterostomy did for the condition of duodenal ulcer.

Dr. R. HUTCHISON said that a superficial study of Mr. Moynihan's writings would give the impression that "hunger pain" was a pathognomonic sign of duodenal ulcer. Similar pain, however, was noticed in certain cases of gall-stones and in certain cases of chronic appendicitis. What concerned the physicians, however, was whether a condition not organic at all but functional could manifest itself by the presence of a pain in the late period of digestion. Dr. Hutchison believed that there was such a functional condition and to it was applied the term "hyperchlorhydria." Patients suffering from excess of acidity complained of a pain to which the term hunger pain could not be denied and which was relieved by taking alcohol or partaking of food. Mr. Moynihan would probably reply that these cases not only suffer from hyperchlorhydria but also from duodenal ulcer. The point at issue was whether it was possible to have hunger pain from hyperchlorhydria apart altogether from duodenal ulceration. Dr. Hutchison believed that post-mortem evidence proved the absence of organic lesions in certain cases where hunger pain had been present. Operative evidence also bore out this view. He thought it advisable to operate in suitable cases for duodenal ulcer and further contended that after these cases had been operated on the patient should be kept under medical treatment for some considerable time. There was a tendency for the surgeon to think that the patient might on recovery from the operation go straight away and eat, drink, and be merry. He had known of patients who had done this with disastrous results. He considered that operation was not the end of treatment of these cases.

Dr. A. F. HERTZ was convinced that the old teaching based on pathological observations must be rejected and that Mr. Moynihan's conclusions as to the frequency in the symptoms of duodenal ulcer must be accepted with certain reservations. There was no doubt that the presence of free hydrochloric acid played an important part in the production of the pain of duodenal ulcer, as the pain was immediately relieved by alkalies and by the removal of the acid fluid present in the stomach. He could not agree with Sir Lauder Brunton that the hydrochloric acid itself was the direct cause of pain, as he (Dr. Hertz) had found that several ounces of 0·5 per cent. hydrochloric acid produced no pain when introduced by a tube into the empty stomach of a patient in whom an operation performed the same or the following day revealed the presence of an active gastric or duodenal ulcer. He did not consider that an operation should be recommended in the absence of obstruction until thorough treatment by diet and rest in bed for at least four weeks had failed to give relief or until frequent recurrences had occurred in spite of every precaution.

Mr. H. J. PATERSON said he had not found that the symptoms were anything like so typical as Mr. Moynihan had described. In 41 cases in which he had performed operation he was surprised to find what differences there were in regard to what the patients said about their pain; some said it was immediately after food, some said it was continuous, and a small number complained of hunger pain. He pointed out the advisability of finding out the means of diagnosing duodenal ulcer from gastric crises.

Dr. NATHAN RAW discussed the question of the frequency of duodenal ulcer, and said that in Liverpool the cases were not so many as had been reported at Leeds. He related details of a case in which the patient suffered from hunger pain, and in which it was found that there was a chronic thickening of the pylorus, but there was no ulceration present.

Dr. F. CRAVEN MOORE said he held a brief for acid dyspepsia and declared that hyperchlorhydria was a term based on a misconception of physiology and did not exist. Acid dyspepsia was associated with excessive secretion of normal gastric juice. This condition gave symptoms of hunger pain as met with in duodenal ulcer. He did not agree with the view that hunger pain had the profound diagnostic significance ascribed to it.

Mr. C. P. CHILDE described three cases of perforating duodenal ulcer which had occurred in his practice, the perforation being the first indication of the condition. In these cases he considered that gastro-enterostomy was the only feasible treatment.

Mr. MOYNIHAN, in concluding the debate, said that it was now a matter of general agreement that the symptoms which he had described were dependent for their presence upon a structural lesion, ulcer of the duodenum. They were at last escaping from the bondage of the vocabulary and were ceasing to apply incorrect and misleading terms, such as "acid dyspepsia" and the like, to an organic disease. The practitioners who were still submissive to the tyranny of the ancient text-books often quoted these authorities as being opposed to his opinions. It was true that these works contained no recognition of the facts that duodenal ulcer was a common disease, marked out by the plainest symptoms and admitting of easy diagnosis. Recent authors, however, were adapting their views to the wider knowledge with which the surgeon had lately equiped them. Precise inquiry into all the details of the anamnesis prevented a majority of the mistakes in diagnosis to which reference had been made. One of the difficulties confronting an author to-day was the desire of many readers for the most concentrated epitome of his message. The torrent of Niagara must be described in terms of the pipette. So "hunger pain," a term which had been debased and shorn of all the attributes with which he had clothed it, was held to indicate undoubtedly the presence of a duodenal ulcer. All the varied qualities of this important symptom, however, required consideration before a diagnosis based upon it could have any substantial value. We were entitled to say that by a careful study of the anamnesis, and from that alone, the diagnosis of duodenal ulcer could now be made with a degree of accuracy not exceeded in the case of any other abdominal disease. The physical signs were few, and of no real value in enabling a diagnosis to be made. Tenderness, muscular rigidity, and increased epigastric reflex on the right side might one or all be present, and if present were better marked during the time that pain was present. The only difficulties of diagnosis were concerned with the differentiation of duodenal ulcer from gastric ulcer, from gall-stones, and from appendicitis. If an ulcer were not found on palpation and inspection of the stomach or duodenum, inspection of the mucosa was useless. He held very confidently to the opinion that an ulcer which had been the cause of protracted and recurring symptoms had always reached the outer coats of the stomach or duodenum; it was never restricted to the mucosa. Instead of the unnecessary search within the stomach, the gall-bladder and appendix should be examined. The condition of "appendix dyspepsia" was important and as yet not generally recognised. If an operation were undertaken for the relief of long-standing symptoms believed to be due to a duodenal or gastric ulcer, and no ulcer were discovered, it was absolutely necessary that the appendix should be examined; in a notable proportion of such cases it would be found adherent and obstructed and its removal would be followed by a disappearance of all symptoms. It was quite inadmissible in such cases to perform gastro-enterostomy. The different views in respect of treatment, held by physicians and surgeons, would probably disappear as it became more widely recognised that the symptoms pointed to an organic and not to a functional disorder. If medical treatment in early attacks proved powerless to prevent recurrence, then surgical treatment would admittedly be necessary. If the ulcer were small and single, excision would cure the patient; if the ulcers were large or multiple, as was generally the case, gastro-enterostomy would be necessary. Many of the early unsatisfactory results of gastro-enterostomy were due to the wrongful application of this operation, the precise indications for which were now fully understood. After the operation the patients required supervision for some time.

MEDICAL SOCIETY OF LONDON.

Exhibition of Pathological Specimens.

A MEETING of this society was held on Jan. 10th, Dr. SAMUEL WEST being in the chair.

Dr. F. PARKES WEBER showed a Heart from a case of Chronic Malignant Endocarditis Simulating Splenic Anæmia. He said that the patient had visited South Africa several times and had often been in the Mediterranean and the surrounding countries. He contracted malaria when in the Straits Settlements about four years ago, and had had two slight recurrences since then. He had been treated at several London hospitals, where apparently the diagnosis of splenic anæmia was made. The spleen was much enlarged, its lower limit reaching a level of half-way between the umbilicus and pubes. There was a very decided leucopenia. The heart was large, weighing 21 ounces, and the left ventricle was hypertrophied. The cardiac musculature was very pale. There was old thickening of the mitral valve, and adherent to one part of the valve was a soft organised thrombus of about the size of a hazel nut. In the left auricle, and apparently growing from the inter-auricular septum, was a large polypoid excrescence, which measured about 70 millimetres in length and about 35 millimetres in breadth. It was attached by a short circular pedicle about 7 millimetres in diameter to a spot in the inter-auricular septum, about halfway between the thrombus on the mitral valve and the (closed) foramen ovale. The free end of this polypoid excrescence, which was evidently an old organised thrombus, was opaque, white, and hard, its surface feeling as if it were partially calcified. The decided leucopenia and chronic splenomegaly in the case seemed to point to a diagnosis of splenic anæmia or Banti's disease, but the post-mortem examination showed that the fatal illness was really a chronic form of malignant endocarditis. It had been abundantly proved that leucopenia was not pathognomonic of splenic anæmia, if splenic anæmia could be supposed to exist at all as a distinct disease.—Dr. F. DE HAVILLAND HALL said that in doubtful cases of so-called splenic anæmia some scepticism was warranted, and the possibilities must be considered of the cause being ulcerative endocarditis.—Dr. J. PORTER PARKINSON said he had had a case of the kind under his care, in which during life there was a constant leucopenia not to the same extent as in Dr. Parkes Weber's case, but it was quite a distinct condition. The necropsy revealed the presence of malignant endocarditis. —After Sir JOHN BROADBENT had narrated a case which was marked by intermissions, Dr. WEST said that it was not easy to decide what was meant by the term splenic anæmia. In regard to its relation to malignant endocarditis the difficulty occurred of rightly appreciating the sequence of events. It was possible that malignant endocarditis might be secondary.

Various pathological specimens were shown by Dr. LEONARD GUTHRIE, Dr. W. D'ESTE EMERY, Dr. F. LANGMEAD, Dr. B. H. SPILSBURY, Dr. ERNEST H. SHAW, and Mr. ARTHUR EDMUNDS.

Mr. A. FLEMING demonstrated the Serum Diagnosis of Syphilis by a Simple Modification of Wassermann's Method.

The new Leitz epidiascope recently purchased by the society was used for the first time at this meeting.

THE RÖNTGEN SOCIETY.

Radio-Activity and Animal Tissues.[1]

A MEETING of this society was held on Jan. 6th, Mr. C. E. S. PHILLIPS being in the chair.

Dr. W. S. LAZARUS-BARLOW, in the course of a paper on Radio-Activity and Animal Tissues, described experiments dealing in part with recognised radio-active substances and in part with animal tissues, with extracts of animal tissues, and with animal cells. He pointed out relationships between these classes in respect of their effects upon photographic plates, upon the leak of a charged electroscope, and upon the development of living animal cells. Dr. Lazarus-Barlow first gave details of experiments which enable the "skotographic" effects of tissues to be contrasted to some degree with the effects produced by recognised radio-active substances upon a photographic plate and then discussed the effects of the same substances upon electroscopic leak. In a certain number of cases, notably cancer material, which had been extracted with water and subsequently with ether, or had been extracted once and for all with acetone, the inorganic constituents of bone, and clay pipes, presence of the substance within the electroscope led to a more rapid leak of the electroscope than in their absence, and this whether the charge on the gold leaves was + or –. These substances, therefore, satisfied the physicist that they were "radio-active" in the physico-chemical sense of the term, and from the electrical side. It must be added, however, that each substance, and each of the numerous samples of each substance, was entirely without effect upon a photographic plate. On the other hand, he had met with a considerable number of substances which retarded electroscopic leak. The most striking of these were paraffin wax, cholesterin, gall-stone, liver substance (dried and powdered), and the watery, ethereal, or acetone extract of cancer tissue and of liver tissue. That retarding property on electroscopic leak was manifested whether the charge on the gold leaves was + or –. He considered that there was evidence that the retardation of the leak possessed a real significance, since he had found in the case of cancerous material that from a substance almost without effect upon leak it was possible to obtain a moiety which accelerated the normal leak and a moiety which retarded it. Summing up that portion of the research which dealt with the electrical effects it was clear that in certain cases the influence of animal substances upon electroscopic leak was identical with that exerted by recognised radio-active substances, differing only in the much smaller degree to which the animal substances accelerate the leak. He contended, however, as the result of his experiments upon the influence of an aluminium disc which had been kept in proximity to a recognised radio-active substance, that those animal and other substances which he had found to retard electroscopic leak, whether the charge on the gold leaves were + or –, had a no less close relationship to radio-activity than those which accelerated leak. But whether the term "radio-activity" would have to be extended to include retardation of electroscopic leak as well as acceleration or not, there was no doubt that the conditions under which a recognised radio-active substance was called upon to act had a profound influence upon its demonstrable electrical effect. That was a point of great importance when they considered that in the animal body no chemical substance acted in the form in which it was commonly known to chemists but always in one or other protein combination. That the iron of the blood was present in a form in which it did not yield the ordinary inorganic chemical tests but existed as an iron-globulin compound was probably nothing more than an example of a general truth. As the disappearance of the chlorides from the urine during the early days of an attack of lobar pneumonia seemed to indicate, even so universal and simple a substance as sodium chloride existed in the body in the form of a loose protein compound. Hence one could not assume that a radio-active substance, if present in the animal body, would be present in the form in which it was known to chemists and physicists, but would be modified in some way by its association with the protein molecule. On consideration it would be seen that the radio-activity manifested by a uranium compound, for example, and measured by the rate of leak which it induced in a charged electroscope, indicated only the surplus energy available after the internal electrical conditions of the molecule, whatever they might be, had been satisfied. That this was so was indicated by the fact that the more numerous, the heavier, and the greater the valency of the non-radio-active constituents of a radio-active compound, the less of that surplus energy remained available, the less did the compound accelerate electroscopic leak. In other words, in every compound of a radio-active element some portion of the total intrinsic radio-activity was bound or masked. In a long series of experiments published elsewhere Dr. H. A. Colwell and he had shown that that was the case. Here he would only recall one of them. If a uranium albuminate be made by dropping a solution of uranium nitrate into egg-white, collecting the precipitate, drying and pounding it, a pale yellow powder was obtained which yielded nearly 10 per cent. uranium on analysis. If then a small portion of that powder were spread evenly on a shallow platinum dish and placed within the electroscope the natural leak would show a certain acceleration. If, subsequently, the platinum dish with its contents were raised to a white heat the albuminous portion of the radio-active compound was completely dissipated into carbon dioxide and water, while the uranium portion remained in the platinum dish. On re-introducing the dish into the electroscope it would be found that the acceleration of natural leak had enormously increased. Obviously the amount of the radio-active substance and its area of exposure to the charged leaves had remained the same, but removal of the huge molecule had unmasked a considerable amount of the intrinsic radio-activity. He suggested that that experiment might not be without therapeutic promise. If it was possible to set free radio-activity from a radio-active compound by breaking it down from a highly complicated molecule to simpler ones, a means might become available for local application of radio-activity within the tissues of the body. Thus he had found that in the process of breaking down the complex uranium albuminate into the simpler uranium peptonate by ordinary processes of artificial digestion radio-activity became unmasked. One could conceive the possibility of determining that such a change shall take place at some given spot. The last experiments to which he wished to draw attention were of a different kind. Hitherto in the contrast he had tried to make between radio-active and animal substances the "test" material had been inanimate—a photographic plate or a charged electroscope; in those about to be described the "test" material was a living animal cell—namely, the fertilised ovum of ascaris megalocephala, an intestinal worm of the horse. If X rays, or radium, or thorium, or uranium were allowed to act upon a sample of these ova their normal rate of development was altered, and in the case of X rays and radium modified to a profound extent. It was impossible to enter into a minute description of the changes produced, but it might be said that in the case of all those radio-active substances the effect was the same, and dual. It consisted in two antagonistic influences, one of which accelerated the rate of development of the ova, while the other retarded it. It had not hitherto been found possible to separate those two effects, for they seemed to show themselves in different individuals side by side. The most that could be said was that short exposures seemed to accelerate, long exposures to retard, development. Nevertheless, every instance in which retarded development of the ova was greatly prodominant showed examples in which the sole recognisable result of exposure to the radio-active substance was accelerated development. If a similar preparation of ova were placed in near proximity to, but not in contact with, certain animal extracts, similar modifications of the rates of their development were observed. But instead of acceleration and retardation showing themselves side by side in the same sample of ova they were discrete. Thus a protein-free extract of the testis of the herring accelerated, while a similarly prepared protein-free extract of the ovary of the herring or of sheep's liver retarded, the rate of development. There was strong reason to believe, further, that the results in question were not chemical. It did not seem improbable that the influence exerted by the animal extracts upon the dividing animal cells was closely akin to, if not identical with, that exerted by recognised radio-active substances. If that be conceded it must be added that the animal extracts in question possessed strong skotographic powers, and unless they differed completely from all the other animal extracts he had examined they also retarded electroscopic leak.

---

[1] See the Croonian Lectures on Radio-Activity and Carcinoma, by W. S. Lazarus-Barlow, M.D. Cantab., F.R.C.P. Lond. (THE LANCET, 1909, vol. i., p. 1801).

Dr. S. RUSS commented upon the difficulty of accepting the experimental effects which had been termed "anti-radio-active." The ordinarily accepted view was that the natural leak of an electroscope corresponded to the production of ions in the air contained within the instrument, and that this action was increased by the presence of radio-active substances. The difficulty was to explain how other substances could cause a diminution in the number of ions. Dr. Russ next remarked upon the experiments in which an aluminium disc, previously exposed to radio-active substances, had caused a diminution in the natural leak of an electroscope when placed inside it. Although control experiments had been done by Dr. Lazarus-Barlow, it was difficult to avoid changes in the capacity of the instrument when introducing into it a conductor, such as the aluminium disc. If the capacity were increased there would be a corresponding diminution in the natural leak. With regard to the changes which had been observed in the activity of uranium and thorium when associated with the molecules of different substances, it was suggested that in a comparison of this sort the difficulty would be to secure that the same surface density of the radio-active substance was being dealt with in each case.

Dr. C. **RUSS** asked if there was evidence concerning the breaking down of the complex uranium albuminate unmasking intrinsic radio-activity.

Dr. G. B. **BATTEN** asked whether the radio-activity of animal substances had a definite effect upon the growth of new cells.

Mr. **GLEW** pointed out what an amount of variability might occur in the working of electroscopes and declared that gold leaf was one of the most indefinite things that could be used.

Mr. A. **LANDON WHITEHOUSE** spoke of the radio-activity of tobacco, and Dr. A. H. **PIRIE** pointed out the necessity of eliminating any chance of dampness in the substances used.

The **CHAIRMAN** said that according to their ideas of the action of radio-activity the retarding effect described by Dr. Lazarus-Barlow was quite novel and seemed to clash with the fundamental theoretical ideas which apparently underlay radio-activity.

Mr. J. H. **GARDINER**, Dr. **DUTTON**, and Dr. J. **GRAY DUNCANSON** also spoke, and Dr. **LAZARUS-BARLOW** replied.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Early Operation in Appendicitis.—Strangulation of the Epididymis and Testis by Torsion.

A MEETING of this society was held on Jan. 6th, Mr. C. J. **JACOMB-HOOD** being in the chair.

Dr. **HUGH GALT** showed some pathological specimens, including a Glioma of the Retina, removed by Mr. W. W. Griffin from a child aged 18 months; a Remarkable Atheroma of the Circle of Willis, probably syphilitic in origin, with occlusion of numerous branches; a Uric Acid Calculus, weighing 6½ ounces, removed post mortem from the right renal pelvis of a woman aged 75 years, in whom no symptom or sign of its presence existed during life; and a Stomach showing Multiple Malignant Tumours of an Unusual Type Attached to the Peritoneal Surface.

Mr. A. H. **BUCK** read a paper on Some Points in Favour of Early Operation in Appendicitis.

Mr. W. A. **BOWRING** showed a case of Separation of the Descending Process of the Upper Tibial Epiphysis in a boy, aged 13 years. About seven months ago he first noticed a swelling of both legs in the position of the tubercle of the tibia. He had complained of pain below the knees before the swelling was noticed. The pain was chiefly on movement and not at night time. He had played football during the winter months. X ray photographs showed the condition well.

Dr. **WALTER BROADBENT** showed a case of Cerebral Diplegia and one of Aortic Aneurysm.

Mr. A. G. **BATE** read a paper on two cases of Acute Strangulation of the Epididymis and Testis by Torsion. The first of them was a patient at the Sussex County Hospital under the care of Mr. R. F. Jowers, Mr. Bate being the house surgeon at the time, while the second presented himself recently at the Hove Dispensary. The first might be called a typical case; the second was an example of the rule that a large proportion of these cases were the result of anatomical abnormality. The great majority of the patients were youths at or near the age of puberty, those under discussion being respectively 15 and 16 years old. The usual mode of onset was that during or after active exercise the patient was seized with acute pain in the groin and scrotum, felt faint, and was nauseated or actually vomited. In one of these two cases there had previously been several slight attacks of "an uneasy feeling in the testicle." Constipation was often marked. The symptoms might therefore simulate very closely those of a commencing strangulation of a hernia; and as a large proportion of these cases of torsion were associated with imperfectly descended testes, the difficulties of diagnosis might be extreme. If the case was seen early it might be possible to differentiate with ease the epididymis, cord, and testis and to appreciate the fact that the testis was tense, that the epididymis was greatly swollen, and that the spermatic cord above the twist (which could sometimes be definitely felt) was normal. The epididymis might be found to be in an abnormal position, but this did not exclude the diagnosis of torsion, for the testis might have described one complete revolution, or the axis of rotation might be horizontal. The scrotum rapidly became œdematous and the local condition soon resembled one of acute orchitis. In both the cases Mr. Bate noticed that even after the scrotum had become acutely inflamed and swollen the spermatic cord could be felt in the inguinal canal neither thickened nor inflamed. In both of them the testes were in the scrotum, although the cord was short. When the testis was in the scrotum the history would suggest a mild degree of strangulated hernia on account of the pain, shock, nausea or vomiting, constipation, and local swelling. Pain was the most obtrusive symptom; shock was not marked; vomiting was not persistent; and constipation was not absolute. The first patient was admitted to the hospital for what looked like an acute orchitis. There was, however, no suggestion of gonorrhœa or of actual injury. The swelling was incised and a twisted cord was found, the twist being rather more than one complete turn. The testis was purple and the epididymis black with a dulled surface. Castration was performed, the scrotum being drained, and the further history of the case was uneventful. The second case differed from a typical case in two ways—namely, (1) in the occurrence of premonitory attacks of pain, at which times it was probable that the testis was partially twisted and that a certain amount of hæmorrhage took place into the epididymis; and (2) in the presence of anatomical peculiarities. The epididymis was slung from the cord by a narrow band, and it was this band that was twisted. The vas deferens was continued to the bottom of the scrotum, and here ended in a mass of tissue which, when cut, looked to the naked eye like testicular tissue. The most commonly cited causes of torsion of the spermatic cord were the strains and movements due to active exercise, the engorgements of puberty, and anatomical abnormalities. As regards the treatment, castration was nearly always necessary. Two cases, however, were on record where the twist was diagnosed and reduced by taxis. There were also on record three cases in which the twist was undone and the testis left *in situ*. Of these three cases the testes became atrophied in two and the third one sloughed. Attempts to anchor the testis had also proved ineffectual. Mr. Bate nevertheless thought that it might be possible to avoid castration if the condition was diagnosed in an early stage.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Discussion on Syphilis and Marriage.—Treatment of Phthisis and Other Conditions by Injection of Arylarsonates.—Cremation.

A MEETING of this society was held on Jan. 5th, Dr. **BYROM BRAMWELL**, the President, being in the chair.

Dr. C. W. **MACGILLIVRAY** introduced the subject of discussion, Syphilis and Marriage. He said that syphilis together with gonorrhœa and soft sore formed the chief varieties of venereal disease. The latter had little relation to marriage, while gonorrhœa led to disease and to a diminution of the population almost equal to that produced by syphilis. Syphilis during the active period of life did not lead to sterility, but 42 per cent. of miscarriages and abortions were due to it, and many of the children who survived were diseased. In cases where both parents were syphilitic the proportion of miscarriages might be 70 per cent., and Fournier had stated that of 90 women infected during the first year there were 50 abortions, 38 children were born alive, but soon died, and only two survived. As regards the attitude of society towards venereal diseases, Dr. MacGillivray said that nothing was done as to instructing young adults, but it was left to the physician to cure or prevent the contagion, and he might endeavour to prevent or delay marriage. The treatment generally occupied from three to four years, and the question of medical secrecy was alluded to. In referring to the historical aspect, Dr. MacGillivray said that with greater knowledge of the disease different views were adopted. Sixty years ago treatment for three to four months was considered sufficient. Fournier had stated in 1861 that a course of three months of mercury followed by three months of treatment by iodide of potassium was sufficient. In 1872 treatment for two years by mercury was deemed necessary; this had extended to four years in 1881, while in 1897 a six years' treatment was thought to be necessary at times. In cases of prematrimonial syphilis, the question arose as to whether the syphilitic should marry, and this was a difficult question to decide. In gonorrhœa the presence of the gonococci and complications guided one, but in syphilis the detection of the specific organism was not so useful a guide. The question did not so much lie in the fact of a cure, but as to whether the risks to wife, children, or self were so slight as not to enforce celibacy. In determining this question one had to consider it on purely sanitary and not on sentimental grounds. (1) Risks to the wife. About 75 per cent. of married women who were syphilitic had contracted it from their husbands (*a*) directly from syphilitic lesions on their husbands or (*b*) conceptionally, the infected fœtus infecting the mother in turn. After referring to Colles's law Dr. MacGillivray treated of (2) the risks to the offspring. He said that it was not remarkable that hereditary syphilis did not impair fertility unless the testicles themselves were affected. The parental syphilis was communicated by infected sperms or ova, or through the utero-placental circulation during pregnancy. The mother was not invariably infected and might later be infected from another source. Fully 28 per cent. of paternally infected fœtuses died in utero or shortly after birth, and if the mothers were infected the mortality was much greater. In cases of mixed hereditary syphilis the mortality was 60–80 per cent. in utero, while one-third of those born alive died within six months. If one parent suffered from heredo-syphilis, of 81 pregnancies there would probably be 28 abortions, 13 premature births, 7 dying soon after birth, and 33 would survive. As regard the conditions which were necessary to permit syphilitics to marry, it was first necessary to be sure of one's diagnosis. If a case were really syphilitic and marriage was to take place soon, then one ought to interdict it if the patient refused to submit to treatment. It was a most interesting but a difficult question to decide as to the duration of the contagion and the length of the transmissive period. An active syphilitic might beget healthy children. The mere fact of not finding the spirochæte did not show that the case was not contagious. There was no absolute proof of the non-contagiousness of tertiary lesions. It had to be remembered that secondaries might develop long after the usual period, while tertiaries might be precocious and both might be contagious and not amenable to treatment. Clinical observation showed that if secondary accidents had been absent for from 12 to 18 months, and if the patients were properly treated for 2½ to 3 years, the risks of contagion had ceased. A safe rule to adopt was that if there had been no manifestations for 18 months, and that a period of 4 years had elapsed since the primary sore, that the patient had been properly treated and was in good health, he might be allowed to marry. Exceptionally the contagion might persist for from 5 to 10 years after the chancre, and Fournier had related the case of a man who, 7 seven years after his chancre, procreated a syphilitic fœtus which infected his wife. The hereditary transmission was important on account of the danger to the offspring. Transmissibility persisted longer than the contagion. As to the treatment: without any, abortion was the rule; with treatment, healthy children were born; when treatment was stopped, syphilitic children were born. Treatment might not actually cure the disease, but at any rate would hold it in abeyance. In one case, a syphilitic woman bore seven syphilitic children, but during her eighth and ninth pregnancies she was under treatment and the children were healthy. She thought herself cured and gave up the treatment, with the result that her tenth child was syphilitic, but on resuming treatment her eleventh was healthy. Fournier stated that of 14 syphilitic married men untreated, in 45 pregnancies 37 children died, or a mortality of 82 per cent., while in another series properly treated 3 per cent. died. With respect to the personal risks to the husband as regarded marriage, malignant syphilis practically interdicted marriage for all time, and, in fact, nearly all such cases died early. Mild syphilis was often followed by severe tertiaries, which might kill the patient or cause chronic invalidism. As to post-matrimonial syphilis the question was one of infection. The husband had to be treated so as to prevent infection; he had to be instructed as to his mode of life; there was the question as to whether the wife should be told. If the wife were healthy but pregnant there was the question of treating the wife although she had no symptoms. Dr. MacGillivray illustrated his paper with numerous examples from his own practice.—Dr. T. S. **CLOUSTON** said that cases of idiocy, developmental general paralysis, and brain syphilis were the results of congenital disease which had come under his observation. Certain kinds of syphilitic idiocy were often associated with epilepsy; these were of a very incurable kind and shortened life to a great extent. Developmental general paralysis occurred very seldom, but was a direct result of syphilis and no anti-syphilitic treatment had any effect. About 1 to 3 per cent. of all syphilitics fell into general paralysis.—Dr. F. W. N. **HAULTAIN** said that in all cases where syphilis was acquired before or during conception abortion occurred. If syphilis were acquired during the first three months of pregnancy abortion was very frequent, and if it were acquired later then a healthy child was born. Paternal syphilis was by far the most frequent. He had great doubt in his own mind as to the truth of Colles's law. Some women aborted regularly and yet showed no trace of syphilis; such were cases of paternal fœtal infection. Treatment given to the mother was in reality treatment given to the fœtus because of the extreme solubility of the mercurial salts and because of their ready transmission through the vessels of the placenta into the fœtal circulation. In such cases the mother has really never had the infection.—Professor F. M. **CAIRD** said that of all the syphilitic men whom he had treated only one had written to him as to his condition after marriage. Of course, a great number of syphilitics died at an early age, usually before the age of 40. Many men infected had no treatment whatever. He had known of many men who had married from 7 to 10 years later and who had raised healthy offspring. There was no absolute time-limit as to the period which must elapse before marriage.—Dr. R. **CRANSTON LOW** said that a patient with syphilis might be cured and later might be reinfected. He thought that the Wassermann reaction would show whether the patient had or had not had syphilis.—Mr. J. W. B. **HODSDON** said that if syphilis were treated early and promptly it was a curable disease. He knew of one case where a man contracted a second attack of syphilis only two years after a first.—Mr. **ALEXANDER MILES** quoted Mr. Jonathan Hutchinson's statement that two years of effective treatment was sufficient, and that the four or more years of treatment as adopted in France was a counsel of perfection and hence not attainable.

Dr. R. A. **LUNDIE** and Dr. R. H. **BLAIKIE**, in a paper on the Treatment of Phthisis and Other Conditions by Injection of Arylarsonate, said that Dr. R. Van Someren had accidentally discovered, while working at sleeping sickness in Uganda, that this treatment does much good in leprosy, and suggested to Dr. Lundie and Dr. Blaikie that it was worth a trial in tuberculosis. Both he and they used sodium para-aminophenylarsonate ("soamin"). In several specific cases much benefit had followed. Dr. Lundie and Dr. Blaikie called special attention to four cases of advanced and extensive phthisis (bilateral), all young women who had been under observation for some time when this treatment was begun. All had much cough and expectoration, and in all these quickly diminished; in one both had ceased within a month, and no sputum could now be obtained for examination. In all, even one who was rapidly sinking from anorexia and vomiting, appetite quickly improved, to the great benefit of the general nutrition. Two had retained this improvement till now (over 13 months); one had had a recurrence of cough, hæmoptysis, &c.; one, who was vomiting before, had a return of her failure of digestion and died six months after treatment was begun. Two or three other tuberculous cases had shown less striking improvement; some were unaffected; none, so far as was known, was harmed. In most of their cases, including the four specially referred to, Dr. Van Someren's method had been followed—

namely, an injection of 10 grains on each of two successive days, then a fortnight's interval. In one of their 24 cases 10-grain doses caused abdominal pain and vomiting; but 5-grain doses were well borne. In contrast to the experience of others, they found that pain generally followed each injection in about one-third of the patients; it usually began 8 to 12 hours and ceased less than 24 hours after it, but in some cases immediately followed it.

Dr. W. G. AITCHISON ROBERTSON gave a communication on Cremation. He advocated its employment, on economic, hygienic, and medico-legal grounds. Dr. Robertson illustrated the paper with a series of lantern slides. As a result of the communication a large number of medical men joined the newly formed Cremation Society of Edinburgh.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Malignant Disease of the Large Intestine.—Empyema of the Ethmoidal Cells.

A MEETING of this section was held on Dec. 17th, 1909, Mr. JOHN LENTAIGNE, the President, being in the chair.

Mr. E. H. TAYLOR read a paper on the Operative Treatment of Malignant Disease of the Large Intestine.—Sir THOMAS MYLES asked if Mr. Taylor wished them to assume that in the operations under discussion the glands were obviously diseased at the time or that the removal of the whole area was intended as a prophylactic before there were any visible evidences of glandular disease. Assuming that the intermediate glands were palpably diseased, were they justified in concluding that removal of the area, immediately below the point at which the main branch of the inferior mesenteric artery came off, would guarantee the non-existence of the disease above that point? The paper had borne out what had been observed clinically—namely, that in certain cases of removal of the lower bowel when they got above a certain point it was better to remove more and get a mobile colon than to bring down the upper part of the rectum.—The PRESIDENT recalled a case which supported Mr. Taylor's remark, that the whip-cord form of cancer of the rectum was most amenable to surgical treatment and least likely to give trouble by recurrence in the glands at an early stage. The patient was an old woman suffering from obstruction of the large intestine. He opened the abdomen over the cæcum and found a lump on the left side of the abdomen opposite where his incision had been made. It seemed to be fairly moveable and he made an intestinal fistula by uniting the cæcum to the lips of the incision. The symptoms of obstruction at once got better, and shortly afterwards he performed a laparotomy and found the growth, which was a slow-growing cancer of the lower segment. He removed it with about two inches of intestine above and below. An end-to-end anastomosis was done and the patient apparently got quite well. Nine years later she became ill again and he found her in a dying state with unmistakable evidence of rectal cancer, and she died within a fortnight. The recurrence must have been at an exceedingly slow rate.—Mr. TAYLOR, in reply, said that even if no glands could be found diseased he thought the complete operation should be carried out. If there was reason to believe that some of the secondary glands were involved he was afraid that the hope of radical cure was not great. Where the glands along the inferior mesenteric artery were diseased the chance of a radical cure would be absolutely *nil*.

Dr. O. GOGARTY read a paper on a case of Suppuration of the Ethmoidal Cells, with Symptoms of Trigeminal Neuralgia. The patient was a man, aged 31 years, who had been suffering for 13 years from facial neuralgia of epileptiform type on the left side. The attacks were frequent and often recurred several times in an hour. For nine months he lived on fluids alone, being unable to masticate. In 1902 all the teeth, though sound, were removed above and below from the left side. Later the infra-orbital nerve was resected. He would not submit to removal of the Gasserian ganglion. In 1907 he came under Dr. Gogarty's care. On the antrum being washed out a streak of pus was found. Both antrum and frontal sinus were sound. It was then decided to open the ethmoidal cells. Pus came away freely when this was done and subsequently necrosed bone and débris were removed. There has been no recurrence of neuralgia since March, 1907. Dr. Gogarty's method of dealing with the case was as follows: The anterior third of the middle turbinal bone was removed with Grünwald's scissors and Stoerk's snare, and the superior margin of the cut surface was punched away to the lamella with a conchotome. Five days later a sharp curved knife (Hajek's hook) was pressed against this, turned into the ethmoidal cells and pulled downwards; pus at once came into view. A paroxysm ensued. When the patient recovered the opening was enlarged and the pus followed with a conchotome. The anæsthetic was local—40 per cent. of cocaine solution. No tampon was introduced; the anterior naris being plugged with cotton wool and the patient warned against blowing his nose. On the continent 92 per cent. of cases of empyema in the nose were supposed to come from influenza, and he considered that the present case probably began with influenza infecting the frontal sinus, the decomposition in the confined space breaking down the septa and giving rise to the empyema.—Mr. TAYLOR said that the communication might be the means of bringing before the notice of specialists an efficient operation, less extensive than the removal of the Gasserian ganglion.—The PRESIDENT also spoke of the desirability of giving a wide circulation to the paper, which was of the utmost importance and value.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 5th, Dr. A. Fulton, the President, being in the chair.—Mr. Kenneth Black read a paper on Surgical Odds and Ends. He first dealt with the value of X rays in detecting needles, bullets, and other foreign bodies embedded in the tissues, and pointed out that small foreign bodies frequently altered their position, and that an X-ray examination to be of use should immediately precede an operation. He gave several cases showing the uselessness of operating several days after the screen examination. Mr. Black then showed two Pathological Specimens of Medico-criminal interest, the first showing a knife blade embedded in the cervical spine between the axis and the atlas and dividing the spinal cord, and the second showing a portion of the left fifth rib with a portion of the skin and a bullet. The use of sulphur in acute infective cellulitis and tuberculous disease was then dealt with and again illustrated by several cases. An emulsion of powdered sulphur and glycerin with a little carbolic acid had been packed in the wounds described for 24 hours and was followed by fomentations. This appeared to be a most powerful germicide. Models of a Mouth Gag were then shown which were devised to overcome the difficulty of insertion between clenched teeth and to prevent the gag when inserted from slipping forward. Curious sequelæ discovered owing to the Workmen's Compensation Act were mentioned, a case of renal calculus following an abdominal injury two and a half years previously being described. Another case of a crushed wrist brought to light an old-standing osteoma. The value of flexion in treating fractures about the elbow-joint was next touched upon, and finally a note was made of a rare case of Phlegmonous Duodenitis.—The President, Dr. F. H. Jacob, Dr. J. Watson, Mr. J. W. M. Hunter, Mr. J. Mackie, and Mr. C. H. Allen took part in the discussion.

HASTINGS AND ITS CHARITIES.—A movement has been on foot at Hastings for some time for the coördination of the several local relief agencies in the town. In November the scheme was discussed at the annual general meeting of the local Charity Organisation Society, when it was explained that the reason for the change was the unconscious overlapping of the relief of distress in the town, which necessitated a waste of the funds and a waste of effort. No new principles are to be involved in the scheme, which will be representative of all organisations which are in one direction or another interested in the poor of the town. The proposal brought about some resignations from the executive committee of the society, but a conference of representatives of the various bodies, however, passed without dissent a resolution approving the scheme, and on Jan. 3rd the Charity Organisation Society adopted the proposal and appointed a committee of six to serve as the representative council to promote the scheme.

Reviews and Notices of Books.

A System of Operative Surgery by Various Authors. Edited by F. F. BURGHARD, M.S. Lond., F.R.C.S. Eng., Teacher of Operative Surgery in King's College, London; Surgeon to King's College Hospital; Senior Surgeon to the Children's Hospital, Paddington Green. In four volumes. Vol. II., pp. 720. London: Henry Frowde; Oxford University Press: Hodder and Stoughton. 1909. Price 36*s.* net per volume, or £6 net per set of 4 volumes.

WE are glad to see the second volume of this system. The first part deals with the operations for tuberculous affections of the bones, and this is contributed by Mr. Harold J. Stiles of Edinburgh. It contains much that is of great value, but perhaps the most striking article in the contribution is that dealing with resection of bone for primary tuberculous osteomyelitis of the diaphysis. The author speaks very favourably of this method of radical removal of tuberculous disease. He describes the operation carefully both in its general principles and as applied to individual bones, and the results which he has obtained go far to justify his predilection for this method of treatment. The method is comparatively little employed, but Mr. Stiles's arguments are very suggestive. The great difficulty most surgeons have experienced in employing this method has been to prevent shortening, especially in those parts of the limb where there is only a single bone. The modern tendency to eradicate completely tuberculous disease whenever accessible finds its latest expression in this method, but we are not prepared to say that the benefits obtainable by its employment are sufficiently striking to require a surgeon always to adopt it to the exclusion of milder if less radical methods. In the account of the evacuation of an iliac abscess the caution is given that care must be taken in the use of a flushing spoon. With this caution we thoroughly agree, for we feel sure that much harm is done by the vigorous use of a spoon on the lining of these abscesses, and we cannot think that any benefit following is at all commensurate with the risks it entails. The author employs the expression, "short long-bones," to describe the bones of the phalanges, the metacarpus, and the metatarsus. We cannot consider this happy.

The second part, dealing with the operations for tuberculous affections of the joints, is also from the pen of Mr. Stiles. He lays it down as clear that if a tuberculous focus is seen by means of a skiagram to be present at the end of one of the bones entering into the joint, the best treatment is to proceed at once to the evacuation of this tuberculous mass so as to cut off the source from which the infection of the joint is coming. We wish to express our cordial agreement with this method of treatment, for to allow a tuberculous focus to continue to infect a joint is quite contrary to modern methods of treatment. The whole section is extremely good, and we regard both of Mr. Stiles's contributions as valuable expositions of the most advanced treatment of tuberculous disease.

Mr. Edmund Owen has contributed the chapters dealing with the operations for hare-lip and cleft palate. We need say nothing about the operations for hare-lip beyond mentioning that we are glad to see the author draws attention to the danger of asphyxia in some cases where a wide hare-lip has been closed. This risk is often forgotten and some untoward results have occurred. With regard to the operation for cleft palate, it is well known that Mr. Owen is the chief exponent in this country of the method of employing pressure in the treatment of cleft palate in very young children. Reeves of Melbourne appears to have been the first to advocate the reduction of the width of the cleft by forcibly pressing together the two maxillæ, but to Brophy of Chicago is undoubtedly due the credit of making the method widely known, and Mr. Owen emphasises strongly the value of Brophy's operation in children under the age of six months. It is early yet, perhaps, to express a decided opinion of the value of Brophy's methods, and the success of the operation depends, not only on the skill of the surgeon, but also on the health of the child, but we are inclined to think that in the future some such method will be looked upon as the best mode of dealing with cleft palate should the health of the child allow of its performance. A few more diagrams illustrating the method might have been useful.

Mr. G. Lenthal Cheatle has written a chapter on operations for cancer of the lips and face. This is a department of surgery with which Mr. Cheatle's name has been much associated, so that we felt sure of obtaining a valuable account, and in this expectation we are not disappointed. Operations upon the jaws have been described by Mr. C. H. Fagge. We are interested to see that von Eiselsberg's operation for increasing the width of the jaw is described. We are not aware that his operation has ever been performed in this country, and we should be interested to learn of any case that has been done. It is decidedly ingenious and cases occasionally occur really suited for it.

Mr. Butlin's article on operations upon the tongue, tonsils, and pharynx is especially valuable because the author when writing it restricted himself to an account of those operations which he himself is in the habit of performing. Such an account, by a surgeon of Mr. Butlin's eminence, is of far greater value than any mere routine repetition of the operations described in the ordinary text-books. We are interested to see that Mr. Butlin gives a tabular statement of 200 cases of operation for carcinoma of the tongue which he himself has performed. Of these 57 were successful, the patients living free from recurrence for periods varying from three to 22 years. This is a result of which any surgeon might be proud, and these statistics, from which we have only quoted one item, will long remain of value as indicative of the results of the best practice. It is worthy of note that since the beginning of the year 1900 Mr. Butlin has performed preliminary laryngotomy in every case of removal of cancer of the tongue. The wound left by this laryngotomy is usually quite healed, we are told, in three or four days. In cases of malignant disease of the tongue where the extent of the involved tissues necessitates a very wide operation, and especially when the base of the tongue is affected, Mr. Butlin clears out the contents of the anterior triangle and excises the external carotid artery of the more affected side. At the same sitting the external carotid artery of the opposite side is tied or even partly excised if the patient's condition will stand it. 10 or 12 days later the operation on the tongue is performed. The disease is attacked from the opposite side of the neck, the pharynx being opened so as to afford access to the base of the tongue. We need not describe in detail the very thorough and extensive operation which Mr. Butlin performs in these widespread cases, but it is satisfactory to learn that immediate success has followed, even in old and feeble subjects, but a recurrence has been almost invariable, though it has in some cases been deferred for more than a year. The return of the disease occurs, he tells us, most frequently in the neighbourhood of the upper part of the larynx. He is strongly in favour of the systematic and routine removal of the glands of the neck in all cases of carcinoma of the tongue. We would direct especial attention to the valuable discussion inserted here on many points in connexion with the removal of glands in cases of carcinoma of the tongue; it presents clearly the arguments on both sides.

Mr. Fagge has contributed the section on operations upon the œsophagus, and it represents our present knowledge of the subject. It would have been difficult to select a more suitable writer for the part concerned with operations of the stomach than Mr. B. G. A. Moynihan of Leeds, and we need only say that the account is written with his usual clearness. All who are acquainted with the author's well-known work on the surgery of the abdomen will know what to expect in an article on gastric surgery from his pen.

Mr. G. H. Makins has described the operations upon the intestine, and we have seldom met with a more readable account of this important branch of surgery. The abundant illustrations still further increase its value. Especially would we commend the account given of the operations on the large intestine, perhaps the most difficult region of intestinal surgery; and that dealing with intestinal obstruction. Mr. Arthur E. Barker has contributed the section on hernia, and, naturally, the most important part of this deals with the radical cure of inguinal hernia. He prefers Bassini's operation, though he describes also Kocher's and Halsted's operation.

Operations upon the rectum and anus have been described by Mr. F. Swinford Edwards. The first portion of his article is devoted to methods of examination of the rectum, and though it is excellent as far as it goes, we cannot help regretting that it is somewhat brief. If there is one place in connexion with diseases of the rectum in which the general practitioner desires ample guidance it is in methods of examining that portion of the bowel, and therefore in a work like this it is highly desirable that the methods should be fully described. The accounts of the operations are really very good, but here also we must confess that to us they appear to err on the side of brevity. This may possibly have been due to limitation of the space allotted to the author; if so, it would only be another instance of the fact that in this country rectal diseases do not receive their fair share of attention.

We are glad to find that, on the whole, this second volume is fully equal to the first, both in interest and in quality.

A Handbook of the Diseases of the Nose and Throat. By EUGENE S. YONGE, M.D. Edin., Physician to the Manchester Hospital for Consumption and Diseases of the Throat, &c. With 55 plates. Edinburgh and London: William Green and Sons. 1909. Pp. 407.

Dr. Yonge has written this book entirely for the use of general practitioners and has, in view of what he considers to be their requirements, dealt very fully with the more common diseases of the nose and throat, but more concisely with the rarer ones. The subjects are grouped under four main headings—namely, diseases of the nose and its accessory cavities, diseases of the pharynx, diseases of the larynx, and fourthly, those morbid conditions of the upper respiratory tract which occur as complications and sequelæ of more or less general affections.

In the first section, after dealing with the anatomy of the nose and its cavities, the methods of examination are dealt with, and Dr. Yonge gives a great deal of thoroughly practical and most valuable instruction in the methods of treatment. Under the heading of nasal polypus we naturally turn to see what he has to say on the subject of etiology, and we are glad to read the temperate and straightforward way in which he deals with the opposing theories. Under the one heading Paroxysmal Coryza the author includes paroxysmal sneezing and idiopathic rhinorrhœa, which seems to be of more than dubious propriety. Although both conditions are considered as of nervous origin, that is certainly the only point they have in common, and a separate heading would be of advantage. The whole of the section on nasal disease, with the exception of the above minor point, is very well and clearly written.

We believe that Dr. Yonge will find it advisable in his next edition to devote more space to direct laryngoscopy as a means of dealing with all laryngeal diseases needing surgical interference, otherwise we have but little criticism to offer of the remaining sections. They are full of well-selected material treated in a readily comprehensible manner. We have confidence in predicting a wide sphere of usefulness for the book. The illustrations are excellent, the descriptions are clear, and the teaching is sound.

The Diseases of Infancy and Childhood: for the use of Students and Practitioners of Medicine. By L. EMMETT HOLT, M.D., Sc.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies and Foundling Hospitals, New York, &c. With 239 illustrations, including 8 coloured plates. Fifth edition, revised and enlarged. London and New York: D. Appleton and Co. 1909. Pp. 1171. Price 25*s.*

Dr. Emmett Holt's work on "The Diseases of Infancy and Childhood" has achieved an established position as a work of reference on the subject, and is of special value in presenting the methods of diagnosis and treatment employed by American pædiatrists. We have in reviewing former editions indicated the comprehensive character of the book and the general method of treatment of the subject. In our notice of this, the fifth, edition it will only be necessary to refer to the changes that have been made in order to incorporate recent advances in connexion with special subjects. The most important of these have been made in the chapters on General Tuberculosis, Tuberculous Meningitis, Cerebrospinal Meningitis, and Acute Poliomyelitis, some of which have been rewritten and others considerably revised.

The subject of tuberculosis is dealt with at some length in an interesting manner. Statistics are given from American and continental sources of the frequency of tuberculous disease at various ages, and are compared with the results of von Pirquet's cutaneous tuberculin reaction, a general correspondence being noticeable. In regard to the modes of infection Dr. Holt believes that the most frequent is from direct association with persons suffering from pulmonary tuberculosis, and that infection by milk is relatively rare. In regard to the channel of infection he strongly upholds the view that this is most frequently the respiratory tract, and points to the frequency of tuberculous deposit in the bronchial lymph glands in support of this. He admits that the tonsils may be a portal of entry, but dismisses with but curt reference the work of Calmette and his followers on the alimentary route of infection to the bronchial glands, which he believes to be exceedingly rare in the human subject. The most interesting section of this chapter is that dealing with the question of the diagnosis of tuberculous disease in childhood and infancy. By the simple expedient of exciting cough and collecting the sputum brought up on a swab or a piece of muslin caught in a pair of artery forceps, Dr. Holt has succeeded in demonstrating the presence of tubercle bacilli in over 80 per cent. of his hospital cases of pulmonary tuberculosis in infants. As a result he is enabled to describe a condition of tuberculous bronchitis, with physical signs like those of ordinary bronchitis, but with bacilli present in the sputum. A good critical account of the various forms of the tuberculin reaction is given, the inoculation, ophthalmic, cutaneous, and inunction tests being considered separately, and an account is also given of the puncture-reaction of Hamburger. Dr. Holt's review of the practical value of these tests in regard to the questions of reliability, freedom from risk, and ease of application is worthy of special commendation. For the inoculation or injection test Dr. Holt advises doses of half a milligramme for infants under six months and one milligramme for those who are older, which are larger than are often recommended. He states, however, that he has never seen unfavourable results, but he gives the average reaction as 103·3° F., which might be regarded as unnecessarily high. We could also wish that he had made some mention of the effects of repeating these tests at short intervals.

The account given of tuberculous meningitis is clear and concise. The diagnosis is also lucidly discussed, and useful directions are given as to the method of demonstrating tubercle bacilli in the fluid withdrawn from the spinal theca by lumbar puncture. Cerebro-spinal meningitis due to the diplococcus intracellularis of Weichselbaum is very fully dealt with, and the account given of the clinical forms of the disease and of its effects is admirable. Treatment is also discussed at some length, and the use of the serum prepared by Flexner is recommended as showing a larger proportion of recoveries than treatment by other methods. Chronic basilar meningitis is briefly described as a form of this disease.

The description of acute poliomyelitis includes the important information obtained in connexion with recent epidemics of the disease, notably the very extensive one in New York and its vicinity in 1907. The wider conception of the disease necessitated by the study of its epidemiology and morbid anatomy is set forth, and it is described as an acute inflammation of the central nervous system due to some obscure and as yet unrecognised infection. The description of the morbid anatomy is based on the observations of Harbitz and Scheel, and the failure of attempts to find organisms in the cerebro-spinal fluid in the New York cases is mentioned.

This fifth edition of Dr. Holt's book has evidently been carefully revised, and it should worthily maintain the reputation of its predecessors as a useful and authoritative work of reference.

Die Röntgenuntersuchung der Brustorgane und ihre Ergebnisse für Physiologie und Pathologie. By Dr. HANS ARNSPERGER of Heidelberg. Leipsic: F. C. W. Vogel. 1909. Pp. 263. With 52 plates. Price 12 marks.

THIS book constitutes a very important addition to the literature of the Roentgen diagnosis of chest disease; and no one reading it can fail to see that it is written by a man who is a more or less complete master of his subject. The author assumes a knowledge of technique on the part of his readers and devotes himself more particularly to the clinical aspects of the cases under review; but at the same time he deals somewhat fully with various questions of physiology and pathology, illustrating his views by means of investigations which he has conducted himself. There is a preface written by Professor Krehl of Heidelberg, laying stress upon the necessity of keeping in mind the physiological and pathological aspects of the case while making the Roentgen-ray examination. And Dr. Arnsperger with all his enthusiasm does not attempt to place Roentgen diagnosis on any higher plane than it deserves, or to encourage us to place reliance upon it to the exclusion of the more classical methods of diagnosis.

We are pleased to note the importance given to the oblique and lateral examinations, which are of the greatest value and afford evidence of the most positive kind. Yet they are too often neglected in conducting X ray examinations of the thorax. The section on heart disease is also of particular interest. Here the author shows how we may with practice recognise almost every pathological condition of the heart and great vessels. But in all cases he insists upon the screen examination being more important than radiography. The latter is useful to record what we have observed; the diagnosis must be made with the screen.

Not the least attractive part of the book are the 52 reproductions of X ray pictures of cases of thoracic disease. These are on heavy plate surface paper, and we should think that very little detail of the original negatives has been lost in the printing and reproduction.

The book will be found of great interest to physicians and radiographers alike.

LIBRARY TABLE.

Lectures on Surgical Nursing. By E. STANMORE BISHOP, F.R.C.S. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1909. Pp. 143. Price, cloth, 2*s.* 6*d.*, or leather, 3*s.* 6*d.* net.—This small book is altogether excellent. The technique of modern surgery is so elaborate, although reasonable, that most books dealing with the subject written for nurses may be said to come under the anathema pronounced in the Prayer Book against the Pie—namely, that it is more difficult to find out what to do than to do it when it is found out. But Mr. Bishop has given a set of lectures in which what to do is set forth in simple, plain, and interesting language. When any regulation is laid down the reason for so doing is given. His final paragraphs as to the behaviour of nurses in a private house are admirable. We have only one suggestion to make, and that is that in a future edition it should be made plain that the lectures do not deal with all forms of surgical nursing, as the title might be taken to imply. In fact, they deal almost entirely with female patients.

Household Pests and Household Remedies. By W. R. BOELTER. London: John Bale, Sons, and Danielsson. Pp. 172. Price 2*s.* 6*d.*—Mr. Boelter is well known as an uncompromising enemy of the rat, and in this book he has extended his vermin studies to other varieties of household pests, such as bugs, fleas, flies, lice, cockroaches, and the like. He gives a popular and more or less scientific account of these various pests, together with directions for getting rid of them. We should hesitate to confirm his view that midges are quite harmless, although as far as is known they do not transmit disease, while the common gnat Culex pipiens *is* a mosquito. Mr. Boelter's remarks upon the necessity for getting rid of bugs, flies, lice, and other vermin are sound. Even if they do not always spread disease, they are at least a sign of dirt and insanitary conditions, and therefore should be exterminated. We are particularly pleased with his plea for the owl and the kestrel as destroyers of mice and rats, which we hope may lead to these useful birds being spared by keepers and farmers.

The Value of an Exclusive Proteid Diet in Certain Digestive Disorders. By ERNEST C. YOUNG, M.D. Durh. London: The Medical Publishing Company. 1909. Pp. 23. Price 1*s.* 6*d.*—This is a reprint of a paper in the *Clinical Journal.* The author advocates a diet of minced meat and hot water for conditions of maldigestion, which he does not fully specify but describes somewhat vaguely as chronic gastritis, chronic hyperchlorhydria, and dilatation of the stomach. The chief points of difference between the method advocated and that of Dr. Salisbury is that the meat is cooked by a careful process and the water is taken not with, but between meals. There are some valuable hints as to the management of the severe forms of chronic dyspepsia given at the end of the paper.

Primary Studies for Nurses. By CHARLOTTE A. AIKENS. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 428. Price 8*s.* net.—The subtitle of this book defines its scope. It is called "A Text-book for First-year Pupil Nurses, containing Courses of Studies in Anatomy, Physiology, Hygiene, Bacteriology, Therapeutics and Materia Medica, Dietetics, and Invalid Cookery." The "courses of studies," however, seem to us to have fallen occasionally between two stools. That is to say, they are far too superficial to be of much use to an ignorant person who reads them with a desire for self-teaching, and if they are intended as guides for the teacher they contain information which every teacher should know. In the introduction, which for the most part is soundly and well written, we note that the courses are called lessons, to be amplified by the teacher. The anatomy and physiology section is weak, and would be only of the very slightest use unless amplified by an intelligent teacher. The section on hygiene, both general and personal, is good, especially that portion dealing with personal hygiene. The section of bacteriology is very poor and in our opinion might have been omitted altogether, except the paragraph entitled "General Considerations," which is useful. The section on materia medica and therapeutics, again, will want much amplification, and Miss Aikens in her next edition should get someone to revise her Latin; "alternis nocte" is not the Latin for "every other night," neither is "dolor unguente" the Latin for "when the pain is severe." The chapter on the administration of medicines is, on the whole, good, but hypodermic injections are not, as a rule, intermuscular injections, and in giving an ordinary hypodermic injection it is not muscle which is "picked up with the left hand," but skin. The remainder of the book is taken up by remarks on dietetics and invalid cookery, with a series of questions for self-examination. It is a very unequal work.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. III., No. 10, January, 1910. Oxford: At the Clarendon Press. Subscription, price 25*s.* per annum; single numbers, 8*s.* 6*d.* net each.—This number contains the following papers:—1. The Importance of Optic Neuritis and Retinal Hæmorrhages in the Diagnosis of Chronic Septic Endocarditis, by A. W. Falconer. In 15 cases of this condition optic neuritis was found in five, and appeared to be a toxæmic manifestation, occurring comparatively early in the course of the disease. In four of the cases there were also recurrent retinal hæmorrhages. In one case the discovery of the optic neuritis was of distinct assistance in the early diagnosis of the septic character of the endocarditis. 2. A case of Partial Heart Block occurring during an Attack of Acute Rheumatism, by John Cowan, James W. McLeod, and Albert R. Paterson. This paper is illustrated by good tracings showing that the condition was due to defective conduction in the *a.v.* bundle. 3. Rat-bite Fever, by T. J. Horder. Notes are given of three cases in which a periodic fever occurred after rat-bites, characterised by spontaneous recovery after prolonged course. Blood culture and blood film examinations gave negative results. 4. Remarks on the Study of a Case showing a Greatly Lengthened *a-c* Interval with Attacks of Partial and of Complete Heart Block, with an Investigation of the Underlying Pathological Conditions, by T. Wardrop Griffith and Alfred E. Cohn. A detailed record is given, illustrated by numerous tracings and a plate showing the condition of the heart at necropsy. Histological examination showed that the auriculo-ventricular bundle was seriously compromised in its main stem and that the left branch was cut off, the lesion being apparently syphilitic. 5. A Study of the Cerebro-spinal Fluid in the Infective Diseases of the Meninges, with Special Reference to Cerebro-spinal Fever, by Andrew Connal. A routine examination of the fluid drawn off by lumbar puncture in cases of meningitis is recommended, since changes in this fluid indicate the progress of the infection and their interpretation is of great value in prognosis and diagnosis. In meningitis from any cause the normal transparency of the cerebro-spinal fluid is lost. A yellow or greenish colour in a turbid fluid occurs in the early stages of cerebro-spinal fever. A coagulum is one of the earliest signs of meningeal inflammation. The absence of a reducing sugar from the cerebro-spinal fluid is pathognomonic of meningitis, but sugar is not absent at all stages of cerebro-spinal fever. Interesting details are given of the cytology and bacteriology of the fluid. This paper is the outcome of a large amount of laborious work, and is a valuable contribution to the literature of the subject. 6. Concerning Intermittent Hydrarthrosis, by Archibald E. Garrod. The peculiar features of this condition are clearly described and some cases recorded. The view of Schlesinger that it is nearly akin to acute circumscribed œdema is quoted with approval. Other associated conditions are considered and the treatment is discussed. 7. Critical Review: Lactic Acid in Metabolism, Part I., by J. H. Ryffel. The identification of lactic acid in the tissues and fluids of the body, its influence on various functions, its origin and fate are discussed, and a bibliography is appended.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D. Vol. XI., No. 4. Whole number, 44. Dec. 1st, 1909. Philadelphia and New York: Lea and Febiger. Pp. 334. Price $6 per annum.—This number contains reviews of recent work in regard to—1. Diseases of the Digestive Tract and Allied Organs, the Liver, and Pancreas, by Dr. David L. Edsall. Clear and adequate summaries are given of many recent interesting original papers from English, American, French, and German sources. Of especial interest are those on the genesis of gastric ulcer and the nature of auto-digestion by Katzenstein, the pathogenesis and etiology of chronic achylia gastrica by Faber and Lange, and the important work of Kuttner on carcinoma of the stomach. The problems of diagnosis and of the value of surgical methods of treatment are dealt with in a practical and suggestive manner. The observations of Hertz on constipation are also reviewed, and recent work on duodenal ulcer, appendicitis, and hepatic cirrhosis is summarised. The diagnostic value of the Cammidge reaction in pancreatic disease is discussed in some detail. Dr. Edsall not only gives admirable accounts of the various papers but also adds many valuable and pertinent critical remarks in regard to many of them. 2. Diseases of the Kidneys, by Dr. J. Rose Bradford. The recent important studies on the experimental production of nephritis by Dickson and those of Pearce on the production of œdema in nephritis so produced are carefully described and their practical importance is indicated. The subjects of orthostatic albuminuria, pyelonephritis, and persistent hæmaturia are also reviewed at some length. 3. The Surgery of the Extremities, Shock, Anæsthesia, Infections, Fractures and Dislocations, and Tumours, by Dr. Joseph C. Bloodgood. This section contains interesting reviews of many recent papers on surgical subjects. The various methods of inducing local anæsthesia, including that of Bier, are discussed. Fractures and dislocations are considered at some length. Some special forms of tumour are also discussed. 4. Genito-urinary Diseases, by Dr. William T. Belfield. The treatment of gonorrhœal conditions by serums and vaccines, the use of tuberculin in renal tuberculosis and of vaccines in the treatment of infections of the bladder by the colon bacillus are reviewed. Various papers on prostatic diseases and their treatment are referred to, and a further paper by Edebohls on Decapsulation of the Kidney is summarised. Dr. H. R. M. Landis contributes a Therapeutic Referendum in which much recent work is collated in regard to numerous drugs and other therapeutic agents. The volume as a whole is a useful and readable work of reference.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S., aided in the selection of papers by numerous collaborators. Vol. XXXIX., No. 5, Dec. 23rd, 1909. London: Cambridge University Press. Price 4*s.*—The contents of this number of the *Journal of Physiology* are: 1. On the Refractory Period of Muscle and Nerve, by Keith Lucas, Fellow of Trinity College, Cambridge, with seven figures in the text. 2. The Hexone Bases from Egg-white, by H. G. Chapman, M.D., and J. M. Petrie, D.Sc., F.I.C., Mackay Fellow in Bio-chemistry of the Linnean Society of New South Wales. These experimenters find the amounts of arginin, histidin, and lysin present in 100 grammes protein of egg-white to be: arginin, 2·39 per cent.; histidin, 0·66 per cent.; and lysin, 3·19 per cent. 3. Note on Asphyxia in the Spinal Animal, by R. Kaya (of Kioto) and E. H. Starling, with five figures in the text. 4. The Active Principle of a Bini Spear Poison, by P. P. Laidlaw, from the Wellcome Physiological Research Laboratories. The poison appears to be strophanthin. 5. The Catalytic Oxydation of Guiac Resin by Metallic Copper, by Hector A. Colwell, M.B., from the Cancer Research Laboratories of the Middlesex Hospital. 6. The Mode of Action of Nicotine and Curari determined by the Form of the Contraction Curve and the Method of Temperature Coefficients, by A. V. Hill, M.A., Scholar of Trinity College, Cambridge. 7. The Effect of Temperature on the Dissociation Curve of the Blood, by Joseph Barcroft, M.A., B.Sc., Fellow of King's College, and W. O. R. King, B.A., Travelling Student of Sidney Sussex College, Cambridge, with four figures in the text. 8. Water Rigor in Frog's Muscle, by Edward B. Meigs, instructor in physiology, Harvard Medical School. This number also contains the Proceedings of the Physiological Society for Oct. 24th.

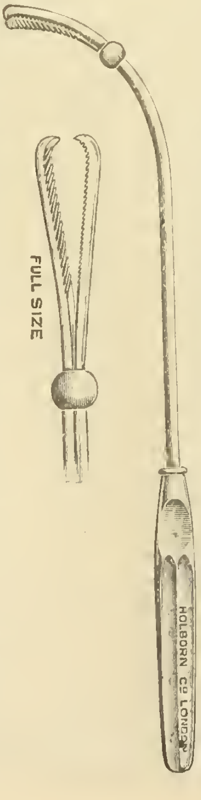
New Inventions.

A SWAB-HOLDER FOR THE POST-NASAL SPACE AND PHARYNX.

FORMERLY brushes were used for swabbing the throat, but since the advent of the aseptic age these have been largely discarded, for obvious reasons, in favour of cotton-wool swabs. In order that the pharynx and post-nasal space may be properly swabbed, the swab-holder must be correctly designed. 1. It must be easily sterilisable without damage to itself. 2. It must have a suitable curve. 3. It must firmly grasp the cotton-wool, and yet this latter must be easily detachable when required. 4. Its point must be so shaped and rounded as not to damage the soft parts. 5. It must have such a calibre as to pass into the post-nasal space easily and without force, and yet have rigidity associated with a certain amount of resiliency. 6. The handle must be of such a size and shape as to give a firm and satisfactory grip.

These points have all been well carried out by the Holborn Surgical Instrument Company, Limited, Thavies Inn, Holborn-circus, London, E.C., in accordance with suggestions from me.

W. H. KELSON, F.R.C.S. Eng.



AMMONIUM CHLORIDE INHALER (VAPOROLE BRAND).

UNDER the name of "vaporole brand" Messrs. Burroughs, Wellcome and Co., of Snow-hill Buildings, London, have introduced an ammonium chloride inhaler, which may be commended for its simplicity and its effectiveness. As will be seen from the accompanying illustrations, it consists of (1) a T-tube attached to (2) a wide glass tube terminating in a mouth-piece. The T-tube may be called the "laboratory" in which are contained the reagents ammonia and hydrochloric acid respectively. Each reagent is present in a small sealed glass tube ("the vaporole") wrapped in a little sack. The ammonia vaporole, after the sealed tube is fractured by a smart blow, is placed at the end of the T-tube marked alkali, and it is immediately followed by the acid vaporole fractured in the same way and placed at the opposite end of the tube marked "acid." The sponge in the large tube is moistened with water which serves to blend the ammonia and acid and to wash and purify the ammonium chloride fumes produced. On drawing air through the apparatus it passes first over the hydrochloric acid, with which it becomes charged, and then meeting with the ammonia gas ammonium chloride is produced. The fume inhaled has the fineness and appearance of smoke and is entirely free from any irritating properties which might be due to an excess of one or the other gas. The apparatus is packed in a neat and compact case containing several vaporoles of the ammonia and acid.

FIG. 1.

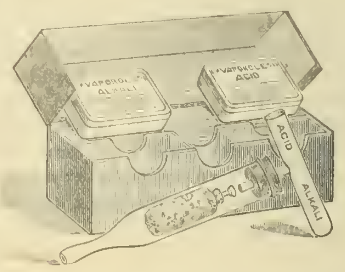
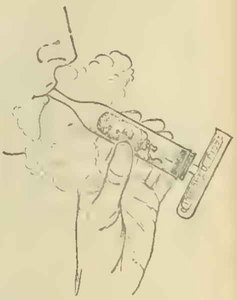


FIG. 2.



THE JOHN HERBERT WELLS FUND.

THE following is the tenth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	*s.*	*d.*
His Grace the Duke of Bedford	50	0	0
Lieutenant Frederick H. Lister, R.A.	10	0	0
Sir Thomas Barlow, Bart., K.C.V.O., M.D.	5	0	0
Her Grace the Duchess of Bedford	5	0	0
Lieutenant Owen Berkeley-Hill, I.M.S.	5	0	0
Pathological Society of Great Britain and Ireland	5	0	0
Mr. C. M. C. Shannon ...	3	3	0
Dr. J. B. Nias	3	3	0
Dr. Gwynne Lawrence ...	3	0	0
The Dowager Lady Broadbent	2	2	0
Dr. F. W. Andrewes ...	2	2	0
The Right Honourable Lord Ashburnham ...	2	0	0
Mrs. and Miss Brown ...	1	11	6
The Right Rev. the Lord Bishop of Brechin ...	1	1	0
O. W. L. H. (Malvern) ...	1	0	0

ADAMS *v.* POMEROY.

Dr. L. Garrett Anderson, 114A, Harley-street, W., honorary secretary of the fund raised to reimburse Dr. Martha Adams the legal expenses, amounting to about £100, which she incurred over and above the taxed costs in this action, acknowledges the following further subscriptions:—

	£	*s.*	*d.*
Mr. H. A. Ballance	1	1	0
Dr. Auguste Boyes	1	1	0
Dr. Henry Russell Andrews	1	1	0
Dr. W. Domett Stone ...	1	1	0
Dr. George McIntyre ...	1	1	0
Dr. James Taylor (Tandragee)	1	1	0
Dr. John A. Adams	0	10	6
Dr. William Frier	0	10	6

The total sum at present acknowledged is £56 4*s.* 6*d.*

THE LANCET.

LONDON: SATURDAY, JANUARY 15, 1910.

Jaundice of Obscure Causation.

THE functions of the liver, in spite of the very numerous researches which have been devoted to their investigation, still offer many problems for solution both to the physiologist and the pathologist. The glycogenic function and its study have been of great value, and its discovery by CLAUDE BERNARD was the precursor of the modern work upon the chemical inter-relationship of the various organs, which has led to such valuable advances as the discovery of internal secretions and hormones. The liver has no less important functions in regard to the metabolism of proteins and fats, although there are so many gaps in our knowledge of these subjects that it is difficult in any disordered condition of metabolism to assign the part played by the liver in its production, ready as the laity generally are to adopt this explanation of their digestive disabilities. The important and peculiar vascular relations of the liver, its large blood-supply, the well-established rôle it plays in the metabolism of waste blood pigment, and the influence which it appears to exercise in regard to coagulability all demonstrate its intimate relation to the maintenance of the normal and healthy state of the blood. In this connexion also the property which the liver appears to possess of neutralising certain toxins, whether of autogenous or extraneous origin, though as yet ill understood, is seen to be one of great importance. That the liver is very sensitive to certain toxic agents, the morbid histology of most acute fevers and of poisoning by many metallic and other substances amply demonstrates. Even in regard to the biliary function, which when deranged leads to such obvious effects, there is still room for much further information. This function is obviously closely related to that of blood destruction, and for long it was supposed that certain forms of jaundice originated directly from breaking down in excess of red blood corpuscles even in the absence of changes in the liver, such cases being referred to as hæmatogenous. It is now, however, generally conceded that jaundice is always of hepatogenous origin and that the absorption of the bile pigment into the lymphatics, and thence into the general circulation, is due to obstruction of the bile passages either of the larger ducts, as in the obviously obstructive cases, or of the intrahepatic bile capillaries, as in the cases formerly regarded as hæmatogenous in origin and now often referred to as toxæmic jaundice.

Jaundice and its associated symptoms form a group or symptom-complex which occurs in an almost bewildering variety of different conditions, as the list of causes of jaundice given in every text-book of medicine shows. In regard to many of these, more especially the obviously obstructive cases, the diagnosis may present no special difficulties, and well-established criteria exist for this purpose. On the other hand, the complex relations of the bile-ducts may render it difficult to establish whether the fault originates in them, in the liver, or in adjacent organs. In regard to toxæmic forms of jaundice, the difficulties are often much greater, and even after death the necropsy may fail, in the absence of exhaustive chemical and histological examination, to reveal the exact cause—indeed, the pathology of some of these forms is still under discussion. In particular a jaundice occurring during pregnancy may offer many difficulties, and we publish in this week's issue of THE LANCET records of cases illustrating these difficulties. The association of acute yellow atrophy with pregnancy is well known, and the characters which it presents render a toxic origin almost a certainty, the more so when its striking analogies with the results of phosphorus poisoning are borne in mind. The diagnosis in such cases is complicated by the fact that phosphorus is sometimes used, especially in Germany and Austria, by patients as an abortifacient. An interesting record by Mr. REGINALD G. HANN and Dr. R. A. VEALE of an unusual case of this kind appears on p. 163. The patient was a girl, aged 19 years, apparently two months pregnant, who took about a drachm of a rat poison containing about 4 per cent. of phosphorus. After a period of gastro-intestinal irritation, there was, as is frequently the case in phosphorus poisoning, a temporary amelioration of the symptoms, followed by the rapid development of the usual grave effects of hepatic derangement, leading to death within three and a half days from taking the poison. The interest of the case lies in the fact that in spite of the advanced fatty degeneration of the liver which resulted no jaundice occurred, and also in the occurrence of enormous subcutaneous hæmorrhages, as well as extravasations into the mediastinal and retroperitoneal tissues. Mr. HANN and Dr. VEALE suggest that the absence of jaundice may have been due to death having occurred too early for its development, but it is usually in the mild cases that it is delayed. Some hæmorrhage is, of course, common, but extensive subcutaneous hæmorrhages are rare. The other case, recorded by Dr. G. FULLER ENGLAND and Mr. FRANCIS R. THORNTON (p. 160), is one of jaundice occurring during pregnancy, and presents some peculiar features. The patient was a pregnant woman, aged 28 years, who, being seized with abdominal pain and vomiting, passed within two hours into an eclamptic condition, with fits resembling uræmic convulsions. The urine, obtained by catheter, was found to be claret-coloured and to contain albumin and blood. Further investigation revealed the presence of sugar and of methæmoglobin to which the colour was due. Red blood corpuscles were present in moderate numbers, and a few granular and hyaline casts. The case was therefore regarded as one of eclampsia with acute nephritis. Next day, however, on examination of the patient in daylight, the face and body were noticed to be markedly icteric, the conjunctivæ were œdematous and exuding a bile-stained serous fluid, while blood oozed from the lips. Labour had been induced on the previous evening, and shortly after midday a recently dead fœtus was delivered; it was not bile-stained, though the placenta and membranes were. The patient died the same evening. At the necropsy the liver was found to be enlarged and to weigh 64 ounces. It was yellowish-red in colour and mottled in appearance. On section it was firm and not greasy, and on microscopical examination only very small areas of hæmorrhage and necrosis were discoverable, the widespread necrosis usually found in acute yellow atrophy being absent. The kidneys presented a definite early tubal nephritis. The diagnosis in this case offers many difficulties, even with the information brought out at the necropsy. The obvious possibility of phosphorus poisoning analogous to the case just considered was negatived by the absence of indications of irritant poisoning and by the failure to find phosphorus or its oxides in the gastric contents. The diagnosis of acute yellow atrophy, though highly probable when the clinical features alone are considered, is not conclusively established by the post-mortem investigations, and fails to account satisfactorily for the very marked urinary changes and the methæmoglobinuria. On the other hand, it must be confessed that acute yellow atrophy is a condition which both from the clinical and pathological standpoints is not sharply defined. It is now generally admitted to be the result of a profound toxæmia, of as yet unrecognised causation, and it is therefore readily conceivable that in a given case the toxæmia, while giving rise to very extensive hæmolytic changes and to eclampsia, and inducing early necrosis in the liver and kidneys, might prove fatal before sufficient time had elapsed to permit of the marked autolytic changes in the liver usually found in acute yellow atrophy. The clinical features and the pathological changes produced might, in other words, conceivably depend upon the virulence of the toxin and upon the organs upon which its main stress fell. Some such hypothesis has been put forward in regard to the three conditions—toxæmic vomiting of pregnancy, eclampsia, and acute yellow atrophy—by Stone, Macdonald, Ewing, and Wolf, who regard them if not as one and the same disease with different manifestations, at any rate as pathologically very closely related. These views are skilfully discussed by Dr. England and Mr. Thornton, and they regard their own case as going far to prove this contention. It is difficult to resist the conclusion that the fulminating toxæmia in their patient led to a condition which was in effect a combination of eclampsia and acute yellow atrophy. It is to be hoped that further chemical and perhaps bacteriological investigation of similar cases will throw more light upon them, and meanwhile careful records of any showing unusual features form a valuable and often suggestive addition to our knowledge.

Another obscure and interesting form of jaundice is that to which Dr. F. J. Poynton draws attention in an instructive lecture which we publish on p. 153. The various names of congenital family cholæmia, family acholuric jaundice, and recurrent familial jaundice have been applied to it. The special features of this form are admirably illustrated by the three cases which Dr. Poynton records and are, briefly, the occurrence of jaundice at birth and at intervals afterwards, the association of enlargement of the spleen, and certain blood changes leading to definite anæmia. During the attacks of jaundice the liver enlarges also. Though such patients are often undersized and delicate, as in Dr. Poynton's cases, they may live to adult life and bear children, as the family history demonstrates. Pregnancy in one of these cases coinciding with an attack of jaundice might lead to difficulties in diagnosis, and in a case recorded by Dr. Claude Wilson the patient died from jaundice during pregnancy. Dr. Poynton's cases were investigated with modern hæmatological methods by Mr. D. Embleton, who found that the red corpuscles were unusually fragile as tested *in vitro*, but that the serum had no hæmolytic power. The view which Dr. Poynton regards as best explaining the phenomena of this disease is that of Minkowski, and Hawkins and Dudgeon that the primary change is in the blood-forming organs and that the fragility of the corpuscles is the cause of the jaundice. The general theory is that this condition is a congenital family defect rather than an acquired disease. It is of interest to note that other forms of congenital jaundice of a family type are known, such as the cases described by Dr. John Thomson, these, however, often proving rapidly fatal. It is desirable that all cases of obscure family affections should be put on record and the genealogy given according to the recognised methods. In another column Dr. A. Rowley Moody describes some family cases of Friedreich's ataxia with some interesting features; and, no doubt, if large statistics of family affections can be collected, much useful information will be eventually elicited.

◆

The Folklore of Menstruation.

Are women during their menses centres of mysterious infection, and, as such, should they be allowed to handle articles of food designed for human consumption? Should they be allowed to act as nurses? We learn from a letter in the *Medical Press and Circular* that butchers' and bakers' salesmen are at all times averse to having their wares handled by women, but we do not think this proves much. This aversion may be due to the unwillingness which a shopman with a poor and inquisitive *clientèle* feels to seeing his wares pulled about. On the other hand, it may have a venerable folklore origin. The lore of the shop and of the household has been little examined and is rarely viewed in its racial and historical connexions. That women during menstruation have in all ages and climes been regarded in a hostile light is a commonplace of anthropology. Old-fashioned Wessex and Worcestershire countrywomen, for instance, believed, and perhaps still believe, that when in this condition they ought not to handle raw meat for fear of spoiling it. German peasants, in the same way, believe, according to Ploss (*Das Weib*, 1884), that a menstruous woman entering a cellar turns the wine of the Fatherland to a sourness, and that if she cross a field she spoils the growth of young vegetation. The humbler class of Jewesses are accustomed to signal their menstrual condition to their husbands by a curious ritual observance. They tie bows of blue ribbon to their beds or chairs. The colour blue is here probably reminiscent of purple or blood-red. Similarly certain negresses in Africa wear a scarf of glaring colours folded three-cornerwise over the bosom during the menses.

Along the Congo the "house of blood," a hut daubed or marked with red, is used for the purpose of segregating the tribeswomen of each village when in this condition.

The Bible is explicit on the subject of menstruation, though it shows a delicacy, probably prompted by no idea of modern modesty, in mentioning the word. Indeed, the word "menstruous" only occurs some three times in the Scriptures, and then it is used by the Prophets, whose influence to some extent must have depended upon a deliberate contempt for euphemism. "Jerusalem is as a menstruous woman among them," says Jeremiah, and Ezekiel defines the just man as one who, among other things, has not come near a menstruous woman. The Books of the Law refer to the condition in periphrases, which were probably dictated by the early Hebrew's dread of mentioning an unlucky subject. "Issues" and a "time of separation" for women, as for men, are dealt with at length in Leviticus xv. The wording of the chapter suggests venereal disease, but in the case of women it is held to refer to the menses. The menstruous woman was held to be unclean for seven days, at the end of which she sacrificed turtle-doves as a sin and burnt offering. Coitus at such a period was a very grave offence. In ancient Persia the persons guilty of it were devoted to the fires of Hell until the Day of Judgment. The Zend-Avesta is full of regulations tending to isolate "unclean" women, and metrorrhagia is condemned as a crime to be visited with 100 strokes of the lash. The feeling was kept up in the East under Mahommedanism, and is found in Turkey at this day. Among the early Christians we find the same idea, for the Councils of Nice and Laodicaea in the fourth century refused the Communion, and even entry to the church, to women in this perfectly natural condition. Heathen antiquity in Greece and Rome was full of superstition with regard to the menses, and we need only quote PLINY who believed that a menstruous woman walking through the fields before sunrise kills noxious insects, while after the sun is up she exerts a withering effect on green corn and young vines. Her presence rusts razors, dulls mirrors, and causes abortion. The Middle Ages improved on all this. The menstrual fluid was held to generate vipers and vampires, and, conversely, it possessed medicinal qualities. Among savages all these beliefs flourish in crude forms. Everywhere there is the idea of uncleanness and of the necessity for isolation. This is so among the South Sea Islanders, the negroes, and a variety of other races. We may here mention the New Caledonians, who, like the Congo natives and indeed the Persians, set apart a special place for the segregation of the affected.

Pseudo-hygienic motives for the treatment of females during their "separation" cannot always have prevailed. Primitive man, as indeed all primitive savages, doubtless regarded the menstrual flow as something mysterious and containing the soul or life-principle. We know that blood in general, semen, sputum, excrements have been so regarded. Colour is given to this theory from the fact that in the Middle Ages menstrual blood was held to cure *Geistkrankheiten*—epilepsy and hydrophobia. The customs of the herd may also have given rise to the attitude of the earliest men towards menstruation. It has been pointed out that whereas coitus only takes place among the lower animals during seasons of rut, among all human tribes such connexion is regarded with horror. Have we not here a survival of the customs of the herd, which, at some infinitely remote epoch, allowed coitus during the period of separation only to the patriarch while refusing it to the other males of the primitive human group. There can be no doubt, anyhow, that ritual segregation has during the ages been an immense handicap to the female sex, and from the physiological point of view the fact of menstruation must still have its influences. GOETHE pointed out that man and woman could not be properly termed equal while the latter had perforce to suffer from physiological disabilities, more or less severe, during many days of each year, and the dictum cannot be explained away. But sound physiologists would be the first to protest against the maintenance of the rubbishy and degrading superstitions to which we have alluded above.

◆

Tuberculosis in Childhood.

THE importance of a careful study of tuberculosis as it occurs in childhood cannot be exaggerated, and we have recently on several occasions drawn attention to the subject. In another column we publish an article by Dr. CLIVE RIVIERE under the heading "Phthisis in Children." In discussing the condition which he is describing Dr. RIVIERE alludes to the importance of clearness in nomenclature, and we agree that it is essential that there should be no confusion as to the terminology to be adopted. For many years all writers on diseases of the chest adopted the word "phthisis" as indicating a disease characterised by destruction of the lung tissue. Then a heated controversy arose as to the relation of tubercle to the disease, when certain conditions at one time included under the term "phthisis" were shown not to be of a tuberculous nature. Dr. J. KINGSTON FOWLER was one of the earliest to urge that the term phthisis should no longer be used when tubercle was present, because of the confusion which was associated with the word, and for many years we have employed the term "pulmonary tuberculosis" in its place. We consider that in so doing we are adopting a more exact expression, harmonising the affection of the lungs with tubercle occurring in other organs and tissues of the body. The nature of the disease as well as the organ affected is thus definitely indicated. The word "phthisis" is generally used according to the meaning given to it by Dr. RIVIERE—namely, "a chronic pulmonary tuberculosis of a type similar to that found in the adult"; but we do not follow his suggestion that when others use it "to cover all cases of tuberculosis of the lungs," they are any more or less correct. Dr. F. T. ROBERTS, in delivering the Lumleian lectures in 1902, said:[1] "I have employed the expression 'thoracic phthisis' advisedly to emphasise what are, in my opinion, two most important practical facts—namely, first, that in the cases of chest disease usually and conveniently grouped as 'consumption' the morbid changes are by no means limited to the lungs, but in the large majority of instances other thoracic structures are more or less affected as well, and the mischief may even originate in certain of these structures; and secondly, that, even assuming the disease to be essentially a manifestation of tuberculosis, other lesions and pathological changes may be associated with the tuberculous mischief from the first." Dr. RIVIERE'S definition of "phthisis" is not quite clear to us, but from his subsequent remarks we are inclined to the belief that he would not agree with Dr. ROBERTS. Dr. RIVIERE further remarks that it is much better never to use the term "pulmonary tuberculosis" when phthisis is meant, since it is obvious that used without qualification "it includes all forms of tubercular disease in the lungs." We see no reason for this objection; we consider that "pulmonary tuberculosis" should include "all forms of tubercular disease of the lungs," qualifying adjectives—miliary, caseous, or fibroid, and so on, being prefixed if necessary. We have dwelt on this subject at length, as we wish to emphasise the importance of avoiding, as far as possible, any ambiguity in scientific terms. Old fashions die hard, and it will probably be some time before the word "phthisis" disappears from modern medical literature, but the arguments that have been raised in favour of the more scientific term "pulmonary tuberculosis" are, we contend, much stronger than are those for the retention of the older expression.

---

[1] THE LANCET, March 29th, 1902, p. 867.

In referring to the channel of infection in childhood, Dr. RIVIERE makes it very clear that, in his opinion, the digestive tract plays an important part, bringing forward the fact that the mesenteric glands are frequently the seat of a tuberculous adenitis. This view is now finding many supporters. Some authorities still hold the older theory—namely, that the respiratory organs are the first to allow the passage of the bacilli. Dr. L. EMMETT HOLT, in the last edition of his well-known work on the "Diseases of Infancy and Childhood," maintains that the most frequent source of infection is from direct association with persons suffering from pulmonary tuberculosis, and that infection by milk is relatively rare, and alludes to the frequency of tuberculous deposit in the bronchial lymph glands in support of this. Dr. RIVIERE, on the other hand, thinks that the affection of the bronchial glands is secondary to that of the mesenteric glands. Of course, dust-bearing bacilli emanating from dried sputum may be swallowed as well as inhaled, which fact would tend in a degree to reconcile the two opinions, but undoubtedly here is a matter upon which no one can as yet be dogmatic. Dr. RIVIERE also refers to the lamentable lack of statistics in this country respecting glandular tuberculosis in children. Why records of this nature have not been collected, or if they have been collected have not been made available for ready reference, it is difficult to say. Perhaps the chief reason is that for the figures to be of real value they must be derived from the post-mortem records of children dying from some acute disease having been previously in full health. The fever hospitals would be naturally the source from which such investigations might be derived, but, as is well known, necropsies are not always easy to obtain in this country, and in order to render such examinations of true value elaborate microscopical and bacteriological measures would be necessary. We would, however, suggest that all practitioners who meet with such cases should make a note of them so that in the future they might be published, and aid in adding to the statistical evidence of the occurrence of unsuspected gland disease. For diagnosis is of the first importance, in which connexion Dr. RIVIERE refers to certain conditions which in children are liable to be mistaken for pulmonary tuberculosis. We agree with him that the interpretation of physical signs in children may present far more difficulty than in the adult, and the frequent absence of expectoration adds still further to the obstacles preventing a proper diagnosis.

Many interesting remarks on the statistics of tuberculosis are brought forward in the paper. It is generally accepted that no age is exempt from pulmonary tuberculosis, but Dr. RIVIERE shows very clearly that less than 4 per cent. of all cases of "phthisis" are found in children of school age. This would correspond, we believe, with the experience of most physicians attached to the chest hospitals, but nevertheless the existence of latent tuberculosis is always to be borne in mind. The importance of the general manner of life of the children must be urged on all those who are responsible for the management of schools. Latent disease may at any time become active owing to unhealthy surroundings. The ventilation of many schools—not only Board schools, though these are chiefly in question—still leaves much to be desired, and the responsibility of those in charge is proportionally great. Undoubtedly, if the school-rooms are rendered healthy, and the scholars are helped in other ways to live a life of "physiological righteousness," the incidence of tuberculosis in the young will be greatly lessened. Dr. RIVIERE'S paper is one more argument in support of the far-reaching influence for good which we may expect from the inspection of school children.

Annotations.

"Ne quid nimis."

THE GENERAL ELECTION.

A GENERAL election is an event which calls upon the members of any great profession, such as the legal, the medical, the naval or the military, to consider how far the special claims or interests of their own calling are either identical with those put forward by political leaders or are of a kind to require some particular efforts if their class is to be duly protected or advanced. In an election brought about in the ordinary manner, by effusion of time, this aspect of the general question before the constituencies is usually manifest and undeniable; and, although it may be less evident in one which has been precipitated by a political crisis, it none the less deserves and requires attention. But on the present occasion the main questions before the electorate have been so confused by the multiplicity of issues that it is impossible to obtain from most of the candidates and their leaders any definite reply to the inquiry, "What are we voting for?" Some lay stress upon the merits of the Budget, others on its demerits; some point out the unfitness of the House of Lords for the functions which the constitution calls upon it to discharge, others think that the assembly of peers makes a decent second chamber; some put the advantages or disadvantages of a system of Free Trade in the front; and some consider the Home Rule question the most urgent. Generally speaking, it may be said that the constituencies are invited to open their mouths and shut their eyes and to wait in expectation of benefits which will presently descend upon them, while among the 25 medical candidates for Parliamentary honours are to be found Liberals, Unionists, and Home Rulers offering different things. This is what might be expected, for among the many thousand members of the medical profession in this country there are, of course, individuals of every shade of political opinion, many by whom the promises of the Ministerial party are accepted as current coin, many by whom the fulfilment of these promises would be regarded as a national calamity, and some who are as indifferent as Gallio to arguments and contentions which they believe themselves to see through, and in which they discover little but efforts to obtain place, patronage, or power, no matter at what cost to the real prosperity of the nation. We have every respect for sincere and reasoned opinions; and whereas it might conceivably, though a journal with no party politics, be within our province to discuss in general terms the relation which the questions of the day appear to us to bear to the profession to which we belong, in this election even that responsibility is removed from us by the confusion of issues before the electorate.

FREAKS.

IN all lands and among all races love of the grotesque and the deformed can be traced back even to the earliest times as a notable trait in human character. The official attachment of dwarfs and jesters to royal courts and ducal houses in days gone by serves to illustrate this trait, while there is no doubt truth also in the remark of Gautier that supreme power has always loved to have supreme abjection beside it by way of antithesis. Innate morbid curiosity for the deformed has always been a characteristic of the popular mind, and popular inability to explain the occurrence of "freaks of nature" sometimes led to their being endowed with supernatural qualities, as witness the gods Bes and Phtah of ancient Egypt. Statuettes of these deities preserved in the Louvre reveal the familiar features of achondroplasia in an unmistakeable way. Exhibitions of human oddities have ever drawn curious crowds, a fact of which the late Mr. Phineas T. Barnum was fully cognisant. If the medical visitor to Olympia will spend half an hour in the happy and contented little community to be found at "Tiny Town" he will see much that is of interest. There he will have the opportunity of meeting and conversing with dwarfs of all sorts, and he will soon be convinced that many have qualities of mind out of proportion to their physical limitations. Several of the company are obvious achondroplasics, notably a mother and daughter of Swiss extraction, the former of whom informs us that she had a son too, who died in childhood, who was "very small," and in all probability suffered from the same disease. Similar heredity, therefore, seems to be established in the case of achondroplasia. Many of the other inhabitants of "Tiny Town" are undoubtedly instances of myxœdematous infantilism. Their smooth, round, somewhat puffy, pale hairless faces, their narrow eyes and pug noses, their shrill voices, their dull expression, their somewhat listless and lethargic and gestureless behaviour are easily recognisable. On the other hand, there do not appear to be any cases of true cretinism in the company. As far as one can judge by a superficial acquaintance with these examples of hypothyroidism at Olympia, a degree of mental infantilism coexists with the obvious physical maldevelopment. A further and numerous group, however, contains cases where mental development is more or less normal, to judge by the excellence of some of the stage performances, whereas physically the individual's growth has been arrested before it has passed that of the child. Such are really men and women in miniature, and some have developed secondary sexual characteristics in the shape of deep voices and hair on the face; others of the opposite sex have good heads of hair; but in practically all of them the head is broad and round and large in proportion to the rest of the body, thereby establishing a true infantile type. These little people, therefore, can scarcely be said to realise the picture of the seventeenth-century poet who sang of

> "Une mignonne incomparable
> Qui passait pour chose admirable
> Et ne pesait qu'un louis d'or."

The term "pygmyism" is restricted by the French to cases where the bodily proportions are perfect, though in miniature, and such appear to be extremely rare. Other well-known types of infantilism, among which may be mentioned the rachitic, the "pottique," in which the condition accompanies Pott's disease of the vertebræ, the anangioplastic (Lorrain's type, associated with defective development of the circulatory system), and the syphilitic, do not appear to be represented in "Tiny Town." It is desirable to remember that infantilism and dwarfism are by no means synonymous.

DYSPEPSIA AND THIRST IN THE LIGHT OF OSMOTIC PRESSURE.

AN excellent and valuable illustration of the application of physical chemistry to medicine appears in a paper under the above title in the number of the *Bio-chemical Journal* issued on Dec. 29th, 1909. The object of the research, which was undertaken by Mr. Judah L. Jona, B.Sc. (Adelaide), of the Physiological Laboratory of Melbourne University, was to determine the osmotic pressure of the fluids ordinarily admitted to the stomach and at the same time to discover whether the sense of taste afforded us any guidance in the choice of fluids with reference to their osmotic pressure, more particularly as regards the rejection of the hypertonic, that term being applied to the liquid food or drink having an osmotic pressure higher than that of the blood, as distinct from hypotonic fluids which have an osmotic pressure lower than that of the blood. It is known that the lining cells of the mucous membrane of the stomach and intestine are injured by prolonged contact with a hypertonic fluid. The mucous membrane of the mouth is open to injury in this way, as is illustrated by the "roughness" produced when a piece of confectionery is retained for a few minutes between the teeth and cheek. It is also a matter of common experience that the intake of such substances as strong salt solutions, strong soups, and peptone solutions is followed by an irritable condition or revolt of the stomach. In the research alluded to the following substances were examined and their osmotic pressure at common strengths determined by observing the depression of the freezing point by Beckmann's cryoscopic method: (1) beverages: coffee, tea, lemon juice, beer, wine; (2) foodstuffs: treacle, peptonised milk, Benger's milk, soups (salted and unsalted), beef tea (salted and unsalted); (3) sugars: cane, dextrose; (4) fruit juices: lemon, orange, pineapple juice, cocoanut milk; (5) saline aperients: magnesium sulphate; a balanced saline aperient; and (6) saliva. The experiments showed that of all the fluid foods which are admitted to the stomach, alcoholic beverages and fruit juices alone are hypertonic. In no case, it would appear, is a fluid admitted in which hypertonicity is due to the mineral ingredients alone. It is therefore concluded that when the kidney is found to be elaborating a fluid (urine) with sufficient saline ingredients to render it hypertonic, the high concentration of the fluid must be regarded as so much external work done and of sufficient moment to be taken into consideration in calorimetric experiments on an animal or on the human subject. The experiments further demonstrate that a distinct "osmotactic" character may be awarded to the sense of taste. The palate exercises a diplomacy and is potent in testing the food, not only qualitatively, but also from the quantitative standpoint of molecular concentration. Even those hypertonic fruit juices which are admitted to the stomach are passed, so to speak, under protest, for their taste is recognised as astringent or highly acid, and are apt to be followed by a sense of thirst. It is admitted, however, that the mechanism is faulty when dealing with alcoholic beverages—a fact which is possibly due to the artificiality of fermented liquors, and their manufacture and consumption being restricted to man only. The fact remains that the great majority of fluid foods are hypertonic, and thus a margin is left for the addition of hydrochloric acid and other constituents of the gastric juice. As regards alcoholic beverages it is pointed out that a solution of alcohol in pure water isotonic with blood would only be about 1·5 per cent. As this percentage is almost invariably exceeded in alcoholic drinks, and as other substances are present in addition, the high osmotic pressure of beer and wine is not surprising. As the author points out, the association of the raising of osmotic pressure of beverages with the induction of thirst is made use of in some departments of commerce by the salting of alcoholic liquors and the over-sugaring of summer drinks. In the case of cane sugar, a solution iso-osmotic with the blood would be about 11 per cent., whereas the fluid which reaches the stomach as the result of even the slow ingestion of sweetmeats, as exemplified in the process of sucking confectionery, is much higher than this, and accounts for the disagreeable after effects very often experienced after over indulgence in such delicacies.

THE INDICATIONS FOR APPENDICOSTOMY.

At the present time there is a large amount of diversity of opinion as to the value of appendicostomy. By some it is regarded as of very great value in a number of different conditions, but by others it is looked upon as useless or as little more than a passing fad. Dr. W. B. Russ has contributed to the August number of the *Texas State Journal of Medicine* a very interesting and important paper on the operation. We are indebted for the following account of this paper to the report published in the *International Journal of Surgery*. Dr. Russ finds many indications for appendicostomy. He thinks it useful in amœbic dysentery, mucous colitis, chronic constipation, tuberculous ulceration, and syphilitic ulceration of the colon; it is of use to fix and drain an ileo-cæcal intussusception, to prevent gaseous distension in resection of the ileum, to anchor the cæcum in cases of volvulus, to treat multiple papillomata of the large intestine, and cancer of the transverse colon; in enteric fever it may be used in place of rectal feeding; it will serve as a substitute for cæcostomy; it is of value in cases of auto-intoxication, acute hæmorrhagic colitis, pernicious anæmia, and diffuse septic peritonitis; it may serve as a substitute for appendicectomy in chronic appendicitis, and it will relieve some dangerous post-operative conditions. There is something to be said for the use of appendicostomy in most of the conditions mentioned, but we cannot help thinking that the writer is a little enthusiastic in his advocacy of the operation. He gives in his paper a number of suggestions which may prove of service to those wishing to undertake appendicostomy. They are as follows: (1) avoid rough handling of the appendix and its mesentery, and be careful not to destroy the blood-supply in breaking down adhesions; (2) if the appendix is much injured or its blood-supply doubtful, or if it causes too much tension to bring it up to the surface, or if its lumen is too small, or if it is found necessary to irrigate the lower end of the ileum, a cæcostomy is preferable; (3) fasten the cæcum firmly, but in a way to preserve the blood-supply; (4) if the meso-appendix is broad and thick a hole should be made between its vessels and the parietal peritoneum should be united through the opening; (5) the appendix, with its mesentery, should be placed in the upper angle of the wound, and if there is any risk of the compression of its blood-vessels by the fascia or the skin these structures should be notched and united so as not to exert pressure; (6) it is not necessary to bend the appendix in its course through the abdominal wall, for in most cases there is no risk of leakage; (7) when it is necessary to open the appendix at once it is best to bring the appendix out through a button-hole opening in the skin a little more than half an inch from the edge of the incision; (8) a catheter should not be left in the fistula, and it is important not to use a larger catheter than is absolutely necessary, otherwise gangrene or leakage may follow; and (9) care should be taken to place the appendix in an easy position. We have not seen any more whole-hearted praise of the capabilities of appendicostomy than this paper contains, and its teaching must be received with reserve. There is probably a future before the operation, but time will be needed to distinguish between the conditions in which it is really of benefit and those in which its employment can be replaced by more efficacious modes of treatment.

DECEMBER, 1909, AT HOME AND ABROAD.

The southern regions of Europe, considered as a whole, have, unlike this country, every reason to be satisfied with the climatical conditions prevalent last month. Compared with December, 1908, the temperature was low at nearly all the home stations represented in the table below and high at almost all those on the continent and in the islands of the Mediterranean. The greatest minus values were about 3° at the Scilly Isles and Torquay, and the greatest plus values 4° at Paris and 5½° at Florence and Berlin. A large portion of central and nearly the whole of Southern Europe entirely escaped the touches of severe weather that visited this country, and Berlin, which is generally much colder in December than the north midlands of England, was for once rather milder. The usual conditions were also reversed by Florence being milder than the Scilly Isles. At Paris the temperature was practically the same as in London. In actual warmth no resort could compare with Algiers, where the mean temperature for the month was as high as 60°, or about equal to that of July in the north of England. Its temperature was, however, forced up to summer heat for a time by a somewhat protracted visitation of the unpleasant sirocco, and the more moderate warmth of Palma, Malta, and Palermo was far more agreeable. The shaded thermometer recorded a temperature as high as 60° or above only twice at Florence and the Nice observatory, while at Biarritz it ascended to that point or above it on eight days, at Naples on 10 days, at Rome on 12 days, and at Lisbon on 13 days. In this country it was quite an exception for the shade warmth to exceed 50° except at the Scilly Isles. At the majority of the stations given in the table the diurnal range of temperature was small rather than large. At Scilly and also at Manchester it was only 7°, and it is worthy of note that the mean warmth of the nights at the isolated station was just equal to the mean warmth of the afternoons at the cotton metropolis. At Naples and Palermo the average night had the same temperature as the average afternoon at several places on the south and south-west coast of England. Although there was a large quantity of precipitation either in the form of rain or snow in this country, as will be seen by the figures below, there was also a more bountiful supply of sunshine than during an average December; even the London (Westminster) record (29 hours) was more than twice the average. Most places in the south of Europe experienced many rainy days, but except at Lisbon, which received a share of the disastrous rains that were so general in other parts of the Peninsula, the actual quantity was less than in these islands, and in spite of occasional cloudy periods there was much more sunshine.

—	Highest temperature.	Lowest temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature for month.	Mean range of temperature.	Number of days with rain.	Total fall in month.
	°	°	°	°	°	°	*	ins.
Scilly	55	36	50	43	46·1	7	21	4·23
Jersey	56	30	48	39	43·5	9	17	5·13
Torquay	54	26	48	38	43·1	10	18	5·91
Sandown, I.W.	53	26	48	37	42·5	11	19	4·66
Weymouth	53	26	47	38	42·5	9	17	4·16
Bournemouth	53	22	48	35	41·5	13	19	4·50
Brighton	50	25	45	36	40·5	9	15	4·23
Bath	55	19	48	35	41·5	13	17	4·42
Buxton	50	15	38	29	33·5	9	19	9·35
Harrogate	52	17	41	32	36·7	9	22	5·16
Manchester	54	18	43	36	39·5	7	23	6·24
Nottingham	54	14	43	32	37·5	11	23	3·82
London	55	25	46	35	40·5	11	13	2·24
Paris	61	26	46	35	40·1	11	12	1·33
Berlin	52	21	41	31	36·3	10	10	2·41
Brussels	55	25	42	34	37·8	8	21	4·82
Nice	63	36	53	41	47·3	12	12	2·34
Biarritz	73	32	56	46	51·3	10	10	2·36
Florence	64	30	54	44	47·9	10	14	3·82
Rome	64	36	57	43	50·2	14	10	3·12
Naples	66	37	56	48	52·0	8	16	4·00
Palermo	75	37	61	48	54·2	13	3	0·24
Malta	69	47	62	53	57·4	9	11	2·02
Palma (Majorca) ...	73	39	62	47	54·9	15	6	0·75
Algiers	82	46	67	54	60·2	13	14	3·82
Lisbon	64	44	59	50	54·5	9	15	6·38

* A day with at least 0·04 inch.

THE SOLUBILITIES OF URIC ACID AND SODIUM URATE.

WE have received a reprint of a paper published in the *Biochemische Zeitschrift*, Band xx., p. 190, by H. Bechhold and J. Ziegler, containing some interesting observations upon the solubilities of uric acid and its salts. They find that at 37° C. the solubility of uric acid in ox serum, inactivated by previous heating to 58° C. for an hour, is 1 in 1925, but they were able to obtain a condition allied to supersaturation, which they refer to as "overfilling" (*überfüllung*), in which one part dissolved in 1100. The solubility of mono sodium urate, usually referred to as sodium biurate, they found to be much less—viz., 1 in 40,000. The solubilities in serum are therefore strikingly different from those in water, in which sodium biurate is the more soluble, 1 part being soluble in 665, whereas uric acid is only soluble to the extent of 1 in 15,500 in water at 37°. Normal sodium urate, they assert, can only exist in circumstances which can never occur in the body—viz., in strongly alkaline solutions. Dilution of the serum with water or with physiological saline solution hinders the precipitation of uric acid and sodium biurate. OH-ions (sodium hydrate) and H-ions hinder the separation of both substances from serum. Of the kations, potassium, lithium and magnesium hinder precipitation; on the other hand, sodium invariably promotes it, and ammonium usually does so. They also suggest that their observations show that the blood of gouty persons is often supersaturated with urates, and that the retention of these substances in the organism leading to a gouty paroxysm may be due to some condition causing a deposit of the urates from the supersaturated serum in the cartilages or elsewhere, comparable to the sudden formation of crystals in a supersaturated solution of a crystalline substance—e.g., hyposulphite of sodium. They suggest that if their observations can be applied with regard to the explanation of therapeutic agencies mineral waters containing potassium and magnesium should be beneficial, those containing sodium harmful. They attribute the more favourable effects of a vegetable diet over a flesh diet to the content in potassium and magnesium salts, whereas even with a flesh diet poor in purins greater quantities of ammonium salt are formed, and these are injurious.

TRACHEOTOMY FOR FOREIGN BODIES IN THE AIR-PASSAGES.

Dr. W. F. Westmoreland of Atlanta, Georgia, has written in the November number of the *American Journal of Surgery* an interesting article on tracheotomy for foreign bodies in the air-passages, especially in children. It is based upon 53 successful cases which he has had under his own care. The most important point in the paper is his objection to the use of a tracheotomy tube when the operation has been performed for the presence of a foreign body. He insists strongly on the necessity for immediate operation in all cases in which a foreign body has passed into the air-passages, quite irrespective of the fact whether dangerous symptoms are present or not. A great deal of the difficulty of the operation of tracheotomy in young children depends upon the fact that during childhood not only is the space within which the operation must be performed extremely small, but also the trachea itself is of extreme narrowness. In a child under two years of age the distance between the cricoid cartilage and the sternum is only about one and a quarter inches in length. By the age of five the length has only increased to one and a half inches, and even by 10 years it is but little more than two inches. The narrowness of the trachea at an early age is not fully appreciated. Up to the age of two years it hardly exceeds a sixth of an inch in diameter, and even by the age of 10 it is still only one-third of an inch in diameter. We have mentioned already that Dr. Westmoreland does not employ any tracheotomy tube. He leaves the wound open and if anything further is required a silk stitch is passed through each edge of the tracheal section, so that by traction the tracheal wound can be opened fully. He prefers to divide the isthmus of the thyroid should it be in the way, tying each half. Should the foreign body during the operation become fixed in the glottis he finishes the operation and when the trachea is opened he blows air into the lungs through a female catheter, and in the five cases in which this has occurred in his own practice recovery followed in all. Should the foreign body be expelled at once he closes the wound at the same time if there has not been sufficient irritation or infection to produce pathological changes in the mucous membrane of the air-passages. If, however, though the foreign body is rapidly coughed out, there is much inflammation or infection present he prefers to drain for a while, leaving the incision open and dressing the wound with perchloride of mercury gauze. When the foreign body is not promptly expelled a similar dressing is applied, and apparently in none of Dr. Westmoreland's cases was any operation necessary for removing the foreign body. The fact that in all the 53 cases on which he has operated a successful issue occurred is attributed by him to the early performance of tracheotomy, so that the probability of the occurrence of irritation and infection is reduced to a minimum. The series is excellent and reflects great credit on the operator.

BLACK BREAD.

A CURIOUS fallacy has been going the rounds of certain political squabbling this week to the effect that the term "black bread" implies a kind of famine food, whereas in several civilised countries it is just as much the staple and normal article of diet as is our white loaf. There is very little difference between the nutritive value of the wheat and the rye loaf. In some respects rye presents certain advantages over wheat, and in others wheat may be better than rye. Rye contains a rather greater percentage of soluble carbohydrates than wheat but somewhat less gluten, although the total protein matters amount to the same in both flours. Chemical analysis shows very trifling differences of composition between the two cereals. One distinct advantage of rye bread is that it keeps fresh longer than wheat bread. Rye bread also has distinct laxative properties. Pumpernickel or whole rye bread is more laxative than Schwarzbrod, possibly on account of its relative coarseness of texture. It is an interesting fact that when once the flavour of rye bread is appreciated ordinary white bread seems monotonous because of its comparative tastelessness, and so it is common to find the rye-bread eater demand black bread whenever he can get it and in whatever country he may happen to be. The large consumption of rye bread indicates, indeed, that in the event of a shortage in the wheat-supply the breach could be repaired by the use of rye without hardship. The bodily needs would be met and without any offence necessarily to the gustatory susceptibilities.

INTESTINAL WORMS AND BACTERIAL DISEASE.

THERE appears to be an increasing opinion that the presence of worms of one sort or another in the alimentary canal is liable to give rise upon occasion to certain forms of bacterial disease, including peritonitis and appendicitis. Intestinal parasites, it is asserted, are able to cause injury to the lining mucous membrane of the alimentary tract, and through this solution of continuity the bacteria which swarm in the lumen of the intestine, and which are comparatively harmless so long as they remain there, are enabled to gain access to the deeper tissues, where they may occasion pathogenic changes, often of a serious kind. These views have recently been set out and explained in a clear and interesting manner in a paper on the Relation of Certain Cestode and Nematode Parasites to Bacterial Disease, published in the *Journal of Economic Biology*, by Dr. A. E. Shipley, F.R.S., Reader in Zoology in the University of Cambridge. In this paper a description is given of a fatal epidemic of disease among rainbow trout caused by nematode worms, some of which had penetrated to the swim-bladder of the fish, apparently from the intestine through the intervening tissues. The swim-bladder of infected fish showed extensive invasion by intestinal bacteria, while the same organ in healthy fish was entirely free from such organisms. Reference is also made to the author's investigation of grouse disease, in which malady it is said a badly infected bird may contain thousands of threadworms, giving rise to inflammation and other changes in the cæcal walls. Dr. Leiper, we are told, has satisfied himself in this instance that the threadworm pierces the mucous lining of the alimentary canal, allowing the bacteria of the intestine to penetrate into the deeper tissues. Allusion is also made by Dr. Shipley to the occurrence of a species of Strongylus quadriradiatus in the intestines of pigeons which had died from an unknown malady reported by Dr. E. C. Stevenson of the United States Bureau of Animal Industry. There seems no reason to doubt that the intestinal walls of the pigeons were in this case pierced by the parasite, and that this permitted the passage of the bacteria from the interior of the bowel into the peritoneal cavity. Observations made in France have led some experts to maintain that such a perforation, made as a rule by Trichocephalus dispar, is one of the more common causes, if not the commonest, of appendicitis in man. Two years ago Dr. Shipley published a paper in *Parasitology* on a Cause of Appendicitis and other Intestinal Lesions in Man. In this he drew attention to a number of instances in which human parasites, even those of common occurrence, had caused discontinuity of the lining membrane of various spaces of the body, thus permitting access of intestinal flora into the adjacent tissues. Comparatively few children escape from harbouring intestinal parasites at one period or another. Some surgeons with experience in operating upon the vermiform appendix deny that worms are found in that organ when it is being removed. But against this it is contended that systematic examination of the appendix for this purpose is not habitually carried out; nor could this examination be regarded as satisfactory unless it had been conducted by someone with special knowledge and experience of intestinal parasites. Dr. Shipley points out that since modern scientific investigation has shown that an important part is played by insignificant insects, like gnats, flies, bugs, fleas, and ticks, in conveying pathogenic organisms through the skin of man, it is not unlikely that entozoa in our digestive organs may play a similar part to these biting ectozoa. Though "we cannot keep off tapeworms with mosquito netting, nor destroy threadworms with films of paraffin oil" yet we can, in Dr. Shipley's opinion, by the use of suitable medicaments drive these entozoa out of the body, and by care in selecting and cooking both our food and water materially hinder the access of their larvæ to the interior. Vermifuges were at one time regularly prescribed by the family practitioner; since this practice has fallen into disuse it is alleged that appendicitis has become more and more common. Entozoa are possibly more deadly than biting arthropods, for the latter are not always infected, but the former are at all times surrounded in the intestine by a constant supply of bacillus coli and other organisms capable of setting up pathogenic action as soon as they reach the deeper tissues.

THE VENTILATION OF SHIPS DURING BATTLE.

ONE of the difficulties which will occur in battle is discussed in the *Archives de Médecine Navale* for December, 1909, in a paper by Dr. Bastier (Médecin de 1re classe de la Marine Française), medical officer of the battleship *Patrie*. He points out that the explosion of shells on board a ship will blow the air out of her and fill her with poisonous gases (carbonic oxide and oxides of nitrogen) which will for long hang about her in spite of her speed, and which the ventilating fans, if running, will carry into all the neighbouring compartments. So will the men working down below be suffocated, and the more surely the better ventilated in ordinary times is their place of duty. He further states that there were many such cases at Tsushima, especially on the Russian side. He therefore proposes that when a ship gets within the zone of fire all ventilating fans shall be stopped, except those for the stokeholds (these draw their air from the upper deck, be it noted), no ventilation at all being better than the supply of poisonous air, and he suggests that in each compartment under consideration (ammunition rooms, dynamo rooms, &c.) a reservoir of compressed air be provided holding enough air under pressure to blow out that compartment three times successively, this air to be used during the active phases of combat, to be refilled in the lulls. He allows that this would mean more weight and less room, it would mean more trouble for the engineers and more complicated systems of piping, so it will be long before such a scheme obtains favour, but his proposal to stop the ventilating fans while the ship is being struck has much to recommend it. Still, the best way for a captain to secure satisfactory ventilation for his ship in battle is to make certain in peace time that it is his gunners who shall first hit the other ship, at the longest range, and the most frequently, and so spoil her ventilation first.

THE LOCALISATION IN THE NERVOUS SYSTEM OF THE TOXINS OF DIPHTHERIA AND TETANUS.

AT the Société Médicale des Hôpitaux of Paris some interesting researches have recently been reported which throw much light on the pathology of diphtheria and tetanus. At a meeting on Oct. 15th, 1909, M. Georges Guillain and M. Guy Laroche communicated a paper on "The Physiological Pathology of the Diphtheritic Paralyses." Clinical experience and experimental researches have shown that the paralyses of diphtheria frequently are in relation with the place of formation of the toxin from which an ascending neuritis starts. A man, aged 23 years, was admitted into hospital suffering from diphtheritic angina of malignant appearance on August 20th, 1909. Under antitoxin treatment he recovered and he left the hospital after some days. But on the 28th he noticed that he had some difficulty in deglutition and that his voice had a nasal twang. On Sept. 2nd he vomited and on the 3rd he was readmitted. He was pale, had a leaden tint, and appeared to be in a profoundly toxic state. There were complete bilateral paralysis of the soft palate, paralysis of accommodation of the left eye, hiccough, and dyspnœa. The pulse was soft and irregular and the heart sounds were muffled. The temperature was not elevated, but there was albuminuria. In spite of an additional injection of antitoxin and cardiac tonics vomiting occurred, the hiccough increased, the pulse fell to 44, and death occurred on Sept. 4th. At the necropsy macroscopic examination of the nervous system showed nothing abnormal. The liver showed yellowish ecchymotic spots and the kidneys points of hæmorrhagic nephritis. The medulla and cervical cord were removed and washed for 24 hours in running water to exclude the possible action of any toxin contained in the blood. With a sterilised scalpel the portion of the medulla containing the nuclei of the vagi was removed, broken up in a sterile mortar, and mixed with an equal volume of normal saline solution. A quarter of a cubic centimetre of the emulsion was injected into the cranium of a guinea-pig, and death occurred on the following day. Half a cubic centimetre was injected into the peritoneal cavity of another, and death supervened in 30 hours. Half a cubic centimetre was injected subcutaneously into a third, and death followed in 72 hours. At the necropsies no trace of infection was found and the blood was sterile. On the other hand, an emulsion similarly prepared from the cervical cord and the anterior pyramidal region of the medulla produced no effect on guinea-pigs. These experiments prove that a certain part of the medulla contained toxins, while other parts of the nervous system did not. Was the toxin of diphtheria fixed in the former? Fragments of the central nervous system were washed to remove the blood and placed in contact with the toxin of diphtheria, pure and diluted to 1 in 10, 1 in 100, and 1 in 200 of saline solution, and kept at the freezing temperature for 16 hours. The fragments were washed in running water for 24 hours and then broken down in a mortar and mixed with an equal volume of saline solution. Intracranial injection of a fifth to a quarter of a cubic centimetre proved fatal to guinea-pigs. Control experiments made with nervous tissue not exposed to the toxin proved negative. It was thus proved that the nervous tissue can fix the toxin of diphtheria. Further experiments showed that the lipoid substances of the brain have a high power of fixing the toxin. Evidently in the case related the cells of the medulla, especially those of the nuclei of the vagus, were impregnated with the toxin of diphtheria. This communication suggested to M. Jean Troisier and M. Georges Roux to investigate whether the toxin of tetanus can be found in the masticatory nuclei of the fifth nerve. This they did in a case which they communicated to the society on Nov. 12th, 1909. A child showed symptoms of tetanus 14 days after a wound of the foot, and on the following day intense trismus with dysphagia, opisthotonos, and rigidity of the lower limbs. Convulsions occurred every instant, and death supervened at the end of the second day. Intracranial injections of an emulsion made from the upper part of the floor of the fourth ventricle containing the masticatory nuclei produced fatal tetanus in a guinea-pig, while injections made from the anterior ponto-bulbar region and the lumbar cord produced no effect. Metchnikoff has found the tetanus toxin in the spinal cord, but these experiments show that it has a special affinity for the masticatory nuclei and explain the early onset of trismus.

A MERCURIAL LINE ON THE GUMS.

IT is accepted that the well-known blue line on the gums in lead poisoning is due to a deposit of sulphide of lead in the deeper cells of the epidermis and in large phagocyte cells in the connective tissue. Analogy suggests that in poisoning by other metals a similar line might be produced by deposition of the corresponding sulphide. In persons who have been taking bismuth or copper and whose teeth are decayed a livid line is occasionally seen on the gums; and in a child poisoned with tetrachloride of gold the late Sir Thomas Stevenson described a purple-black line at the junction of the teeth and gums. It might be suspected that in poisoning by mercury the sulphide, which is a black insoluble salt like the sulphide of lead, would be deposited in the gums, producing a dark line. In a recent number of the *Progrès Médical* Dr. G. Milian has described, apparently for the first time, such a line. In a case of slight mercurial stomatitis he observed throughout both jaws, but especially opposite the incisor teeth, a violaceous-grey line 1 to 2 millimetres thick on the gums at the insertions of the teeth. The line followed the undulating margins of the gums and passed between the teeth. It was absent where the teeth had been lost. Dr. Milian finds that this line occurs especially in mouths which are well cleansed in order to prevent stomatitis. In stomatitis of medium intensity it sometimes occurs, but only in an incomplete form; at the less inflamed parts of the mucous membranes deposits are seen passing between the teeth. Once formed the line is very persistent; it may last several months in spite of careful treatment and the cessation of the administration of mercury. Dr. Milian thinks that this persistence points to the conclusion that there is a deposit of metallic particles and not simple pigmentation. It is curious that this line does not appear to have been previously observed. It seems to be very rare, which may be due, we suggest, to the increased circulation produced by the stomatitis being unfavourable to metallic deposition. The facts that it occurs in a complete form only in cases of mild stomatitis and in an incomplete form in moderate stomatitis bear out this hypothesis.

FLAME AND OZONE.

THOSE who are familiar with test-tube experiments in the chemical laboratory may have observed that when a tube containing cold water is placed in the flame of the Bunsen burner, or, better still, in the fierce flame of the Kern burner, a smell strongly resembling ozone is noticeable when the tube is removed quickly from the flame. When the liquid gets warm the phenomenon ceases. The subject has been studied more recently with the view of obtaining definite results, and there appears to be little doubt that ozone is invariably present in flames. In the case of the hydrogen flame the presence of ozone is proved by the action of the flame on silver. A vigorous current of hydrogen is ignited at a narrow jet and only the point of the flame is used to touch the silver. A black film of oxide is produced which is most intense where the silver is in contact with the hottest zone of the flame. Ozone is not found outside the flame for the simple reason that it breaks down in its passage through the zones of relatively low temperature. Therefore, from a practical point of view, intense flames would hardly serve the purpose of producing ozone, nor can it be supposed that the presence of intense flames in a room can be a source of ozone sufficient to be a means of removing the impurities of the air by oxidation. The ozone and in some cases hydrogen peroxide are merely an effect of the high temperature of the inner zones of a very hot flame. In some cases the ozone may escape being decomposed, as by blowing a strong current of air through a tube into the flame of an ordinary Bunsen burner. It is an interesting fact that ozone is produced by ultra-violet rays, and the hot flame of an atmospheric burner working under perfect conditions is rich in these rays. The ultra-violet rays are probably the source of ozone in nature, the rays themselves, of course, owing their origin to the sun.

SPONTANEOUS RECOVERY FROM STRANGULATED HERNIA.

SPONTANEOUS recovery from strangulated hernia must be very rare. In the *Boston Medical and Surgical Journal* of Nov. 18th Dr. C. W. Stodder has reported the following case. He was called to a married woman, aged 59 years, a "Christian Scientist," on Oct. 17th, 1908. She was in considerable pain, which she referred to the right side, and had vomited constantly for two weeks, during which the bowels had not acted. In the right inguinal region was a tender œdematous, slightly tympanitic tumour. The patient stated that there had been a lump in this region for 18 months which had caused much discomfort, especially after hard work. She had always been constipated. In August the lump was very tender and the bowels did not act for ten days, during which she vomited constantly. The attack gradually subsided and the bowels began to act with frequent bloody discharges for nearly a week. Strangulated hernia was diagnosed and immediate operation was recommended, but the patient declined. On the morning of Oct. 19th a small gangrenous area of about the size of a ten-cent piece was seen; in the evening it had enlarged to the size of a quarter dollar. On the 20th the whole tumour was gangrenous and moist and had a fæcal odour. Dr. Stodder made an incision and opened a fæcal abscess, which was very offensive and discharged freely. Subsequently the tissues sloughed down to the muscles and a cavity 4 inches long and 1½ inches wide was formed. At its lower part was a knuckle of intestine of about the size of the first phalanx of the thumb and bright red which Dr. Stodder reduced into the abdominal cavity, causing considerable pain. The temperature was subnormal and the pulse was 100 to 120 for two weeks. The cavity slowly filled by granulation. On Nov. 15th gas was passed per anum for the first time since the attack. On Dec. 3rd an enema was administered and part of the fluid came through the fistula. On the 9th there was a large mass of fæces in the rectum which the patient could not pass. It was therefore broken up and removed digitally. At times much bile was discharged through the fistula, but very little undigested food. On Jan. 10th, 1909, there was diarrhœa, and some of the discharge came through the rectum. On the 15th, three months after the onset, fæces were passed normally per rectum. The patient declined an operation for closure of the fistula. The bowels acted naturally and the fistula gradually healed. In August the scar reopened after the patient had lifted a pail of water and discharged for two weeks. It then rehealed. The patient is now quite well and has no pain or discomfort.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

THE Far Eastern Association of Tropical Medicine, which has been established to bring together workers in Eastern tropical medicine for exchange of ideas and to foster the spirit of scientific investigation, has decided to hold its meetings every other year, and the first will be held under the presidency of Dr. Paul C. Freer from March 5th to March 14th, 1910, at Manila, P.I., the final week being spent at Baguio in the Benguet mountains, the summer capital of the Philippine Islands. The sessions will deal with protozoology and helminthology; cholera, plague, and leprosy; surgery, obstetrics, and diseases of children; fevers in the tropics, including malaria and typhoid; dysenteries and beri-beri; tuberculosis; climatology, hygiene, and sanitation; and there will be a business section. A number of prominent medical men have signified their intention to be present and others have promised to send papers. Members of the congress are requested to bring with them, when convenient, rare pathological specimens, and unidentified helminthological or other specimens, for demonstration and discussion. The sessions at Manila will be held in the new building of the Philippine Medical School on Calle Herran, near the Bureau of Science and the new Government hospital. The session in Baguio will be held in one of the Government buildings. The Government has appropriated a liberal sum for the entertainment of the guests during the meeting. There will be evening entertainments and visits to points of interest in Manila. Those interested in ethnology and anthropology will have an opportunity of observing the Igorot people, a tribe which has had as yet but little contact with the white man, and has preserved most of its old habits and customs. The general secretary-treasurer of the congress is Dr. Francis Clark, Manila, Philippine Islands.

A PARLIAMENTARY paper has been issued containing an exhaustive report by Sir Henry Hesketh Bell, K.C.M.G., High Commissioner of Northern Nigeria and late Governor of the Uganda Protectorate, on the Measures Adopted for the Prevention of Sleeping Sickness since its Outbreak in Uganda.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies has reported 19 cases of plague with eight deaths during the week ending Jan. 6th.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

III.[1]

Vascular Tension.

THE term tension, as applied to the blood-vessels, signifies the degree to which their walls are rendered tense or taut by the application of a force tending to stretch them either longitudinally or laterally. The more extensile a tissue the less is it rendered tense when elongated to a given extent; the highly extensile normal lung cannot by the deepest inspiration be made as tense as the much less extensile fibroid lung of chronic phthisis, in which disease, as I have shown, the comparatively unyielding lung tissue is maintained in a state of supernormally high tension by the vigorous action of the inspiratory muscles, ever striving to increase the mean size of the chest, and thus, at one and the same time, to enlarge the breathing area and to minimise the resistance opposed to the right heart.

When an elastic tissue is made tense by being stretched it may be said to be in a state of *elastic tension*, a variety of tension which differs from that of a non-elastic substance in that it is capable not only of passively transmitting force, but also of actively manifesting it by recoil. As I suggested in the last section, it is possible that the condition of muscle in the state of contraction is essentially one of elastic tension, the shortening caused by contraction being of the nature of an elastic recoil.

The blood-vessels are rendered tense in two ways[2]: (1) by being pulled upon from without; and (2) by being distended by the blood pressure acting from within.

1.—*Traction from Without.*

This may take place both in (*a*) the transverse and in (*b*) the longitudinal direction.

(*a*) *Transverse external traction.*—A tug acting upon the exterior of the vessels at right angles to their long axis, thereby causing an increase in their circular tension and tending to dilate them, seldom occurs except in the case of the intra-thoracic vessels. These vessels (including not only the intra-thoracic vessels situated outside the lungs but also the intra-pulmonary vessels) are subjected to a constant external tug acting at right angles to their long axis, one which rises and falls with every expansion and contraction of the chest. We are in the habit of regarding this tug as a species of suction resulting from the negative pressure in the pleural sacs. It is true that the structures immediately circumjacent to the lungs are subjected to a negative pressure, since the pressure which the intra-pulmonary air exercises on them is lessened by the amount of the elastic tension of the lungs. The lungs may thus be said to exercise suction upon these structures, and I have myself suggested the term "pulmonary suction" in this connexion, but it must not be forgotten that the tug is essentially exerted by the elastic tension of the pulmonary tissue. It is true that in the case of these extra-pulmonary structures it is not direct, seeing that the lungs are not adherent to them. In the case of the intra-pulmonary vessels, however, the transverse tug which the pulmonary tissue exerts upon them is of a more direct kind, and is constantly tending to expand them. It is by means of this direct transverse tug that the capacity of the pulmonary circuit is made to increase with every inspiratory expansion of the lungs. Doubtless during ordinary breathing many of the capillaries and smaller veins of the lungs are collapsed, only to be opened out when the lungs expand beyond their ordinary size.[3]

(*b*) *Longitudinal external traction.*—Both the arteries and the veins, but especially the former, are too short, unless stretched, to extend along the whole of their course. This is proved by the fact that in the cadaver they are longitudinally stretched between, and tug upon, the structures fixing them, undergoing considerable retraction when severed. During life, however, this external tug is for the most part annulled by the longitudinal stretching resulting from the vascular distension caused by the blood pressure. It is manifest that whatever external tug may exist is borne by the structures fixing the vessels in their course (these consisting mainly of the collateral vessels); otherwise it would be entirely borne by the heart on the one hand and the capillaries on the other.

That in the cadaver the arteries are not long enough to extend along their entire course without being longitudinally stretched is well known. If a portion of an artery be resected it is found to shorten by about a quarter of its length as measured *in situ*. This shows that in the cadaver the vessel exercises a considerable longitudinal tug on the structures fixing it. But, as just stated, the arteries do not exercise a similar tug on these fixed points during life, for it has been shown that by so much as a given length of an artery shortens after its removal from the body, by that amount is it lengthened when subjected to an internal fluid pressure equal to that of the normal blood pressure (Ballance and Edmunds). Hence we must conclude that during life the longitudinal stretching of the arteries is mainly, if not entirely, brought about by the blood pressure operating from within, and only in a minor degree, if at all, by external traction.

Temporary longitudinal stretching of the vessels by external traction takes place during certain movements. When, for example, the head is inclined backwards and to one side the carotid and companion jugular of the opposite side are stretched, and doubtless one of the purposes served by normal tortuosity in arteries such as the facial and vertebral is to prevent them from being unduly stretched by the movements of the parts in which they are situated.

Another instance of temporary longitudinal stretching of arteries is that which takes place in the lungs during their inspiratory expansion.

It is obvious that when a vessel is tortuous, whether normally or as the result of disease, it cannot exert any external longitudinal tug. Whatever longitudinal tension such a vessel may manifest must be the result of its distension by the blood pressure.

How comes it that the arteries are made too short to extend along their entire course without being stretched out longitudinally? The explanation is presumably as follows. If when undistended by the blood pressure they were just long enough to cover their course without being longitudinally stretched, it would follow that directly they became lengthened by the longitudinal stretching due to the blood pressure they would become too long for their course, and would in consequence be thrown into curves or even tortuosities. We might therefore expect to find that the longitudinal stretching which an artery would manifest if undistended by blood (its anatomical stretching, as we may term it) is normally such that it is exactly neutralised by the stretching produced on it by the habitual blood pressure, the stretching being produced from within instead of from without. We know, as a matter of fact, that the arteries are more stretched than the veins post mortem, and it will probably be found that the degree to which the blood-vessels exhibit longitudinal stretching post mortem (as measured by the extent of their retraction after division) is in proportion to the amount of blood pressure they are habitually called upon to sustain.[4]

One of the effects of this anatomical stretching is that it tends to keep the longitudinal tension constant, no matter how much the blood pressure may fall below the average, for if the normal blood pressure exactly neutralises the anatomical stretching, it follows that directly the longitudinal stretching due to the blood pressure begins to fall below the normal, the anatomical stretching, comes into evidence, and becomes more and more pronounced as the blood pressure falls, until when zero point is reached anatomical stretching alone remains. Only when blood pressure becomes supernormal does longitudinal stretching begin to increase beyond the amount of the anatomical stretching exhibited at zero pressure.

---

[1] Nos. I. and II. were published in THE LANCET of Jan. 1st (p. 48) and 8th (p. 121) respectively.

[2] I here leave out of consideration the effect on the tension of the muscular constituents of the vessel wall of their contraction. Quite apart from the influence of forces tending to *stretch* them, and thus render them tense, muscle fibres are by virtue of their contraction thrown into tension.

[3] I must not overlook the fact that the blood-vessels lining the respiratory tract are subjected to a direct negative pressure during inspiration, this negative pressure increasing in proportion to the rapidity and force of the inspiratory act and to the degree to which it is obstructed by narrowing of the respiratory passages.

[4] I should expect, for example, the femoral vein to exhibit greater retraction after division than the jugular vein, especially in young subjects.

Such an increase in longitudinal tension tends to cause an increase in the normal length of the vessel and to throw it into curves and tortuosities, as we may sometimes observe in the temporal artery when the pressure in this vessel is temporarily augmented, e.g., during a cough. But a supernormal pressure by no means necessarily does this. Whether the walls of a vessel shall be lengthened out by the blood pressure, either transversely or longitudinally, largely depends upon the tonus of its muscular coat. An increase in the blood pressure within a vessel may, indeed, be accompanied by an actual diminution of its calibre, and I think there can be no doubt that the muscular elements can by their contraction prevent the vessel walls from yielding longitudinally also when the blood pressure becomes supernormal. How otherwise can we account for the fact that in the last stage of granular kidney the radial arteries, after being subjected to years of heightened blood pressure, may yet remain not only non-dilated but perfectly straight. In such cases they are found to be firmly contracted. So far as I know, there are no longitudinal muscle fibres in these vessels. Be this as it may, I can have no doubt that their muscle fibres must be so arranged that they can by their contraction prevent the vessels from undergoing lengthening in consequence of a supernormal blood pressure. Doubtless this must be one of the functions of the longitudinally disposed muscle fibres which are present in some of the blood-vessels.[5]

2.—*Pressure from Within.*

The pressure of blood within the vessels stretches them both longitudinally and transversely, causing longitudinal and circular tension, and it is this tension thus caused—notably, the circular tension—which the physician has in mind when he speaks of vascular tension. The influence of blood pressure on circular vascular tension is expressed thus: tension = radius of vascular lumen multiplied into the pressure ($t = rp$). Its influence on longitudinal tension is only one-half this ($t = \frac{rp}{2}$).

It will be seen that the larger the bore of a vessel the more does a given blood pressure render it tense. Thus, supposing the radius of the aorta to be 500 times that of a capillary, a given blood pressure, say, 100 mm. Hg, will cause the tension in the aortic wall to be 500 times greater than that in the capillary wall, a fact which is apt to be lost sight of. This consideration explains why the tension in the walls of an aneurysm increases with every increase in its size, and why the delicate pulmonary capillaries can resist rupture under a pressure which suffices to cause dilatation of the many hundred times the thicker right ventricle.

The minimum amount of internal pressure needful to burst the walls of a chamber is spoken of as its bursting pressure, and inasmuch as the tension in, or strain on, the walls of a chamber resulting from a given pressure within increases with its size, it follows that the bursting pressure diminishes with every increment in the size of the chamber. It is for this reason that the thickness of the walls of a boiler have to be proportionate to its size, and that the larger blood-vessels need to be more stoutly built than the smaller ones, quite independently of the amount of blood pressure they have to support. Thus, though the blood pressure in the veins is less than that in the capillaries, the walls of the former are very much thicker.

Distinction between blood pressure and vascular tension.—It will be seen from the foregoing that a distinction has to be made between blood pressure and vascular tension. This is the more necessary seeing that the term "blood tension" is sometimes employed synonymously with "blood pressure"—i.e., the pressure which the compressed blood exerts on the vessel wall, thereby stretching it and rendering it tense, a pressure which can be measured by noting the height to which the blood spurts from an aperture made in the vessel wall, or the height to which that fluid can lift some other liquid such as mercury or water. It is best to discard the term tension in this sense and to employ the less ambiguous term "blood pressure." The term vascular tension signifies the degree to which the vessel wall is rendered tense, either by the blood pressure within, or by a force tugging from without. It is therefore something quite distinct from blood pressure. Nor is it right to suppose, as some seem apt to do, that blood pressure and vascular tension are necessarily equal at any given part of a blood-vessel, for not only are the forces influencing vascular tension from without independent of the blood pressure, but, as we have seen, the influence of blood pressure on vascular tension varies considerably with the size of the vessel lumen.

The effects of a longitudinal and transverse incision in the vessel wall compared.—If during life a small longitudinal incision is made into an artery the sides of the opening thus made gape, forming a circular orifice. If, on the other hand, a transverse incision is made, little or no gaping occurs, and the blood escapes in a flat sheet. The same results are observed when the experiment is made on a portion of excised artery distended with water under the normal blood pressure (Balance and Edmunds). These different effects are, no doubt, partly to be accounted for by the fact that the transverse tension of the vessel wall is double the longitudinal tension, and, possibly, partly also by the fact that the muscle fibres being arranged for the most part transversely a longitudinal incision causes a more extensive division of them than does a transverse incision and thus a more pronounced gaping.

Varying Degrees of Tension and Slackness of the Several Tissue Elements Forming the Vessel Wall.

It must not be supposed that the tissue elements of the vessel wall—muscle fibres, yellow elastic tissue, white fibrous tissue—are necessarily all equally tense or equally slack at one and the same time. Thus when an arteriole contracts so as completely to obliterate its lumen, its non-muscular elements are necessarily rendered slack, though the muscle fibres themselves are, by virtue of their contraction, in a state of tension. That the intima is rendered slack by marked arterial contraction is shown by the wrinkling of this coat observed post mortem; and it may be mentioned in this connexion that the plicated condition of Henle's membrane seen in ordinary microscopic sections may be obviated by adopting means (such as distending the vessel with melted paraffin) to prevent post-mortem contraction of the vessel.

It is necessary to point out here that a non-tense (= slack) tissue may be regarded as capable of assuming varying degrees of slackness. On the one hand, it may be so little slack that the slightest extension of it causes it to become immediately tense. On the other hand, it may be so crumpled up that the immediate effect of extension is to straighten out the tissue elements towards the neutral point between slackness and tension; and it is manifest that until this has been reached tension cannot be produced; in short, it is not enough to make a broad distinction between tension and non-tension. On the contrary, just as we distinguish between varying degrees of tension, so also must we distinguish between varying grades of non-tension or slackness. When, e.g., a non-contracted, empty bladder fills up, it first passes through successive phases of diminishing slackness until the neutral point is reached, and thereafter through successive phases of increasing tension. Similarly in regard to the veins: a considerable quantity of fluid has to be introduced into an empty venous system before the venous walls are rendered tense and a plus pressure is produced.

Let us now consider in some detail the variations in respect of tension and slackness which the different tissues constituting the arterial wall—muscular, yellow elastic, connective—may undergo at one and the same time.

Suppose the muscle fibres in the arterial wall to be in a state of non-contraction and the blood pressure to be at zero. It is obvious that the vessel wall will then be in a state of complete recoil, i.e., all its tissue elements will be slack—devoid of tension. They will not, however, all be in an equal degree of slackness. A little consideration will show, e.g., that the yellow elastic tissue will be less slack than the connective tissue. The former will, by its complete recoil, be brought into the neutral condition (that condition, namely, which can be converted into one of tension by the slightest elevation of blood pressure and consequent distension of the vessel), and the assumption that the connective tissue elements are reduced to the same neutral condition necessarily implies a limitation of the extensibility of the yellow elastic elements to that of the connective tissue which is considerably less, and in this case the high degree of extensibility of the yellow elastic tissue would have no *raison d'être*. We must therefore conclude that complete recoil of the yellow elastic tissue causes the connective tissue to become slack considerably beyond the neutral point (see Fig. 3), to be crumpled to such an extent that while the slightest elevation of blood pressure above zero will render the yellow elastic elements tense, a considerably greater elevation (with concomitant increase in the bore of the vessel) will be necessary to straighten out the connective tissue elements to the neutral condition.

---

[5] One would expect the vessels in the lower extremities, arteries as well as veins, to contain such longitudinal fibres. We have already seen (Section I.) that the latter vessels do.

FIG. 3.

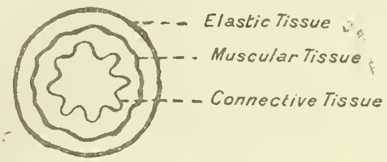


Diagram representing the relative degrees of slackness of the several tissues in a non-contracted artery in a state of complete recoil at zero blood pressure. (Note that the tissues, not the coats, of the vessel are represented in this diagram.) The elastic tissue is in the neutral condition—i.e., neither tense nor slack. The recoil of this tissue has reduced the calibre of the vessel to a degree which has caused the muscular tissue and the connective tissue to be slack. The muscular tissue is in a condition of moderate slackness. The connective tissue is in a condition of more pronounced slackness.

It follows from this that the *tension in the yellow elastic tissue tends to be always higher than that in the connective tissue*. The high degree of extensibility of yellow elastic tissue would, I repeat, be rendered futile, serve no purpose, if it were reduced to that of less extensile tissues, and we may safely conclude that wherever yellow elastic elements are found they tend to be in a state of greater tension than that of the other component tissues. In the lung, e.g., the tension of the yellow elastic tissue must, under ordinary circumstances, be considerably higher than that of the other pulmonary tissues. It is probably only towards the extreme limit of inspiration that the tension of these other tissues approximates that of the yellow elastic tissue. If, as some physiologists teach, the lungs, even at the end of a complete expiration, still preserve some tension, we may be sure that it is limited to the yellow elastic elements, and that the other tissue elements are in a condition of considerable slackness.[6] I exclude from consideration muscle fibres in a state of tonus.

Just as, with complete recoil of a non-contracted artery under zero blood pressure, the connective tissue is rendered more slack than the yellow elastic, so also is the muscular tissue (see Fig. 3), for otherwise we should have to assume that the muscular elements in the arterial wall have in the non-contracted state as much power of recoil as the yellow elastic elements, which probably no one would contend. As to whether in such a case the muscular or the connective tissue elements are rendered the more slack, I am not prepared to say. Assuming that the latter are, then the order in which the three classes of tissue in the non-contracted artery would begin to become tense, as the pressure is increased from zero, would be as follows: yellow elastic tissue, muscular tissue, connective tissue; and by the time all three had been rendered tense their relative degrees of tension would be in the order mentioned, and this order would be maintained during sucessive increments of pressure up to a certain point, but not beyond this. Thus, inasmuch as the connective tissue—notably the white fibrous element—is less extensile than the yellow elastic tissue, a point must sooner or later be reached beyond which each increment of pressure would cause a greater augmentation of tension in the former than in the latter. When the limit of extensibility of the connective tissue is reached, this tissue will bear the entire brunt of any further increment of pressure.

The above considerations make it evident that the degree of tension or slackness in the various tissues constituting the arterial wall may show decided differences at one and the same time. Thus, so far as the elastic and the connective tissue are concerned, it is possible (*a*) for both to be tense (in which case the former tends to be the tenser of the two); (*b*) for both to be slack (in which case the connective tissue is always the slacker of the two); and (*c*) for the elastic tissue to be tense while the connective tissue is slack.

In the case we have just considered—i.e., that of the passive recoil of an artery with wholly relaxed media and under zero blood pressure—the lumen of the vessel is reduced to a certain size. Now firm contraction (hypertonus) of the media causes a further reduction in the size of the lumen, even to the extent, it may be, of complete obliteration (as may happen in the case of the arterioles). It is obvious that such extreme narrowing causes the yellow elastic and connective tissue elements to be far more slack than does mere passive recoil of the vessel: the yellow elastic elements instead of being in a neutral condition will be wavy and sinuous, while the intima will be thrown into pronounced longitudinal folds (see Fig. 4).

FIG. 4.

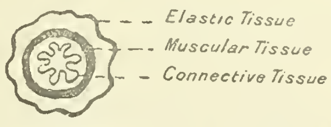


Diagram representing the relative degree of slackness and tension of the several tissues of a hypertonic artery of medium size. (Note that the tissues, not the coats, of the vessel are represented.) The vigorous contraction of the muscle fibres has so reduced the calibre of the vessel that both the elastic tissue, and still more the connective tissue, are rendered slack. The contraction of the muscle fibres, on the other hand, implies a condition of tension on their part, even under a zero blood pressure, and this tension of the muscle fibres will tend to increase with every increment of blood pressure; but no matter how high the pressure, so long as the tonus of the vessel can maintain the lumen of the vessel below a certain size, so long will the elastic and connective tissue elements remain slack.

The contracted muscle fibres, even when blood pressure is zero, will be in a state of tension, and this will increase with every increment of blood pressure. So long as the contracting fibres can maintain the vessel lumen at its minimum, or near its minimum, so long will the non-muscular elements of the vessel wall (elastic elements and connective tissue) remain in a state of extreme slackness, and this no matter how high the blood pressure is raised. In point of fact the muscle fibres are competent, in all but the larger arteries, to prevent, by their firm contraction, the non-muscular elements from being rendered tense even under the highest blood pressure. So long as they succeed in this, the media will firmly grip the intima and draw the adventitia after it. The latter will thus be wholly protected from the blood pressure, while the relaxed intima will be compressed between the media on the one hand and the blood on the other.[7]

The degree to which the muscular media influences by its contraction the tension (or slackness) of the non-muscular elements of the vessel wall depends, of course, upon the extent to which it causes a narrowing of the vessel lumen. This again depends partly upon the strength of its contraction and partly upon the degree of the blood pressure; the stronger the contraction and the lower the blood pressure the less does the lumen tend to be. If the muscular coat is well developed, as in the case of the arterioles, its vigorous contraction may prevent even a super-normal blood pressure from distending the vessel; but if, on the other hand, it is only moderately developed, as in the case of the large arteries, it may be powerless, by its most vigorous contraction, to withstand the distending effect of a high blood pressure. We may be sure that in the case of the aorta the most complete tonus of the media is incompetent, under an average aortic pressure, so far to reduce the calibre of the vessel as to render its yellow elastic elements slack, and thus deprive them of their essential function, which is to allow the vessel readily to expand under and recoil upon each successive wave of blood. I can conceive, however, that with a very low blood pressure hypertonus of this vessel might so far reduce its calibre as to render its yellow elastic elements slack, in which case the diastolic rebound would be effected by the muscular elements only.

---

[6] My own belief is that it is possible for those possessing a high pegree of thoracic mobility to render the entire pulmonary tissue slack by means of a deep expiration.

[7] This is what generally happens in granular kidney, in the case of the smaller arteries at least, in which consequently the strain of the heightened blood pressure falls essentially upon the hypertonic muscle fibres. Hence in the vessels in question these fibres hypertrophy, while the adventitia not being subjected to increased strain often exhibits little change. Though the tension of the intima is not augmented it is subjected to increased pressure, and this may help to explain the hyperplasia it undergoes.

Inasmuch as the extensibility of muscle is enhanced by its contraction, it follows that when in the living subject a fully relaxed arterial media enters upon a slight degree of contraction an increase in vascular lumen results. Whether, once the media has entered upon contraction, an increase in its tonus shall cause a diminution in vascular lumen or not depends upon the degree both of the tonus and of the blood pressure: the two may be so proportioned that an increase in tonus may lead to an increase in lumen. Arterial hypertonus, however, always causes a diminution in lumen, for though the extensibility of the muscle fibres of the media increases with every increment in the vigour of their contraction, the shortening produced by their vigorous contraction is greater than the lengthening caused by the distensile effects of the blood pressure.

It is probable that the degree of arterial tonus is often such (in some arteries, indeed—e.g., aorta—habitually such) as not only not to lead to any diminution in the vessel lumen but even to cause an increase of it. When, e.g., a maximum vaso-motor dilatation is called for, this is effected, not by a complete relaxation of the muscle fibres, but by a relaxation short of the maximum, since, as just stated, a slight contraction of the media allows the vessel to be distended by the blood more than does a wholly relaxed media, a consideration which makes it doubtful whether arterial tonus is ever completely absent during life.

In the case of the aorta the degree of tonus is such as to augment the extensibility and elasticity of the muscle fibres to the degree most favourable to the due expansion and rebound of the vessel. During ventricular systole and diastole a too pronounced aortic tonus might interfere with the proper systolic expansion of the vessel; an insufficient tonus might rob the muscle fibres of the requisite extensibility and elasticity. What is needed is just so much tonus as shall augment their extensibility and elasticity to the requisite degree, and this will vary with the blood pressure.

A question of some interest arises here. Is it possible that arterial tonus, say of the aorta, undergoes rhythmic modifications with the expansion and contraction of the vessel—that it is, e.g., *crescendo* during the expansion of the vessel and *diminuendo* during its rebound? This is, indeed, possible. I can well believe that aortic tonus increases towards the end of the systolic expansion, thus opposing a *crescendo* resistance to expansion, and saving the vessel from undue distension. If we suppose such a *crescendo* systolic tonus to occur during the expansion of the aorta, and if we further suppose the maximum tonus attained at the period of complete expansion to persist during the major portion of the diastolic rebound, it is obvious that the aorta would play not merely a passive, but likewise an active, part in driving the blood onwards. Be this as it may, it is certain that the muscular elements in the aorta are largely instrumental in determining by their tonus the peculiar extensibility and elasticity of this vessel; further, that by maintaining an active grip on the blood they play a large part in bearing the strain caused by blood pressure. They work, indeed, more unceasingly than the heart fibres themselves, for though it is possible that these latter preserve some degree of tonus during diastole, it is unlikely that such diastolic tonus is as marked as the aortic tonus in its moments of least development. Such considerations show how active must be the nutrition of the arterial media and how abundant its supply of blood.

While the vessel lumen may, as I have said, be greater with slight arterial tonus than with complete absence of tonus, every degree of tonus above the most moderate causes a diminution in the lumen of the vessel, and it is safe to say that in all but the largest vessels hypertonus causes a pronounced diminution even though the blood pressure be greatly supernormal. The total effect of the musculature in the systemic arteries is a considerable reduction in their total capacity—i.e., their average capacity is much less than it would be in the complete absence of arterial tonus. Hence it follows that the total effect of arterial tonus is very decidedly to relieve the strain on the non-muscular elements of the vessel wall, and that the greater the tonus of the muscular elements the more exclusively does the vascular strain caused by the blood pressure tend to fall on them.

(*To be continued.*)

ANNUAL REPORT FOR 1908 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

I.

IN the course of Christmas week the Public Health Committee of the London County Council issued its annual report submitting the report of the county medical officer of health for the year 1908. The present is the seventeenth annual report we have received from Sir Shirley Murphy, and, like its predecessors, it abounds with information of vital interest to everyone who has at heart the well-being of the vast population of the metropolis.

Coördination of Public Health and School Authorities.

Adequate study of Sir Shirley Murphy's recent reports leads to the conviction that the system under which the interests of public health and of elementary education can best be secured, with due regard to economy as well as to efficiency, consists in the coördination of both these functions under the same representative authority. The arguments in the other direction are strong, but the plea of expediency is stronger. Our readers will remember that in connexion with the issue of the recent Education Act the Board of Education published a memorandum setting forth the official opinion concerning the relations that should subsist between the newly constituted education authorities and the authorities already in charge of the public health. The main principle which the Board declares to be essential to the development of administration on sound lines is, in the words of the memorandum, "That school hygiene cannot be divorced from home hygiene, and that this in turn is intimately bound up with the hygienic conditions of the community. Efficiency and economy require, therefore, an organic relationship between the daily work of the school authority and of the authority responsible for the administration of the wider branches of the public health."

In his report for 1904 Sir Shirley Murphy ventured to predict that the transfer to the County Council of the administration of the Education Acts would tend to bring the child population into proper relation with the health authority, and that by this means the spread of disease among susceptible persons of all ages would be diminished. Subsequent experience has undoubtedly justified this prediction, for statistics show that a higher standard of health has prevailed in London ever since the above date, not only among children, who are always the chief victims, but also among persons above and below school age. That the transfer referred to has been an important factor in this improvement is highly probable; and on that account it is encouraging to find that the County Council is proceeding consistently on the lines indicated by the Board of Education, notwithstanding that their responsibilities as well as their expenditure have naturally increased in at least equal proportion.

In the present report the subject-matter is arranged under definite headings. The first part relates almost exclusively to vital statistics; the second part to public health administration; whilst the third part, which is contributed by Dr. J. Kerr, abounds with instruction on matters of school hygiene.

Vital Statistics.

In his introduction to Part I. Sir Shirley Murphy states that the year 1908 was exceptional in many respects, and particularly on this account that the statistical records show rates of birth and death as well as of marriage which are the lowest observed in any year since the establishment of civil registration. In that year the marriage-rate was equal to 15·9 only per 1000 of the aggregate population, and was below the average rate in the last completed decennium by 1·9 per 1000. The birth-rate was 25·3 per 1000, and the death-rate 13·8 per 1000 of the population estimated to be living at all ages and of both sexes, these rates being respectively below the decennial averages by 5·1 and by 2·9 per 1000. For several years past the Registrar-General has published periodical returns of marriages, births, and deaths for London, in common with other large towns. Nevertheless, for administrative purposes it is necessary to supplement this information by statistics in much greater detail, relating not only to the metropolis as a whole, but to the separate sanitary districts under the jurisdiction of the Council.

In submitting his population estimate for the several metropolitan districts, Sir Shirley Murphy observes that although by the national method the death-rates are still calculated on the assumption that the rate of increase in the last decennium has since been maintained, the correctness of this assumption is open to doubt, in view of the fact that an interval of seven years has elapsed since the last Census. Accordingly, he has tabulated side by side with the rates thus obtained the rates calculated on the basis of the number of inhabited houses returned in each district under the Equalisation of Rates Act. From this table we learn that although the rates computed by the two methods for the county as a whole are practically identical, the difference in the case of certain of the metropolitan districts is very considerable. It should, moreover, be borne in mind that since the year 1901 the numbers as well as the age constitution of the local populations may have materially altered, and that for this change no reliable correction can be made until the figures of the next census are available.

In noticing previous annual reports of this series we have directed attention to the particular merits of the life table method as employed by Sir Shirley Murphy in estimating the effects on a community of fluctuations of mortality. The advantages of this method are enumerated in the county medical officer's report for 1901, which contains the London life table for that year, together with the mathematical formulæ employed in its construction. In a table in the present report the number of deaths occurring in 1908 at each age period is compared with the number that would have occurred had the death-rate of the period 1891–1900 been maintained in that year. The number of lives saved is also shown, and this is expressed in terms of "life capital"—the result being obtained by applying "the mean future life time," given in another table, to the number of lives saved at each group of ages. By this method it has been ascertained that, as compared with the decennium 1891–1900, there has been in 1908 a saving of 26,205 lives, representing a gain to the community of 1 066,770 years of life capital. From a table comparing the London death-rates in 1908 with the corresponding decennial rates it appears that the rate of mortality in that year was considerably lower than in the period 1891–1900 at each stage of life in both sexes, except at ages beyond the eighty-fifth year. In another table the corrected district rates are shown for 1908 in comparison with the average rates for the preceding quinquennium. From this table we see that in both periods Hampstead experienced the lowest death-rate, whilst the highest rate occurred in Shoreditch in 1908 and in the City of London in the preceding five years.

Infant Mortality.

It will be remembered that the Duke of Devonshire's Committee on Physical Deterioration in its report issued five years ago commented severely on the absence of adequate official records of sickness and mortality among the infant population of this country. For more than a half century previous the reports of the Registrar-General had contained information respecting the mortality occurring in each trimester of the first year of life, but as regards the causes of loss of life in the first days and weeks after birth no information was at the time accessible, although this might readily have been unearthed from the national registers in Somerset House. Accordingly, a table was prepared by the committee's request showing in sufficient detail the causes of death in each week and month of the first year of life, and since the year 1904 a similar table has been required by the Local Government Board in the annual reports of all medical officers of health. By summarising these tables for the several sanitary districts of the metropolis the county medical officer is now able to give information on infantile mortality of a character which until recently has been unattainable.

Infantile mortality, as ordinarily computed, is free from the defects of the general death-rate, because it is based not on mere population estimates but on observed facts of birth and death. Consequently it has become general with expert sanitarians to appeal to the former rather than to the latter as a test of the sanitary condition of a community. It is satisfactory to learn that in the year 1908 the London rate of mortality of infants under the age of one year did not exceed 113 in each 1000 births—a rate which had never previously been recorded. In the present report a diagram is inserted showing the infantile mortality of London in each year of the last half century. The rates are also shown after exclusion of the deaths from premature birth, which would probably be affected in a greater degree than the deaths from any other cause, by the more complete registration of recent years. Both curves in this diagram show the mortality to have been lower in 1908 than in any other year since 1857. Among metropolitan boroughs the loss of infant life has for several years been greatest in Shoreditch and Bermondsey and least in Hampstead. Compared with the rates of other large English towns London experienced a lower infantile mortality in the last decennium than did any of these towns except Bristol. Another table summarises the returns of the district medical officers of health, and is drawn up in conformity with the instructions of the Local Government Board. From this table we learn that of 13,956 deaths within the first year of life occurring in the year 1908 as many as 4412 took place during the first month, of which number 2645 had not survived birth by more than seven days. From the first month until the twelfth the deaths diminished in number almost steadily.

Reviewing this interesting table Sir Shirley Murphy remarks that although London experienced in 1908 the lowest infantile mortality hitherto recorded, it needs to be remembered that this rate is liable to considerable fluctuations owing to climatic changes and varying degrees of epidemic prevalence. After quoting from the table the more striking instances of such fluctuations in the year under report he returns to the point that infantile mortality is extremely sensitive to influences that vary from year to year, for the effects of which administrative effort can as yet but imperfectly compensate. "Therefore," he continues, "the result of the efforts which are now being made to lessen infantile mortality must not be judged by the mortality of the moment. It is sufficient that these efforts should be rightly designed and properly applied, and there need be no feeling of doubt that when the accumulated experience of some years is available it will prove them to be of value. The difference between the rates of infantile mortality in districts well and in those badly circumstanced socially is sufficient indication of the results which might be obtained if the infants of the less favoured districts had extended to them the same care as that bestowed upon infants of the better favoured districts."

With the aid of a further series of tables, in which infantile mortality at several stages of the first year of life is shown in relation to social condition, we detect a marked difference when the least overcrowded are contrasted with the most overcrowded districts, the term "overcrowding" being understood to apply to that portion of the population living more than two in a room. Strangely enough, the difference is greatest, not among infants within three months of birth, but among infants aged from 9 to 12 months, and at the latter ages the mortality in the most overcrowded districts exceeds that in the least overcrowded by from 80 to 85 per cent.

Preservation of Infant Life.

Among systematic efforts now being made in the metropolis for the preservation of infant life Sir Shirley Murphy speaks appreciatively of the system of visitation by female sanitary inspectors or health visitors. This system was originated many years ago by the Manchester and Salford Sanitary Association, which is still doing admirable work in those Lancashire boroughs. The London County Council (General Powers) Act of 1908 provides for the appointment of female health visitors and enables the Council to contribute to their salaries, and we gather that further appointments of the kind are in contemplation. The Notification of Births Act has been adopted in all but eight of the sanitary districts, and the houses in which births have taken place are visited by female sanitary inspectors or health visitors. In some districts the work of these officers is supplemented (as it is in Manchester) by that of a staff maintained by local health societies, who act in coöperation with the officers of the borough councils, and in this connexion "consultative centres" have been instituted in several parts of London. To these centres mothers bring babies needing special attention, and advice is given as to their treatment, the progress of the child being watched and tested by weighing. At several of the local milk depôts the same course is pursued, and specially modified milk is supplied for children who cannot be fed from the breast. The medical officers of health of the districts in which these provisions exist speak favourably of their value, and Sir Shirley Murphy reports that the knowledge and experience gained by this means are all-important for the preservation of infant life.

(*To be continued.*)

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 14th, 1832.

LONDON FEVER HOSPITAL.—IMPORTANT FACTS CONNECTED WITH FEVER CASES.

Subsequently to his reference to the above cases[1] Dr. Johnson made a few further remarks on the subject of the fever succeeding the cholera, when the following interesting and important facts were disclosed, which, to prevent misconception, we have verified by personal inquiry. Dr. Johnson stated that the fever after the blue stage, in the north of England, was of exactly the same character as the fever which was to be seen, at this moment, in the London Fever Hospital. In that institution, the medical officers had observed that the cases, since about June last, had assumed an entirely new character, fully justifying the supposition that a material change has lately been produced in the atmosphere of this country. During the last six months, fever, in that hospital, has exhibited a very severe typhoid form; and has been particularly fatal to elderly persons. This severity has been accompanied with great gastric irritation, so that almost every case presented an affection of the alimentary canal; so much so, that the physicians of the Fever Hospital have been prevented from prescribing purgatives, from the prevailing gastric irritation. General, and even local, blood-letting has been in comparatively few instances adopted, from the marked prostration which has characterised the prevailing epidemic.

We have not room to advert further at present to these facts, but we think it is the duty of the physicians of the hospital immediately to make public the experience which they have lately had in that institution.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8662 births and 4735 deaths were registered during the week ending Jan. 8th. The annual rate of mortality in these towns, which had been equal to 15·0, 15·4, and 16·7 in the three preceding weeks, declined to 14·8 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 14·4 per 1000, against 15·6, the mean rate in these 76 towns during the corresponding quarter of the four preceding years 1905–08. The mean annual death-rate in London last quarter did not exceed 14·1 per 1000, and was 0·3 below the mean rate in the 76 towns. The lowest annual rates of mortality recorded in the 76 towns last week were 6·3 in East Ham, 6·5 in Handsworth, 7·4 in Hornsey, and 8·3 in Coventry; the rates in the other towns ranged upwards, however, to 22·9 in Huddersfield, 23·4 in Birkenhead, 23·5 in Warrington, and 25·4 in Hanley. In London the recorded death-rate last week was equal to 14·2 per 1000. The 4735 deaths registered in the 76 towns last week showed a decline of 541 from the number in the previous week, and included 242 which were referred to the principal epidemic diseases, against 273 and 291 in the two preceding weeks; of these 242 deaths, 77 resulted from whooping-cough, 44 from diphtheria, 36 from diarrhœa, 36 from measles, 33 from scarlet fever, and 16 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·8 per 1000, against 0·9 in each of the two preceding weeks. No death from any of these diseases was registered last week in Brighton, Tottenham, Norwich, Preston, Halifax, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·6 per 1000 in Birkenhead and in Swansea, 2·8 in Tynemouth, and 3·0 in Hanley. The fatal cases of whooping-cough, which had steadily increased in the six preceding weeks from 61 to 109, declined again last week to 77, but caused annual death-rates equal to 1·1 in Huddersfield, 1·3 in Newport (Mon.), and 1·7 in Plymouth. The 44 deaths from diphtheria were fewer by 7 than those in the previous week; they included 15 in London and its suburban districts, 3 in Manchester and Salford, and 2 each in Hanley, Nottingham, Derby, and Leeds. The 36 fatal cases of measles showed a decline of 14 from those in the previous week, but caused annual death-rates equal to 1·6 in Swansea and 1·7 in Birkenhead. The 36 deaths attributed to diarrhœa exceeded the number in the previous week by 2. The 33 fatal cases of scarlet fever were also within 2 of those returned in the previous week, and included 7 in Liverpool and Bootle, 3 in Birmingham and King's Norton, and 2 each in Bradford, Leeds, and Tynemouth. The deaths referred to "fever" in the 76 towns were 16, against 18 and 15 in the two preceding weeks, but included 2 in Swansea. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined in the 12 preceding weeks from 2810 to 2362, had further fallen to 2256 on Saturday last; 212 new cases of this disease were admitted to these hospitals last week, against 224 and 244 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 5 cases of small-pox on Saturday last. Of the 1331 deaths registered in London last week 338 were referred to pneumonia and other diseases of the respiratory system, against 332 and 360 in the two preceding weeks; these 338 deaths were no fewer than 151 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 36, or 0·8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, and in 47 other smaller towns; the 36 uncertified causes of death in the 76 towns last week included 5 in Birmingham, 5 in Liverpool, 3 in Sheffield, and 2 each in Manchester, Salford, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 986 births and 740 deaths were registered during the week ending Jan. 8th. The annual rate of mortality in these towns, which had steadily declined in the four preceding weeks from 23·8 to 18·9, rose again to 20·4 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Scotch towns averaged 17·7 per 1000, and exceeded by 3·3 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 13·8 in Leith and 16·3 in Aberdeen, to 26·6 in Perth and 26·7 in Dundee. The 740 deaths from all causes in the eight towns last week exceeded the number returned in the previous week by 65, and included 93 which were referred to the principal epidemic diseases, against 86 in each of the two preceding weeks. These 93 deaths were equal to an annual rate of 2·6 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·8 per 1000. The 93 deaths from these epidemic diseases in the Scotch towns last week included 55 from measles, 19 from diarrhœa, 6 from whooping-cough, 6 from scarlet fever, 5 from diphtheria, and 2 from "fever," but not one from small-pox. The fatal cases of measles, which had been 42 and 63 in the two preceding weeks, declined again to 55 last week, of which 52 occurred in Glasgow and 3 in Edinburgh. The 19 deaths attributed to diarrhœa exceeded the number in the previous week by 10, including 7 in Glasgow, 5 in Aberdeen, 3 in Dundee, and 2 in Edinburgh. Of the 6 deaths from whooping-cough, 3 occurred in Glasgow and 2 in Edinburgh; and 2 fatal cases of scarlet fever were returned in Glasgow, in Edinburgh, and in Greenock. All the 5 deaths from diphtheria and the 2 deaths referred to "fever" were registered in Glasgow. The deaths in the eight towns last week referred to diseases of the respiratory system, which had been 215, 173, and 181 in the three preceding weeks, declined again last week to 172, but exceeded by 43 the number registered in the corresponding week of last year. The causes of 23, or 3·1 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

---

[1] The cases referred to were presented at a meeting of the London Medical Society on January 9th, 1832, by Dr. James Johnson, after remarks on The Cholera, its premonitory Symptoms, and Subsequent Fever, in England.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 689 births and 435 deaths were registered during the week ending Jan. 8th. The mean annual rate of mortality in these towns, which had been equal to 18·2 and 25·4 per 1000 in the two preceding weeks, declined again to 19·7 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 19·1 per 1000, whereas the mean rate during the same period did not exceed 14·4 in the 76 largest English towns and 17·7 in the eight principal Scotch towns. The annual death-rate during last week was equal to 21·1 in Dublin, 19·7 in Belfast, 18·5 in Cork, 20·4 in Londonderry, 21·9 in Limerick, and 11·7 in Waterford; the mean annual rate last week in the 16 smallest of the Irish towns was equal to 17·9 per 1000. The 435 deaths from all causes in the 22 town districts during the week showed a decline of 122 from the high number returned in the preceding week, and included 36 which were referred to the principal epidemic diseases, against 18 and 32 in the two preceding weeks; these 36 deaths were equal to an annual rate of 1·6 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·8 per 1000, but in the eight principal Scotch towns it was equal to 2·6. The 36 deaths from these diseases in the Irish towns last week included 19 from whooping-cough, 7 from diarrhœa, 3 from diphtheria, 5 from "fever," and 2 from measles, but not one either from scarlet fever or small-pox. The 19 fatal cases of whooping-cough showed a further increase upon recent weekly numbers, and included 12 in Belfast, 3 in Dublin, and 2 in Limerick. Of the 7 deaths attributed to diarrhœa, 2 were returned both in Dublin and in Belfast. The 5 deaths referred to "fever" included 4 fatal cases of enteric, of which 2 occurred in Belfast and 1 each in Cork and in Portadown; the death from typhus was registered in Dublin. A fatal case of diphtheria was returned in Dublin, in Belfast, and in Cork; and both the deaths from measles occurred in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 83, 134, and 183 in the three preceding weeks, declined last week to 110. The causes of 9, or 2·1 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., while in the eight principal Scotch towns it was equal to 3·1 per cent.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1909.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·4 per 1000 of the population, estimated at 4,833,938 persons in the middle of last year; in the three preceding months the rates were 7·1, 6·5, and 5·8 per 1000 respectively. The lowest rates were recorded in Hammersmith, Chelsea, St. Marylebone, Hampstead, Stoke Newington, Holborn, and Finsbury; and the highest rates in Fulham, Bermondsey, Lambeth, Deptford, Lewisham, and Woolwich. Four cases of small-pox, of which 3 belonged to Islington and 1 to Stepney, were notified during last month, and 4 small-pox patients remained under treatment in the Metropolitan Asylums Hospitals. The prevalence of scarlet fever showed a further decline last month; this disease was proportionally most prevalent in Fulham, Bermondsey, Lambeth, Greenwich, and Lewisham. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 2717, 2708, and 2460 at the end of the three preceding months, had further fallen to 2329 at the end of December; the weekly admissions averaged 250, against 394, 325, and 289 in the three preceding months. Diphtheria was rather less prevalent than in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Paddington, the City of Westminster, Stepney, Deptford, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 904 diphtheria patients at the end of last month, against 901, 958, and 940 at the end of the three preceding months; the weekly admissions averaged 97, against 119 and 104 in the two preceding months. The prevalence of enteric fever also was slightly below that recorded in the preceding month; this disease was proportionally most prevalent last month in Kensington, Fulham, St. Pancras, Shoreditch, Stepney, Greenwich, and Woolwich. There were 62 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 75, 78, and 70 at the end of the three preceding months; the weekly admissions averaged 8, against 13, 11, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in the City of London, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark. The 33 cases of puerperal fever notified during the month included 6 in Fulham, 4 in Camberwell, and 3 in Battersea. Of the 13 cases notified as cerebro-spinal meningitis, 2 belonged to Bermondsey, 2 to Lambeth, and 2 to Battersea.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending Jan. 1st, 1910, the deaths of 6943 London residents were registered, equal to an annual rate of 15·0 per 1000; in the three preceding months the rates were 11·5, 11·3, and 13·8 per 1000. The death-rates last month ranged from 9·6 in Hampstead, 10·8 in Fulham, 11·5 in Lewisham, 11·9 in Woolwich, 12·1 in Stoke Newington, and 12·3 in Wandsworth, to 18·0 in St. Marylebone and in Southwark, 18·1 in Bermondsey, 19·0 in Finsbury, 19·4 in Shoreditch, and 25·2 in the City of London. The 6943 deaths from all causes included 326 which were referred to the principal infectious diseases; of these, 67 resulted from measles, 34 from scarlet fever, 42 from diphtheria, 122 from whooping-cough, 10 from enteric fever, and 51 from diarrhœa, but not any from small-pox, from typhus fever, or from ill-defined pyrexia. No death from any of these diseases was recorded last month in Stoke Newington; in the other boroughs they caused the lowest death-rates in Hammersmith, the City of Westminster, St. Pancras, and Camberwell; and the highest rates in Finsbury, the City of London, Shoreditch, Stepney, Poplar, Deptford, and Greenwich. The 67 fatal cases of measles showed a decline of 118 from the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Chelsea, Hackney, Finsbury, Bethnal Green, Stepney, Poplar, and Deptford. The 34 deaths from scarlet fever were 29 fewer than the corrected average number; this disease was proportionally most fatal in Paddington, Finsbury, Southwark, Bermondsey, Greenwich, Lewisham, and Woolwich. The 42 fatal cases of diphtheria showed a decline of 49 from the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Paddington, St. Marylebone, Finsbury, Shoreditch, Lambeth, and Woolwich. The 122 deaths from whooping-cough were 28 in excess of the corrected average number; the highest death-rates from this disease occurred in St. Marylebone, Shoreditch, Stepney, Poplar, Deptford, and Greenwich. The 10 fatal cases of "fever" showed a decline of 23 from the corrected average number; of these 10 deaths, 2 belonged to the City of Westminster and 2 to Stepney. The 51 deaths from diarrhœa were 31 fewer than the corrected average number; this disease was proportionally most fatal in Hampstead, Finsbury, Shoreditch, Stepney, Poplar, and Bermondsey.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1909.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1909.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,833,938	4	1363	557	—	86	3	33	450	13	2509	5·4	—	67	34	42	122	—	10	—	51	326	0·7	6943	15·0	112
West Districts.																										
Paddington	151,955	—	35	24	—	1	—	—	13	—	73	5·0	—	2	2	3	2	—	—	—	1	10	0·7	226	15·5	115
Kensington	183,683	—	47	11	—	4	—	1	18	1	82	4·7	—	4	—	1	2	—	—	—	—	7	0·4	250	14·2	173
Hammersmith	125,704	—	32	8	—	1	—	—	10	—	51	4·2	—	—	1	—	—	—	1	—	—	2	0·2	157	13·0	116
Fulham	176,406	—	70	22	—	6	—	6	11	1	116	6·9	—	1	2	2	3	—	—	—	2	10	0·6	182	10·8	89
Chelsea	75,249	—	16	6	—	—	1	—	1	—	24	3·3	—	3	—	1	1	—	—	—	1	6	0·8	119	16·5	136
City of Westminster	168,883	—	46	34	—	3	—	1	12	—	96	5·9	—	—	1	1	—	—	2	—	—	4	0·2	225	13·9	89
North Districts.																										
St. Marylebone	126,027	—	24	8	—	—	—	—	12	1	45	3·7	—	—	—	2	6	—	—	—	1	9	0·7	217	18·0	64
Hampstead	94,185	—	15	6	—	2	—	—	1	1	25	2·8	—	—	—	1	—	—	1	—	2	4	0·4	87	9·6	105
St. Pancras	237,422	—	73	25	—	11	—	—	18	—	127	5·6	—	—	—	—	5	—	—	—	2	7	0·3	364	16·0	131
Islington	351,202	3	87	38	—	5	—	2	16	1	152	4·5	—	1	4	3	10	—	—	—	3	21	0·6	512	15·2	132
Stoke Newington	54,423	—	7	—	—	1	—	—	4	—	12	2·3	—	—	—	—	—	—	—	—	—	—	—	63	12·1	69
Hackney	237,601	—	64	23	—	4	—	2	28	—	121	5·3	—	8	1	3	4	—	—	—	2	18	0·8	341	15·0	103
Central Districts.																										
Holborn	53,802	—	8	—	—	1	—	—	2	—	11	2·1	—	—	—	—	1	—	—	—	1	2	0·4	80	15·5	51
Finsbury	95,289	—	14	10	—	2	—	1	10	—	37	4·0	—	3	2	2	2	—	1	—	3	13	1·4	174	19·0	88
City of London	18,193	—	2	2	—	1	—	—	4	—	9	5·2	—	—	—	—	1	—	1	—	—	2	1·1	44	25·2	190
East Districts.																										
Shoreditch	114,802	—	18	13	—	3	—	1	24	—	59	5·4	—	—	—	3	8	—	—	—	3	14	1·3	214	19·4	149
Bethnal Green	131,316	—	32	16	—	1	—	2	25	—	76	6·0	—	4	—	1	3	—	—	—	1	9	0·7	226	17·9	124
Stepney	312,525	—	54	47	—	7	—	2	49	1	160	5·3	—	18	2	1	16	—	2	—	9	48	1·6	507	16·9	130
Poplar	171,965	—	37	16	—	3	—	—	23	—	79	4·8	—	10	1	1	15	—	1	—	3	31	1·9	285	17·3	126
South Districts.																										
Southwark	211,125	1	45	22	—	1	—	1	30	—	100	4·9	—	1	3	1	7	—	—	—	3	15	0·7	365	18·0	121
Bermondsey	127,569	—	53	17	—	2	—	—	11	2	85	6·9	—	1	2	—	3	—	—	—	6	12	1·0	221	18·1	122
Lambeth	324,188	—	144	38	—	4	—	2	21	2	211	6·8	—	—	1	5	5	—	1	—	—	12	0·4	473	15·2	108
Battersea...	186,036	—	65	23	—	4	—	3	9	2	106	5·9	—	2	—	1	3	—	—	—	2	8	0·4	237	13·3	132
Wandsworth	297,646	—	81	38	—	1	—	1	21	—	142	5·0	—	2	1	3	3	—	—	—	1	10	0·4	351	12·3	74
Camberwell	283,022	—	93	27	—	3	—	4	24	—	151	5·6	—	—	1	2	—	—	—	—	3	6	0·2	346	12·7	95
Deptford	118,583	—	27	19	—	2	2	1	18	1	70	6·2	—	5	1	1	9	—	—	—	1	17	1·5	185	16·3	138
Greenwich	111,014	—	36	10	—	7	—	2	9	—	64	6·0	—	2	2	1	9	—	—	—	1	15	1·4	163	15·3	127
Lewisham	160,749	—	94	31	—	3	—	—	16	—	144	9·3	—	—	4	1	1	—	—	—	—	6	0·4	177	11·5	70
Woolwich...	133,374	—	44	23	—	3	—	1	7	—	78	6·1	—	—	3	2	3	—	—	—	—	8	0·6	152	11·9	86
Port of London	—	—	—	—	—	—	—	—	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 40·3 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 112 per 1000 last month. The lowest rates of infant mortality were recorded in St. Marylebone, Stoke Newington, Holborn, Finsbury, Wandsworth, Lewisham, and Woolwich; and the highest rates in Kensington, the City of London, Shoreditch, Chelsea, St. Pancras, Islington, Battersea, and Deptford.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: T. F. O'Keeffe to the *Victory*, additional, for disposal; E. M. W. Hearn to the *Victory*, additional.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. Porter, Administrative Medical Officer at Belfast, is appointed Principal Medical Officer in the Western Command, *vice* Colonel G. T. Goggin. Lieutenant-Colonel E. H. Lynden-Bell is appointed to command the Station Hospital, Meerut, and Major H. T. Pocock to command the Station Hospital, Shahjehanpur. Major Swabey is appointed specialist in midwifery and diseases of women and children in the 5th (Mhow) Division. Lieutenant-Colonel H. Greany has been appointed Senior Medical Officer, Ceylon, vice Lieutenant-Colonel N. Manders. Captain J. W. S. Seccombe, who is serving in India, is appointed specialist in the prevention of disease, from Oct. 25th, 1909. Lieutenant-Colonel J. J. Gerrard is appointed Medical Inspector of Recruits for the Northern Command, England, Major J. H. E. Austin Recruiting Medical Officer to the London District, Major J. C. Morgan Sanitary Officer to the Irish Command, and Major S. G. Moores Staff Officer to the Principal Medical Officer, Aldershot Command. Major S. L. Cummings is attached to the Pathological Department at the Royal Army Medical College. Major C. W. Duggan, R.P., is appointed to the medical charge at Lincoln. Major H. G. Cummins, R.P., is appointed Professor of Botany and Agriculture to the University College, Cork.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. Sykes, Bengal, is permitted to retire from the service from Dec. 14th, 1909. Lieutenant-Colonel Weir, Lieutenant-Colonel Collie, and Lieutenant-Colonel Barry retire from Feb. 21st, 1910, and Nov. 18th, 1909, respectively. Lieutenant-Colonel Evans proceeds on a year's furlough, prior to retirement. Captain Good takes over charge of Moulmein Hospital, Burma. Major Leverton is transferred from Lakhimpur to Jalpaiguri as civil surgeon, where he will relieve Major Green, transferred as civil surgeon, Mymensingh. Captain Moses, Medical College Hospital, is appointed to act as civil surgeon, Purneah, and Captain Dutton to officiate as resident physician, Medical College Hospital, vice Captain Coppinger on leave. Captain G. E. Stewart is detailed to proceed to Somaliland on field service with the 127th Baluch Light Infantry, of which regiment he is the medical officer. Captain Williams is placed on special duty under the Bombay Government. Captain Young goes to the United Provinces for employment in the sanitary department, and Captain Overbeck Wright reverts to military duty. Lieutenant Densham resigns the service. Lieutenant V. B. Green-Armytage, medical officer attached to the 9th Bhopal Infantry at Rangoon, is appointed a specialist in midwifery and diseases of women and children, Burma Division. Captain A. D. White is appointed specialist in advanced operative surgery, 8th (Lucknow) Division, from Sept. 17th, 1909. Lieutenant H. H. Thorburn is promoted to be Captain, from Sept. 1st, 1909. His commission as Lieutenant dates from Sept. 1st, 1906.

There will be an exceptional flow of promotion shortly in the Indian Medical Service. Sir Gerald Bomford retired on Dec. 31st, 1909, and Colonel Lukis will presumably be confirmed as Director-General. The following Inspectors-General of Civil Hospitals will complete their five years' term in 1910:—Colonel Macrae, Bengal, Feb. 28th; Colonel R. D. Murray (on leave), United Provinces, March 28th; Colonel King, Burma, May 24th; Colonel Bate, Punjab, July 11th; Colonel Weir, Central Provinces, Oct. 25th. Colonel C. H. Beatson, Principal Medical Officer, Peshawar Division, will also be due to retire on June 15th.

TERRITORIAL FORCE.

Infantry.

6th (Renfrewshire) Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain Wallace A. Pride resigns his commission (dated Dec. 6th, 1909).

Royal Army Medical Corps.

3rd West Lancashire Field Ambulance: Captain Claude W. S. Saberton resigns his commission (dated Nov. 27th, 1909).

1st South Midland Field Ambulance: Lieutenant Seymour G. Barling to be Captain (dated Dec. 8th, 1909).

3rd Welsh Field Ambulance: Captain David L. Davies resigns his commission (dated Dec. 1st, 1909).

2nd Southern General Hospital: Major Arthur L. Flemming resigns his commission (dated Nov. 27th, 1909).

Attached to Units other than Medical Units.—Lieutenant Walter Fitzpatrick to be Captain (dated Oct. 28th, 1909). Captain William T. Hannah to be Major (dated Dec. 2nd, 1909).

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the undermentioned officers who have been duly recommended for the same under the terms of the Royal Warrant dated July 25th, 1892:—

Territorial Force: Wessex Divisional Engineers, Royal Engineers: Surgeon-Major Joseph Fuller (retired). 4th Battalion, The Prince of Wales's Volunteers (South Lancashire Regiment): Surgeon-Major Joseph Adams. 6th Battalion, The Manchester Regiment: Surgeon-Major George Henry Darwin (retired). 3rd Wessex Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Harry Munyard Brownfield (retired).

Volunteers: 1st Devonshire Royal Garrison Artillery (Volunteers): Surgeon-Lieutenant Arthur Goulston (retired). 4th Volunteer Battalion, The Norfolk Regiment: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Norfolk Volunteer Infantry Brigade) Charles Arthur Owen Owens (retired). 2nd (Berwickshire) Volunteer Battalion, The King's Own Scottish Borderers: Surgeon-Major Samuel Macvie (retired). 2nd Volunteer Battalion, The Highland Light Infantry: Surgeon-Major Walter Sandeman (retired).

THE INDIAN SUBORDINATE MEDICAL DEPARTMENT.

The *Pioneer Mail*, in a telegram dated Calcutta, Dec. 20th, states that "The effective strength of assistant surgeons of the Indian Subordinate Medical Department has been fixed at 472, of which the following are details: Military appointments, 353; reserve at 20 per cent., 71. Miscellaneous appointments, 42. Railway appointments, 28. Civil appointments, 131; reserve, at 15 per cent., 30; total, 655.

DEATHS IN THE SERVICES.

Surgeon-Major-General Charles Dodgson Madden, C.B., A.M.D., recently at St. Leonards-on-Sea, aged 77 years. He joined the service as assistant surgeon in 1854, became surgeon in 1867, surgeon-major in 1868, deputy-surgeon-general in 1876, surgeon-major-general in 1882, and retired in 1893. He served during the Crimean war (medal with clasp and Turkish medal), and was also with the 43rd Light Infantry in the Sangor Field Division in 1857, and in the Field Division under Colonel Primrose in 1859 (medal). Throughout the Abyssinian Campaign he served as surgeon of the 4th King's Own, and was present as field surgeon of the 1st Brigade at the action of Arogee and the capture of Magdala (mentioned in despatches and promoted surgeon-major "for valuable services rendered during the campaign," medal).

THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

Among the technical articles in the January issue of the *Journal of the Royal Army Medical Corps* the first place is given to an original communication by Captain Douglas B. Thompson, R.A.M.C., and Dr. Andrew Balfour, director of the Wellcome Research Laboratories, on "Two Cases of Non-ulcerating 'Oriental Sore,' better termed Leishman Nodules." It is a careful study of the subject, illustrated by ten process reproductions of photographs of the patient and of the microscopic appearances of the growths. The authors promise a further paper on the subject at a later date. A most interesting contribution is that from the pen of Major H. A. L. Howell, R.A.M.C., who tells the story of the army surgeon and the care of the sick and wounded in the British army from 1660 to 1688. The British standing army in 1661 consisted of 5000, who were paid by the Crown. The surgeon and his mate in a foot regiment together received 6*s*. 6*d*. per day, and there is a record of a chirurgeon drawing 4*s*. per day and his mate 2*s*. 6*d*. In the same year a pay list of the regiment of Horse Guards shows "chirurgeon ivs, and j horse to carry his chest, ijs......vis *per diem*." In the Life Guards the pay was 6*s*. per day and 2*s*. for a horse. It would appear that at one time charges for drugs were made against the Crown, but later an allowance was made for "physic for internal medicines." Lieutenant-Colonel R. J. S. Simpson, C.M.G., continues his articles on the Medical History of the South African War. Major J. P. Anderson, R.A.M.C., writes on Malaria in India. Captain R. H. Bridges, R.A.M.C., has a useful and suggestive article on the care of the soldier's foot mainly from the point of view of a well-fitting boot.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 11th, Sir J. N. Dick, K.C.B., in the chair, the sum of £72 10*s*. was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

ASEPSIS AND ANTISEPSIS.

To the Editor of THE LANCET.

SIR,—It seems to me that there are only three answers to the facts which I brought forward in my paper of Jan. 1st: (1) to admit their importance and look into the methods by which they were obtained; (2) to show that results as good, if not better, can be obtained by other methods; and (3) to throw doubt on the accuracy of the observations and the judicial care which had been exercised in classifying them. I am sorry to see that the replies, so far, have leaned towards the third heading, for it is the feeblest possible answer and one which stops further discussion. It, of course, admits at once my contention, that these results are better than those obtained by the methods so much in vogue.

I must confess that I was disappointed with the way in which my statistics turned out. Judging from my results in private, where the treatment of the cases is in my own hands, I expected that the percentage of infection would have been well under 1, instead of nearly 2. I, therefore, quite thought that if anyone of Mr. Sargent's experience in the modern methods took up the discussion it would have been on the second lines, and then it would have been a very interesting point to ascertain how far the methods which he used and those which I advocated approximated each other.

I need only say in reply to what has been said that I stated in my paper that I had verified the statements made, which surely means that I had looked into them carefully, and published them on my own personal responsibility. As I have said above, my results where I treat the cases from beginning to end are better than those shown in the statistics, and this statement will set Mr. Sargent's mind at rest as regards their value. As to the criterion adopted—that was the presence of pus as evidence of infection. Whether there is only one drop or a pint is a matter of no consequence from this point of view, the presence of any pus at all shows infection. I am afraid that what I write is not always read so much as I should like, otherwise it would be well known that I do not deluge my wounds with antiseptics; on the contrary, I strongly deprecate that practice and have repeatedly pointed out how contrary it is to Lister's teaching. To let bacteria into a wound and then try to get rid of them by douching with antiseptics is a very unsatisfactory procedure, and may be harmful, for once bacteria have entered a wound their eradication must be effected by the tissues, and these must, therefore, not be injured by manipulations, antiseptics, &c. Bacteria must be dealt with before they enter the wound, not after. The principles I follow are: (1) to start the operation clean (bacteriologically); (2) to keep clean during the operation; and (3) to see that the wound remains clean afterwards. All this can be done without any application of antiseptics to the wound, but I doubt if it can be done with certainty, especially in prolonged operations, without the assistance of antiseptics used outside the wound, especially to prevent reinfection of hands, instruments, &c. If Mr. Sargent would do me the honour of reading some of my writings—e.g., the Bradshaw Lecture, published last year—he would acquire some knowledge of the methods which I use, and perhaps he would not find them so "obsolescent" after all, and might realise that he could improve his results by the adoption of some of them.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 10th, 1910. W. WATSON CHEYNE.

⁂ Sir W. Watson Cheyne's Bradshaw Lecture on the Treatment of Wounds was published in THE LANCET, vol. ii., 1908, p. 1797.—ED. L.

To the Editor of THE LANCET.

SIR,—This very interesting correspondence has opened up the question of what ought to come in contact with a wound treated antiseptically. Mr. Sargent says, "The antiseptic school maintains that the chemicals should be poured upon a clean wound." Personally, I think he is mistaken when he states that this is the opinion of that school, because any chemicals poured on to a clean wound would have to be practically of caustic strength to kill living organisms. I have seen Lister operate many times, and while he washed wounds with carbolic solution, it was for the purpose of cleansing them from blood-clot and not with the intention of killing living organisms, as he knew well that this could not be done in the time with the strength of the solution he used. It is an entirely different matter when pure carbolic acid is poured on to a clean wound, as was the practice of one hospital surgeon, and which plan was carried out by one of his pupils a few weeks ago.

I do not consider that there is much to choose between the aseptic and the antiseptic methods, provided that either is carried out thoroughly, sensibly, and not simply as a matter of routine, but there are many loopholes for mistakes, without going the length I once saw, of a wire, after being straightened under a spectator's boot, passing at once into the abdomen, but the carbolic spray at that time was supposed to cover a multitude of sins!

I am, Sir, yours faithfully,

Jan. 10th, 1910. SKENE KEITH.

EXTRACT OF PARATHYROID GLAND.

To the Editor of THE LANCET.

SIR,—In your interesting leading article on the parathyroids last week you urge the importance of a further study of the therapeutic effects of parathyroid extract. Such investigation is undoubtedly desirable, but my experience is that the practical difficulties in obtaining enough extract are very great. It is now well known that the parathyroids cannot be distinguished from accessory thyroids, lymphatic glands, or isolated nodules of thymic tissue except with the help of the microscope, and that any of these latter tissues may be enclosed in the same capsule as a parathyroid. Before we can justly draw conclusions as to the effects of parathyroid treatment we must be quite sure that our extract is made from parathyroid tissue and nothing else. But this means a microscopical examination of every minute gland used in making the extract and the effect of this precaution on the cost of manufacture is obvious.

I tried to obtain a trustworthy extract for the purpose you mention from various English firms, but without success. Then, as I often read of its use in the American medical journals, I hoped to secure a supply from an American source. A leading firm could have supplied me with what I may call "reputed" parathyroid extract, but could not quote the pure extract—which, of course, is alone of value for investigations—at a lower price than £100 per pound! Perhaps heavy drug bills are less unpopular on the other side of the Atlantic than on this, unless, indeed, the treatment in America is carried out with the reputed extract. If this includes thyroid extract, and, as is quite possible, contains little or no parathyroid tissue, its therapeutic use is likely to cause ambiguous results.

I am, Sir, yours faithfully,
DAVID FORSYTH.
Queen Anne-street, W., Jan. 10th, 1910.

STATE REGISTRATION OF NURSES.

To the Editor of THE LANCET.

SIR,—The report of the speech of the Hon. Sydney Holland at a recent meeting of the Cottage Benefit Nursing Association makes curious reading. No one suggests, as he apparently assumes, that because a nurse has passed a State examination therefore she has *all* the attributes of the *best* nurse, any more than that everyone called to the Bar has the erudition of a Williams or the insight into human nature of a Russell, but merely the fact that a woman has satisfied a competent board of examiners that she has undergone, say, three years' training in a well-equipped hospital, and that she understands the principles and practice of her profession would be some guarantee that she was capable of undertaking the duties of a nurse. "He admitted the evils arising out of the present state of affairs," but went on to suggest that, to assess the amount of knowledge of nursing of the lady in the uniform would be likely to bring about a worse state of things than obtains at present. "There were things far more important in a nurse than mere ability to answer the questions of an examiner." True, but the same might be said about the medical profession or, in fact, any profession which entails the passing of an examination before the examinee is allowed to follow his calling. But because this is so does Mr. Holland suggest that there should be no general recognised average test of the claimant to the particular calling? To say that the holder of a pass certificate may not know all or be all that a nurse should be is to state a truism, but to suggest that because she has satisfied a competent assessor that she does know something therefore she is less of a nurse or further from the ideal is ridiculous.

No one with any acquaintance with the world of quackery which surrounds the practice of medicine will for one moment suggest that if State registration of nurses were an accomplished fact none but well-qualified nurses would go clothed in any of the mystic mantles or adorned with the *chic* headgear which we are accustomed to associate with the doctor's true help-maiden. That were too much to expect, but because there would still be usurpers of the toga is no reason why the Legislature should not say "you shall not behave in such a manner as will lead the general public to believe you are a properly trained registered nurse, and if you do you shall be liable to prosecution." But for the eminence of the speaker and the work he has done for hospitals, his illogical and reactionary dicta might easily have been passed over.

It would seem from the tone of the speeches generally at the meeting that the participators in the debate were unaware that State registration has been tried in some countries, and has not been found to produce the evil effects which the speakers foreshadowed. There was placed on the Statute Book of New Zealand, mainly through the efforts of Mrs. Neil, late assistant inspector of hospitals, a Nurses' Registration Act. By this Act a candidate for registration must show a three years' consecutive training at certain recognised hospitals and pass the State examination. One result of this has been to lessen the difficulty of the patient or doctor seeking a qualified nurse. No longer need he wade through the lengthy tribute to the claimant's skill and knowledge, his difficulty in deciphering the signatures of the attesting witnesses is removed, and he has come to be able to look upon the elaborate *sigilla* with a respectful but proper regard. "Are you on the Register?" is all that he need ask to come to a decision with regard to her employment. He has still a power of election just as a person suffering from a disease has with respect to his medical attendant, and if B comes nearer his ideal of what a nurse should be he need not engage A solely because she is a duly registered nurse.

In England it is not unknown for a matron of one hospital to suggest that a woman cannot be properly trained in any institution except the one under her control. The suggestion may be true but it is unlikely; in any case as all nurses cannot pass through that particular hospital there is found to be some degree of dissent amongst the various teachers and amongst those taught. It would be an easy matter for the examining board to decide what certificates should be accepted, and if the candidate trained at any of the authorised hospitals satisfied the examiners as to her knowledge of the art of nursing she should be allowed to label herself as a duly qualified nurse. No Act can be retro-active, and it may be that at first some unqualified persons will in virtue of their having been in practice for a certain period before the coming into force of the Act be enrolled upon the Register. This is unavoidable and has happened with respect to all so-called protected professions, but a limitation can easily be inserted into the Act preventing such untrained persons both from coming up for examination or getting on the Register. The sooner, however, this time period is set up the sooner will the registered nurse come to mean a properly qualified person.

A Bill on the lines of the New Zealand Act would, I am certain, work for the benefit of an often ill-paid and poached-upon profession. It would be something also if a section could be introduced which would make for some uniformity in the habiliments of nurses in public. If a distinctive dress for outside parade purposes is necessary, then I trust the board would be satisfied with something less stage-like than some of the dresses seen in London streets. Every colour would seem to have been impressed into the service and some of the combinations are not what would be termed "chords." To anyone interested in the exact wording of the New Zealand Act the High Commissioner would, I am certain, gladly put at their disposal a copy of the statute.

I am, Sir, yours faithfully,
J. M. MASON,
Medical Officer of Health, New Zealand.
Highgate, Jan. 4th, 1910.

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,—In the discussion that has appeared in your columns under this heading much critical disagreement might perhaps have been saved if the term "corset" had been more clearly defined. The word itself seems to convey to many people merely the idea of an article of apparel intended to æsthetically improve the shape of the feminine figure in accordance with the dictates of fashion, whether this be by constricting the waist, flattening the abdomen, or perverting the natural position of the breasts. That corsets may have been used for this alien purpose by a foolish minority is, of course, obvious, otherwise medical strictures would never have arisen; but it is equally obvious, by the light of their history and evolution, that corsets were never intended for this purpose, nor are they indeed so used by the masses of women who universally adopt them. The true intention of the corset is more rightly conveyed by its old English synonym "stays," because "to stay" means to hold an object in its precise and proper place without any overpull in one direction or another, just as indeed the mast of a ship is held by its stays in a true position. Of course, if any part of the human body has to be "stayed" this presumes some structural disability, but it will be found that this structural disability does exist and that, with the majority of women in all ages, it has been met by some form of loin band, this band in the present day being embodied in the garment known as the corset.

In my previous letter I pointed out that the ancients wore their "corsets" in three separate pieces—the loin-band, the waist-band, and the breast-band. I insisted, as indeed was the case, that the loin band was the universally used and essential piece and that the other two were occasional and adjunctive only. Similarly in the modern corset, which has been evolved from the triple bands of the ancients, it is that part which represents the loin band that is alone essential and the other parts of the corset are generally adjunctive, although in special instances they might be of service in the support of pendulous breasts or of weakly backs. For the sake of clearness I may at once define the area that is covered and "stayed" by the loin band. This band takes its grip behind on the sacrum and on the lower lumbar vertebræ, and it supports the abdomen in front from a little above the umbilicus down to the pubic bone. This particular abdominal area has with most women to be "stayed," and there has been an instinctive impulse on the part of all women from the earliest records onwards to so gird their loins that the abdomen is supported over the area I have mentioned, whether this has been done by a leather or network zone, by any simple textile bandage, or by the article of apparel now known as the corset. And I maintain that this instinctive impulse to obtain support has its origin in a more or less general structural disability of the body when in an erect position.

With this preamble I may now proceed to a review of the whole discussion. It was initiated in a masterly article by Mr. W. Arbuthnot Lane, who, as the results of his large intra-abdominal experience, gave a series of important and sequential facts. He pointed out that in consequence of man's persistently erect position his abdominal viscera tended to downward displacement. He showed that nature endeavoured to meet this disability by strengthening the inadequate visceral slings by means of extra or "acquired" peritoneal bands. He demonstrated that this effort of nature to prevent lapse most frequently proved insufficient and that the abdominal organs gravitated downwards. He then described the condition, that of intestinal stasis and auto-intoxication, which inevitably ensued. And he finally asserted that by far the most important factor in the treatment of this morbid condition was a particular kind of corset that lifted the abdomen below the umbilicus in a direction upwards and backwards, but left the rest of the abdomen free from pressure. It will be observed that the area of support indicated by Mr. Arbuthnot Lane is, as is only natural, precisely the one embodied in the loin-band hold to which I have previously referred.

In my letter which followed Mr. Arbuthnot Lane's article I was able to add some further corroborative facts. With a somewhat lengthy extra-abdominal experience acquired whilst dealing with such things as hernia and moveable kidney, I had long since found that the lower abdominal walls were very frequently stressed by the descent of the organs in consequence of the yielding of their sustaining peritoneal slings. In writing on corsets some few years since I pointed this out, and, taking a mechanical or morphological view of the body, I explained it by the fact that man is built for a quadruped and not for an erect position, and that therefore neither his peritoneal slings nor his abdominal walls are adequate to resist the persistent drag of gravity upon his abdominal viscera. I also opined that in all likelihood the abdominal walls were by evolution strengthening, and it would appear from Mr. Arbuthnot Lane's observations than the peritoneal slings are tending also to strengthen in a similar way. And I advocated the use of corsets with the proper loin-band hold, because it appeared to me that they were in most instances positively necessary to combat the inherent structural disability under which mankind suffers when in the erect posture.

The physiology of intestinal congestion or stasis was carefully worked out by Professor Roy, M.D., F.R.S., and Professor Adami, M.A., when they issued their conjoint paper on Waist-belts and Stays in 1888. I referred to their paper in my last letter, and I may make some additions. They took the beneficial use of a waist-belt, whether solely or embodied in a stay or corset, as an accepted fact, and they were seeking simply to find an explanation. Their experiments were made with particular reference to the circulation, and they came, although in a different way, to precisely the same conclusions as those of Mr. Arbuthnot Lane—namely, that in consequence of the erect position of the body a large amount of waste blood accumulated in the intestines even with the strong, whilst with the weakly this amount was greatly increased. They held that the remedy for this condition was gentle compression of the lower abdominal walls. Hence they asserted that "the waist-belt is of use and has been constantly used in those cases where, through want of tone in the abdominal wall, it becomes necessary to counteract the tendency to a useless storing up of blood in the abdomen, and also most frequently by those in perfect health to bring more blood into the service of the brain and muscles so as to conduce to an increase of mental and muscular activity." And, in perfect fairness of mind, they concluded their paper with the following words: "The authors are emphatically not advocates of tight-lacing. Their desire has been to point out that the widely spread habit of wearing some form or other of waistband, which may almost be termed an instinct, has a physiological basis and is not of purely æsthetic origin." One word of explanation I may add, and it is that their term "waist-belt" is intended to denote what I have called loin band, and that it did not extend as high as the waist at all, and therefore did not compress it.

Now I think all that I have previously given is a statement of the actually observed facts that have a bearing on the use of corsets. It will be interesting now to note the views of your correspondents. One of them, Dr. Lætitia H. Andrew-Bird is entirely in favour of the use of proper corsets, and being a lady doctor of long experience her confirmatory opinion must necessarily have considerable weight. Another, Mr. H. M. M. Woodward, corroborates Mr. Arbuthnot Lane's observations as to chronic intestinal stasis. But the rest advance various arguments in opposition to the use of corsets, and these arguments I will proceed to examine.

Dr. Cecil E. Fish, in a carefully considered letter, first states that there are many women who never require corsets. This statement may be readily admitted. If their abdominal walls are tonic and their mesenteric slings do not yield then they may be able for the time or even for life to do without stay support. But the fact that some few women can dispense with corsets cannot be held conclusive as against their use by the majority. This argument has been used before and is generally put by its advocate thus: "I have known many women who have been able to go through life without corsets and therefore corsets are bad in themselves and should be dispensed with." But that this reasoning is illogical can be shown by analogy. For instance, the same advocate might urge: "I have known many women who have been able to go though life without marriage and therefore marriage is bad in itself and should be dispensed with." It is clear that it is the experiences of the majority that have to be considered and not those of the perhaps luckier minority.

Then again, Dr. Cecil Fish raises the respiratory argument. Now this is based entirely on the assertion of Hutchinson that the pectoral breathing of women was due to the wearing of corsets. I am strongly of the opinion that Hutchinson, after his erudite investigations into respiration, found himself faced with the necessity of giving some reason for this pectoral breathing, and that he seized on the corset theory as the only one open to him. In any event it is wrong to assume that Hutchinson's view was accepted by physiologists. On the contrary, Mr. John Marshall, in his classical work on Physiology, wrote: "Pectoral breathing is the characteristic form of breathing in the female, a fact which has by some been attributed to the habitual use of stays, but which may be a provision against the impediment to abdominal respiration which occurs in that sex."

However, as Dr. Cecil Fish's argument was worthy of more than verbal dispute, I determined to submit the point to actual experiment. The difficulty was, of course, to get a number of ladies, some of whom wore corsets, some of whom did not wear corsets, and some of whom had never worn corsets, altogether under similar conditions in a state of strong respiratory activity. I managed this in the following way, and I asked a young lady, whom for brevity I will call Miss X and who is a noted hockey player, being an "international," to arrange it for me. A club to which she belonged was going to play against the Cambridge team and I was invited not only to watch the match but was attached to the umpire with perfect liberty to move about the ground and make whatever observations I wished. Miss X obtained for me complete information about the garments then and previously worn by the members of her team; indeed, the young ladies themselves knew I was watching them over the matter of corsets, but thought that I was simply engaged in noting whether the corsetted or uncorsetted displayed the greater activity. Miss X alone knew that I was observing the respiratory movements, and she managed at the intervals to gather the team together in conversation, so that my observations should be facilitated. All the young ladies were clad in close jerseys and short skirts that fitted evenly on the hips, hence the pectoral and abdominal movements were easily observed. Now most of the team wore corsets in ordinary life, but some played with and some without corsets. One young lady in particular had never worn corsets at all, and it is needless to say that I kept her under most special notice. The result, however, was as I anticipated—in all instances the breathing was pectoral and not abdominal, and there was no difficulty under the circumstances about noting the facts. Hence I am of the opinion that Hutchinson was in error, and this being so, any argument based on his assertions falls void. I may add that Miss X herself—and she is well known as an athlete—had tried playing without corsets, but had found she did better when resuming them. The corsets she wore were short "riding corsets" with the bones taken out; in fact, they embodied simply the loin band that I have stated to be essential.

Dr. Fish asks another very pertinent question, although he associates it with a jest about babies. At what age is it advisable to begin wearing a corset? A consideration of the grounds on which I have stated corsets to be necessary supplies the answer. During development and growth the viscera are not liable to lapse, and the abdominal walls in youth are invariably competent. Therefore I am of opinion that corsets, physiologically considered, are never actually required before adult life. They are not positively necessary for a girl before the age of 16 or 17, when the loin band becomes the means of hanging the skirts to the hips instead of to the shoulders. If a girl or a woman can do without corsets altogether, so much the better for them. I should be the last to advocate the cumbrance of humanity with anything unneeded. But the fact remains that sooner or later most women will gird the loins with benefit to themselves and one cannot get away from it.

Dr. Fish makes another statement which also calls for comment when he says that a woman cannot fasten her corset in its usual dimensions when she takes a deep inspiration. All I can reply to this is that the corset concerned is not a correct one inasmuch as it compresses the ribs. I can simply repeat that the only tight part of a corset should be the loin band, and that the other parts of the modern corsets are perfunctory except in special instances.

Dr. James Kirkland's letter obviously also deals with corsets of the same faulty type, and it is therefore valuable in this respect because it exposes the errors of the æsthetic as contrasted with the physiological corset. But his arguments, which are based on the faults of the former, cannot be regarded as cogent against the latter. The most astounding statement, however, in Dr. Kirkland's letter is his assertion (and I know not on what grounds) that uncivilised women do not breathe pectorally, as do the women of civilisation, but breathe as men do. If Dr. Kirkland's statement is correct and he can substantiate it, it would introduce an entirely new factor into the theory of respiration. It is impossible for me to offer in so short a time any experimental contradiction, as one cannot collect in London a bevy of nude Zulu girls for a game of hockey. But I have written to a friend of mine who is a doctor (and who has just gone out to South Africa, to investigate, amongst other things, the sleeping sickness), asking him to clear up this very important matter.

So much, then, for the question of abdominal support as far it concerns women, but in my previous letter I made some slight allusion to the girding of the loins by men as being an indication that they also in heavy exercise found some support useful to the lower abdomen, and especially so in hot climates. The matter was quite a subordinate one, only it led to a letter from Colonel H. E. Deane (R.A.M.C., retired), who controverts my statements. Colonel Deane insists that the native Indian when girding his loins only tucks his loin cloth out of the way, and in no way uses it for purposes of support, as I have stated. I have referred this matter to an Indian gentleman who practises as a doctor in London and with the suavity of the East he informs me that we are both right. The native, he tells me, of course tucks his loin-cloth out of the way of his work, but he also tightens it round his loins and in particular supports his scrotum. I made a similar assertion about the Arabs, and this, again, Colonel Deane contradicts. I cannot do better, perhaps, than once more quote from the address of Professors Roy and Adami on this matter of girding the loins: "Thus is to be explained the employment of tight belts by gymnasts and modern athletes. This use has been recognised from the earliest times. Thus in 1 Kings xviii. 46 (and elsewhere) Elijah is said to gird up his loins. The word for girding up is, we are informed by Professor Robertson Smith, best rendered *fortiter constrinxit*—tightly constricted. Similarly the Greek expression for an active man—εὔζωνος, well girt—arose from a like conception. The Romans had a corresponding phrase, and eventually amongst all these nations, as among the Arabs of the present day, a loose girdle or belt when in public places was looked upon as a sign of want of vigour." I think I prefer to accept this statement rather than that of Colonel Deane. But Colonel Deane fires off his final shot of contradiction with the ejaculatory sentence, "Fancy a Marathon runner running in an abdominal belt!" Well, native Indians and native Arabs may not be easily accessible, but Marathon runners are. Mr. C. W. Gardiner, who beat Dorando the other day, and did the Marathon course in record time, was kind enough to give me all the information I required. Mr. Gardiner tells me that, except when actually racing, he always wears a flannel belt 10 inches wide. Runners, he says, should always wear such a belt at such times as it strengthens the loins. When actually racing he discards the belt because it would be in the way, and wears instead a band with a suspensory support for the testicles; and, adds Mr. Gardiner, no man or youth should run without them. By wearing them you have more freedom when running and are not likely to get a rupture in that part. I commend these facts to Colonel Deane.

I am, Sirs, yours faithfully,

Jan. 10th, 1910. HEATHER BIGG.

THE INDICATIONS FOR OPERATION.

To the Editor of THE LANCET.

SIR,—I should like emphatically to endorse Dr. Leonard Williams's protest against Mr. Moynihan's claim that operation for duodenal ulcer can be undertaken without physical examination. I have been engaged in the making of post-mortem examinations for the last ten years. We are often told now that the "results of necropsy are to be controlled by those of biopsy." Unfortunately a necropsy occasionally follows the biopsy somewhat speedily, when the control is exercised in the opposite direction. More than once it has been my lot to find that a normal duodenum has been operated upon.

"It is not necessary to the attaining of an accurate diagnosis that an examination of the patient should be made." This is the spirit which leads to the not infrequent performance of gastro-jejunostomy for the gastric crises in tabes, and even, as I can vouch, for the dyspepsia of phthisis. It is a spirit which, if persisted in, would dispose of the claims of surgery to be a science.

I am, Sir, yours faithfully,

Welbeck-street, W., Jan. 10th, 1910. W. LANGDON BROWN.

THE PARLIAMENTARY REPRESENTATION OF THE EDINBURGH AND ST. ANDREWS UNIVERSITIES.

To the Editor of THE LANCET.

SIR,—I think it only right to point out that your Scottish correspondents' information is misleading. It is perfectly true that some of Sir Alexander Simpson's personal friends very much regret that he has come forward, but that is because they are active supporters of Sir Robert Finlay, and they recognise that Sir Alexander Simpson is about the strongest candidate the other side could put forward. Your correspondent is surely unaware that it is one of the justifications of University representation that men who are not politicians in the ordinary sense thus find their way to Parliament. In the past Edinburgh and St. Andrews have had such representatives and Sir Alexander Simpson's supporters hope to have one again.

In considering the details of the social reforms which, whatever party is in power, are sure to be brought forward at an early date, Sir Alexander Simpson's long experience of medical practice should prove invaluable.

I am, Sir, yours faithfully,

Edinburgh, Jan. 11th, 1910. NORMAN WALKER.

THE DANGERS OF INFECTED EARS.

To the Editor of THE LANCET.

SIR,—"For every child who dies from a blow, a thousand die from the effects of neglected ear disease." The above is an extract from an article in one of the daily papers, and is the first forcible allusion that I have seen in the daily press to a matter that is of great importance to the community. Whether the writer of the article referred to was fully justified in this remark or not, the consequences of neglect in suppurative otitis are often very serious and by no means generally understood. It seems to me a matter for regret that certain aural surgeons have not yet recognised the immense value of proper intrameatal treatment, for I have shown by results that nearly every case of suppurative otitis may be cured by intrameatal treatment, if that be adopted before coarse lesions of bone or infection of brain has taken place.

It has been said that cases treated by otectomy would probably relapse, but though I have seen several of my old cases this year every one of these was in a perfectly satisfactory condition. I have, however, seen several cases in which the radical mastoid operation had been performed in which infection of the cavities concerned persisted or had recurred. I am aware that much of the syringing that is carried out in aural disease is ineffectual, but when proper cleansing of the middle ear is done good results may be confidently expected. The radical operation should only rarely be required. I am, Sir, yours faithfully,

Jan. 4th, 1910. F. Faulder White.

DERMATOLOGY IN RELATION TO GENERAL MEDICINE.

To the Editor of The Lancet.

Sir,—It is a great source of pleasure to read your leading article on dermatology and its relation to medicine of the present day. For many years past dermatology has been put in the background in the various sections of medicine. Why, we elder dermatologists know not. The British Medical Association at their annual meetings have sometimes omitted the section of latter years. Those of us who know anything of dermatology meet every day in our private and hospital practice many errors in diagnosis—for instance, scabies for eczema, eczema for scabies of some years' standing sometimes, psoriasis for eczema or lichen, herpes for syphilitic eruptions, &c. It is a great pity that in the leading hospitals and schools more attention is not paid to the *diagnosis* of skin diseases, for without diagnosis what is the use of treatment? There is another thing, we are increasing the nomenclature of our section with words of many syllables as epidermolysis bullosa, and so on. It is not easy for students to understand all these new names. I am of opinion it would be of much advantage to students if at least one question on dermatology and a few cases for diagnosis were put before them at their examinations. Why should the section be left out in examinations, when much attention is paid to the eye, ear, throat, chest, and other affections? As you say in your article, skin affections are indicative of certain constitutional affections, such as gout, diabetes, and various tropical diseases. Dermatologists have much to contend against in quack medicines and beauty shops. It is high time the authorities looked into these matters.

I am, Sir, yours faithfully,

James Startin,

Senior Surgeon to the London Skin Hospital.

Stratford-place, Jan. 10th, 1910.

The Waters of Bath.—Sir James Dewar, who has been experimenting for some years with the hot mineral waters of Bath, announces that krypton and xenon, which Professor Moureu and Professor Lepage have discovered in the waters of Aix-les-Bains, Saint Honoré, and some other French springs, have been separated from the gases given off from the King's spring at Bath.

Ninth Congress of the German Society for Orthopædic Surgery.—The ninth Congress of the Deutsche Gesellschaft für Orthopädische Chirurgie will be held in Berlin (at Langenbeckhaus, Ziegelstrasse, 10/11) on Tuesday, March 29th, the day before the meeting of the German Surgical Society. An invitation has also been received by the society from the Bureau des Volksheilstättenvereins vom Roten Kreuz for its members to make an excursion free of cost to Hohenlychen (Uckermark) to inspect institutions there for tuberculous children and other institutions. Full particulars may be obtained from Dr. Georg Joachimsthal, the President for 1910, Genthinerstrasse, 16, Berlin, W.35.

THE END OF THE WINE WAR IN FRANCE.

(From our Special Sanitary Commissioner.)

The wine war in the South of France is probably not yet forgotten, though the interests involved did not affect English consumers to any considerable extent. To-day the wine war and the distress it occasioned are happily terminated, and this by the advent of unusual prosperity. The distress leading up to fatal riots affected four departments and reached the climax in 1904. The yield of wine in France amounted during that year to 69,000,000 hectolitres; and, according to the returns of the Ministry of Agriculture, the value of wine fell in the department of the Aude to 5 francs the hectolitre, 8 francs in the Gard, 6 francs in the Hérault, and 11 francs 95 centimes in the Pyrénées Orientales. A vine called Aramon had been planted which yielded an enormous amount of grapes, but the wine made from this grape soon turned sour because it only contained 6 per cent. of alcohol. The wine growers therefore added sugar. The amount required was equal to three and a quarter pounds of sugar for every degree of alcohol per hectolitre of wine. It is regrettable to have to record that this practice was encouraged by the authorities. The tax on sugar, which was £2 11*s.* 3*d.* per 100 kilogrammes (2 hundredweight), was reduced to 19*s.* 3*d.* when the sugar was used for making wine. But the wines from the South of France are mainly employed for mixing purposes and sugared wines do not mix well, so that, after all, these wines did not find favour. Then the Brussels Convention of Sept. 1st, 1903, reducing the duty on sugar to £1 further dislocated the trade in sugared wines. The cheaper sugar so increased the production of these wines that the prices dropped to the figures given above for the year 1904. The next year the prices were lower still. Then the very men who had employed sugar wholesale, raised the cry of "death to the adulterators," and the Government was urged to prevent these evil practices. Some four years have now elapsed and the Government has had time to take action. As a consequence the sugaring of wine has been well-nigh abolished, the processes of making wine improved, and the reputation of the four departments to a large extent rehabilitated. In the debate that recently took place in the French Chambers it was claimed that no less than 20,000,000 hectolitres of artificial wines had been eliminated. The ordinary red wine used to be sold at 1 franc or 1 franc 10 centimes per degree of alcohol per hectolitre, and therefore the price for some years has not been higher than from 8 to 10 francs the hectolitre. But last year, what with a slight shortage in the output of wine and improvement in the wine itself, there has been a great rise in the prices. The output for the four departments showed a decrease of 5,725,000 hectolitres, and now the cheapest red wines are selling at 14 francs and 15 francs, the pink wines (*vins rosés*) at 17 francs to 18 francs, and the white wines at 20 francs and even more than 20 francs the hectolitre. As this is estimated to equal an average increase of 5 francs per hectolitre and the vintage this year yielded 25,000,000 hectolitres in the four departments, the consequence is that 125,000,000 francs or £5,000,000 more money has been received in these four departments during last year. This is enough to efface many a bad debt and remove many a grievance. The Government interference in preventing adulteration has therefore benefited, and not injured, the trade.

All these details should be of great interest to the advocates of the policy with regard to alcohol which considers that the cause of temperance is served by the use of light wines. The controversy on the question is mainly confined to the effects produced by what the people drink, and is not extended to the effects that would result if the law prevented the sale of adulterated drink and facilitated the sale of what continental reformers qualify as hygienic drinks. In Bavaria it has been a criminal offence for now more than 500 years to make beer with anything else but malt, hops, yeast, and water. Excessive drinking of Munich beer may produce obesity and other physical ailments, but it does not seem to cause alcoholism as we know it, while alcoholism does not prevail in those native populations that have natural wine for their daily drink. For instance, in France there is drunkenness in Brittany, Normandy, Picardy, and the north generally because these are non-wine-producing provinces, and the habit of drinking spirits was contracted before railways rendered it possible to obtain cheap wine. Drunkenness, insanity, and crime increased throughout France when the phylloxera destroyed the vintages and the consumption of spirits consequently increased. Now the vines are reconstituted the supply of pure wine is abundant, and we have Algeria, South Africa, Australia, California, not to mention many European countries besides France, to supply cheap light wines. But wines offered at even 1*s.* a bottle are of no use to the temperance cause. A man, especially a workman engaged in manual labour, requires at least a bottle a day and certainly cannot afford a shilling a day, and therefore he will get the equivalent amount of alcohol in a cheaper but an injurious form. In France, however, we now have four departments rejoicing in unprecedented prosperity and the wine war happily concluded because they can sell an ordinary red wine at 15 francs the hectolitre. This means 100 litres for 1500 centimes, or one litre for 15 centimes, or 1¾ pints for 1½*d.* That is less than 1*d.* for an imperial pint. Indeed, a pint is only a little more than half a litre—namely, 0·568 litre —so that the wine costs hardly more that ¾*d.* the pint even at its present enhanced price.

The inference to my mind is that it should be possible, if we allow 100 per cent. for profits and transport, to retail natural ordinary wine in England at from 1½*d.* to 2*d.* a pint or 3*d.* a litre to the great gain of the population. The ordinary pure light red wine may be qualified as a hygienic drink and has been allowed admission in France *octroi* free as a means of promoting temperance. Why cannot such wine be available for the poorer sections of the population in this country? We have seen how, in the cause of temperance, the Paris municipality removed the *octroi* or town dues on wine, though this entailed a sacrifice of £2,000,000 per annum.[1] Thus the Parisians were able to buy wine at 2*d.* the litre retail price; and, by having wine so cheap, the consumption of spirits and the consequent prevalence of drunkenness has decreased. From a grocer's shop in Paris we obtained a litre of wine for 2*d.* and it came from the department of l'Aude. Analysed in our laboratory, this wine had the same composition as high-class and expensive clarets. There is no chemical difference between dear and cheap claret. The cheap wine is new, and from an ordinary vintage; the dear has been stored for some time and comes from a celebrated vintage, which gives the wine a special bouquet, and is dear because there is but a limited supply. We ought to be able to get in England wholesome wine at very low prices. As matters now stand, these cheap wines are charged 3½*d.* per litre Custom dues. The French colony in London seeks to obtain *vin ordinaire* for meals and the cheapest retailed costs 7*d.* the litre, which is cheap enough for the middle classes but still too dear for the working classes. If what occurs in other countries may be relied upon, a valuable way of promoting the cause of temperance would be to provide the populace with the opportunity of buying sound *vin ordinaire* at bottom prices.

LIVERPOOL.

(From our own Correspondent.)

Liverpool Workhouse Hospital: Strictures by Sir Henry Burdett; Indignant Guardians.

The recent article in the *Hospital* by Sir Henry Burdett condemning the Liverpool workhouse hospital gave rise to an animated discussion at a meeting of the workhouse committee on Jan. 7th, when Sir Henry Burdett's unofficial report, together with the official report of Mr. Arthur Lowry, the Local Government Board inspector, came under review. Mr. Edward Horrigan, who opened the discussion with a review of both reports, said that the report by Mr. Lowry was the most important document placed before the committee since the report of Mr. Jenner-Fust in September, 1894, on the accommodation of the workhouse. In discussing the report of the Local Government Board inspector he said that he could scarcely refrain from referring to the unofficial report which appeared in the *Hospital* and had been extensively quoted in the *Liverpool Daily Post and Mercury.* He had heard during the past week this report by Sir Henry Burdett rather variously described. One gentleman had described Sir Henry Burdett as a "hospital crank," and another as a "statistical faddist," while the *Daily Post and Mercury* referred to him somewhat disparagingly as a "touring London journalist." He did not think any of these descriptions did Sir Henry Burdett justice, seeing that he was considered to be one of the highest authorities on hospital construction, hospital management, and hospital accounts. It was because he was such an authority, and had enjoyed up to the present such a high reputation in the hospital world, that the guardians had been shocked to find him indulging in the language with which he had characterised the famous old hospital with which they were associated. From the Liverpool workhouse hospital had emanated most of the reforms which had been effected during a number of years in the direction of alleviating the sufferings of the sick poor. Perhaps the most important of those reforms, one which stood out in the history of England very prominently, was initiated by their late colleague Mr. William Rathbone, the introduction of the trained nursing system, which had since been adopted almost universally throughout the workhouses of the country. In his report Sir Henry Burdett seemed to have lost his ordinary sense of perspective. He had placed the Brownlow Hill workhouse hospital in juxtaposition with the Liverpool Royal Infirmary, one of the most modern and almost perfect hospitals, and the workhouse hospital had naturally suffered by comparison. Probably Sir Henry Burdett had also in his mind's eye the recent completion of the Manchester Royal Infirmary, which had cost, site included, over £500,000, or £800 a bed. There was one feature of Sir Henry Burdett's report to which special reference ought to be made as it had shocked the moral susceptibilities of the citizens of Liverpool. From the report the average reader might jump to the conclusion that the female lock and maternity wards were hopelessly and inextricably mixed up together. He need not assure the committee or the citizens of Liverpool that such a state of things did not exist at Brownlow Hill. If they did exist, the members of the committee would deserve execration and hounding out of public life. They, however, who knew something about the various sections of the workhouse hospital were aware of what was in Sir Henry Burdett's mind. The workhouse hospital could not select its cases like an ordinary hospital, and it had to be, so to speak, a "pathological refugium peccatorum," both the refuge of sinners and occasionally the hospital to which virtuous wives, suffering from no fault of their own but through vicious husbands, had to come. It would be monstrous to consign the innocent as well as the guilty to the lock wards. Regarding the efficiency of the maternity wards, he had the authority of the lady superintendent of nurses (Miss Stewart), one of the most conscientious and able officials working under the Poor-law, that no such case of contagion as Sir Henry Burdett had suggested had ever come under her notice in her 24 years' service. The committee would probably recall that Mr. William Alexander, the visiting surgeon, contributed to The Lancet an article on the Brownlow Hill workhouse infirmary, in which he showed that in 401 maternity cases only three deaths occurred, or 0·74 per cent. These three cases were all characterised by serious complications which often lay beyond the most advanced medical science. Reverting to the text of Sir Henry Burdett's report in the *Hospital,* Mr. Horrigan admitted that the floors of the workhouse infirmary were old, but the committee had quietly and unostentatiously been engaged in effecting many improvements. Sir Henry Burdett's remarks on the interior brick walls could be passed by as hypercritical. The mattresses had given Sir Henry Burdett a good deal of concern, but the committee could view with equanimity his proposal to sentence them for life to fibre mattresses and flock pillows. Hair mattresses and feather pillows were above the standard which the general body of ratepayers could afford for themselves, but in the case of very serious illness in the workhouse infirmary it might be possible to make such patients more comfortable in respect of bedding. Regarding the official report of the Local Government Board inspector—nothing being set down except what had been actually deserved—there were many things mentioned which the committee must seriously take in hand at once. Miss Thorburn, one of the lady guardians, in a temperate and sensible speech, replied to Sir Henry Burdett's attacks on the workhouse hospital. The sanitary arrangements, she said, about which charges had been made, were quite satisfactory. As to the mattresses and beds, she had got the master of the workhouse to send her one. She had slept on it for two or three nights and found it very comfortable indeed. Mr. Arthur Lowry, Local Government Board inspector, said he was glad to attend the meeting of the committee, but his pleasure was a little dashed by seeing the report of Sir Henry Burdett. He rather dreaded the frame of mind that this report might have produced amongst the committee, and he must congratulate them upon the way in which they had taken it. The dignified manner exhibited by the ladies and gentlemen who had commented on the report of Sir Henry Burdett was an example to any board of guardians or other local authority which might be similarly attacked. With respect to Sir Henry Burdett's report there was, of course, a substratum of truth in it and honest purpose. The basis of the whole matter was that they had at Brownlow Hill a comparatively small area of ground, a very large number of persons, and buildings to a great extent very old. Sir Henry Burdett probably did not know—at any rate he did not make any references to the fact—that the select vestry had to consider the ratepayers and that they were saddled with antiquated buildings. He was probably unaware of the large sums which the select vestry had spent in recent years in producing buildings for the children and also hospital buildings, which would compare very favourably even with buildings erected at something like the enormous sums mentioned by Mr. Horrigan. They knew that he did not think highly of Brownlow Hill, but they knew also that he believed that the very best was being made of the old buildings there. Mr. Lowry said that he could not help thinking that Sir Henry Burdett's pen had led him astray in the matter of the maternity wards.

---

[1] See The Lancet articles on "Temperance Legislation in France," March 10th (p. 709) and 24th (p. 865), and April 7th (p. 995), 1906.

Liverpool School of Tropical Medicine: Colonial Office Assistance.

Representations having been made to the Colonial Office with regard to the necessity for expansion of the Liverpool School of Tropical Medicine, immediate steps have been taken, with the assistance of that Office, to start the following four new lines of research work—viz: (1) researches on malaria; (2) a detailed bibliography of malaria, the literature of which has grown so enormously during the last ten years (being in ten different languages) that it requires thorough classification; (3) researches on various points of parasitology; and (4) researches on pathological chemistry. In addition, the school is enlarging the staff of the Runcorn Research Laboratories and is continuing the work there.

Jan. 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Queen Victoria's Jubilee Institute for Nurses: Scottish Branch.

THE annual report of the Scottish Council of this organisation has just been printed. The report refers with much regret to the loss of several members of council during the year. The superintendent of the institute has been relieved of her duties in connexion with the training home as the national work has so increased that it requires her whole time. Miss Cowper, superintendent of the Scottish branch, has had the gold badge conferred upon her, and Miss Philp has been appointed superintendent of the training home with two district superintendents under her. The number of affiliated branches is now 207. Many of the affiliated branches have been asked by county authorities to allow theirnurses to assist the medical officer in the inspection of school children. Where possible this has been allowed, but the work is still in its infancy, and it is impossible to say what the future of it may be. The children requiring continued home attention would probably in any case become their patients. In Edinburgh and Leith during the year 5516 cases have been attended to by the nurses; of this number 544 died. As in former years, the greatest number of patients has been sent by medical men. Of the cases attended 1732 have been medical, 1146 surgical, 492 gynæcological, 1589 obstetrical. The report says that "the serious amount of unemployment unfortunately prevalent in the city has greatly aggravated the distress which sickness inevitably brings to a working-man's house. This is especially sad as affecting the class who are steady workers when employment is to be had. One regrettable result is that many mothers of families are now the chief breadwinners, and a great strain is thereby put on the health of women and children." This condition of things has added to the anxiety and difficulties of the nurses. With regard to finance, there is an excess of ordinary expenditure over ordinary income of £465. During the year 39 nurses have successfully passed through the six months' training in the home, and 38 of these have been engaged by local committees. The number of Queen's nurses on the Scottish roll is 323. During the year five new district nursing associations have been formed and affiliated to the institute.

Dermatology and the Scottish Curriculum.

With the conclusions of the leading article in THE LANCET of Jan. 1st dealing with dermatology in relation to medicine our teachers of dermatology can have no fault to find, but each of the four Scottish Universities has on its staff a lecturer in dermatology, and some of the statements made in the article do not apply north of the Tweed For at least 15 years the University of Edinburgh has required all candidates in the Final Examination to endeavour to diagnose three cases of skin disease, and over 10 years ago Dr. Allan Jamieson was appointed university lecturer on dermatology, and the class was placed on an equal footing as regards compulsory attendance with the classes of laryngology and diseases of children. According to the report of the University, just published, 180 persons graduated during the year, the students attending the class of dermatology during that period numbered over 100, excluding women who are taught separately. For over 20 years, until his retirement, Dr. Jamieson gave every Saturday morning demonstrations of cases to large numbers of students, and this practice is continued by his successor. You will see, then, that we in Edinburgh do, if anything, rather more than satisfactorily answer your question, "What, then, should be done?"

Notification and Treatment of Pulmonary Tuberculosis in Glasgow.

The corporation of Glasgow has notified all medical men in the city that for three years from Jan. 1st, 1910, phthisis has been placed on the list of notifiable diseases, and that medical practitioners and householders will have placed upon them a statutory duty of intimating to the medical officer of health all cases which may come to their knowledge. Notification, however, is but the first step in the campaign which the corporation are inaugurating against this disease, and what is practically a new branch of the public health service of the city has been formed to follow up notification by practical and medical measures. Acting under the medical officer there will be a special medical assistant who will investigate the causes of consumption in the city. Arrangements have also been made with the parish councils of Glasgow and Govan for consultation being held in the public dispensaries owned by these bodies. At each dispensary there will be in attendance a medical practitioner appointed by the corporation, who will make an examination of all cases presenting themselves and advise the patients as to treatment. In addition, there will be attached to each dispensary a trained nurse, who will visit selected cases in their own homes to see that the instructions of the medical advisers are being carried out. It is expected that notification will reveal the chief sources of infection, whether in the houses of the people or in connexion with their employment. The measures to be adopted will obviate interference with the individual worker already heavily handicapped by disease, but will indicate the various trades whose employees seem specially liable to the disease and in which sanitary improvement may be effected. Notification will also be valuable as a means of discovering insanitary conditions in association with the actual occurrence of the disease. In this direction there remains a great deal to be done towards the improvement of existing houses, quite apart from demolition schemes, and much good may result from a systematic appreciation of the powers already possessed by the corporation which provide for the opening up of concealed beds and for the ventilation and lighting of dark lobbies. In Glasgow alone, it may be mentioned, 1300 deaths occur from phthisis per annum. Of course, the efforts now to be put forth are largely in the nature of an experiment, but if the scheme meets with the support which it deserves, both from the medical profession and the general public, it is believed that it cannot fail to result in the saving of valuable human lives and in supplying data on which to base further schemes of advancement and reform.

Medical Staffing of Dundee East Poorhouse Hospital.

Dundee parish council at its last meeting declined to approve of a recommendation by the poorhouse committee that two resident medical officers should be appointed for the East Poorhouse and Hospital at salaries of £120 and £100 respectively. The matter was remitted back to the committee with powers for further consideration.

Peterhead Board and Medical Inspection of School Children.

At a meeting of the burgh board last week the chairman submitted the scheme for the medical inspection of school children as revised by the county committee, and moved that the board accept the scheme. A motion to set aside this scheme was, however, carried, it being pointed out that the scheme was practically the same as the old one, except that there were to be a larger number of officials and that nurses were not to be insisted on. The clerk was instructed to write the secretary of the county committee with a view to have a local system instituted.

Jan. 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Hospitals Tuberculosis Committee.

Dr. J. T. Daniel has presented a report to this committee in which he states that during the last three months he has made 36 visits to patients' homes and has treated 25 at his own house, besides seeing to the disinfection of the homes of three patients who had died. The report of the work done by the two tuberculosis district nurses in Dublin during nine months showed a total of 4939 visits paid to 297 cases, an admirable record of industry, which has been commended by the secretary of the Queen Victoria's Jubilee Institute of Nurses in a letter to Sir William Thompson, honorary secretary of the Tuberculosis Committee.

Fees of Medical Witnesses.

Dr. P. J. Macnamara of Kilmallock discusses the payment, or rather the *non*-payment, of the fees of substitutes in those cases in which medical officers are subpœnaed to appear as witnesses in civil cases. In a communication to the *Journal of the Irish Medical Association* he gives striking personal experiences in illustration of "the present intolerable position in which medical witnesses are placed owing to the action of the Local Government Board, who, while recognising the receipt of a Crown summons as a cause of legal incapacity, refuse to place a civil subpœna on a similar footing. In the old days both summonses were regarded by boards of guardians as creating a temporary incapacity, and substitutes were invariably paid." Still, he admits that (in case of the legal fee) even in those good old times, a doubt or difficulty about the payment of the medical witness was much more likely to arise when summoned at the civil side than in case of a Crown summons. In one of his own experiences he was obliged to take legal proceedings which resulted in the realisation by seizure and sale of a large rick of hay. Dr. Macnamara then subjoins the significant comment: "Imagine a country practitioner in troubled times being driven to such extreme measures!" The following is an example. A medical witness received "the usual viaticum of £1" for a day's attendance at a court situated at a distance of 20 miles. The board of guardians refused at first to pay the substitute; but as that position could not be maintained, they resolved to deduct the amount from their medical officer's salary! An appeal to the Local Government Board was met by the equally considerate concession that "if the guardians were good enough favourably to consider the matter and not deduct the amount from his salary they would not object." All practitioners must, I think, agree with Dr. Macnamara that the position is an intolerable one. He suggests two modes of escape. The first is take no notice of the subpœna, if the fee of the practitioner and of his locum-tenent be not paid therewith, the liabilities incurred being "contempt of court," or action for damages on the part of the litigant. The second is to attend court and to make a respectful appeal to the judge on being called. "Should the judge refuse to make an order for the necessary fees then steadfastly refuse to be sworn." Dr. Macnamara states: "I am no longer young, but I am fixed in my determination to adopt the latter course should occasion require. Imprisonment for contempt of court is no disgrace."

Marked Improvement in the Health of Belfast.

The report on health presented to the monthly meeting of the Belfast city council on Jan. 3rd showed that between Nov. 21st and Dec. 18th, 1909, there were notified two cases of enteric fever, 59 of scarlet fever, 3 of simple continued fever, 15 of diphtheria, 2 of membranous croup, 35 of erysipelas, and 79 of pulmonary tuberculosis. There were 41 deaths from zymotic disease (a rate of 1·5), 59 from phthisis, 114 from diseases of respiratory organs (exclusive of pneumonia), and 50 from pneumonia. The death-rate from all causes was 23·9. The death-rate both from chest diseases and zymotic affections keeps high. The following tables are interesting as showing that there is an improvement in the public health of Belfast:—

Table Showing the Number of Cases of Infectious Diseases Notified during the Year 1909 (as Calculated on the Number Notified During the 50 Weeks ended Dec. 18th, 1909), as Compared with 1906–7–8.

Year.	Typhus fever.	Typhoid fever.	Scarlet fever.	Simple fever.	Puerperal fever.	Small-pox.	Diphtheria.	Membranous croup.	Erysipelas.	Total.
1909	6	109	333	46	23	—	196	8	251	972
1908	19	274	323	208	22	—	221	27	294	1388
1907	—	356	531	270	29	1	257	37	341	1822
1906	9	551	1193	366	17	—	233	40	340	2749

Table showing the Number of Deaths and the Average Annual Death-rate per 1000 of the Population from all causes, Zymotic Diseases, Typhoid Fever, and Phthisis, during the Year 1909 (as calculated on the Number of Deaths Registered during the 50 weeks ended Dec. 18th, 1909), as compared with 1906–7–8:—

Year.	All causes		Zymotic diseases.		Typhoid fever.		Phthisis.	
	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.
1909	6959	18·0	504	1·3	21	0·05	812	2·1
1908	7523	19·5	689	1·8	57	0·15	880	2·3
1907	7870	21·3	615	1·7	82	0·22	926	2·5
1906	7379	20·1	905	2·5	90	0·24	1015	2·7

This table shows a reduction in the general death-rate, in the zymotic rate, in that from typhoid (which formerly was the highest of the large cities in the United Kingdom), and from phthisis. Infantile mortality was 135 per 1000 births, while in 1901 it was 154, in 1905 it was 136, and 147 in 1908.

Gas-poisoning in Belfast.

For some time past great anxiety has prevailed in Belfast in reference to the quality of the gas, which is a mixture of coal and "water" gas. Before Christmas two deaths occurred from it, and on Jan. 7th another took place, the victim being an alderman of the city corporation, Mr. John Rooney, who was found dead in his bed, with a strong smell of gas in the room, the leakage being caused by some fusing between an electric-light wire and the gas-pipe. At the inquest on Jan. 8th the coroner (Dr. James Graham) said it was his intention to have an inquiry into the whole circumstances of the case, and in the meantime he had instructed two experts, one to make an examination of a dog of the deceased found dead under the bed and the other to tell the exact composition of the gas. They had such a number of these gas-poisoning cases in Belfast that he thought it was his duty, as well as that of the jurors, to investigate the case, with a view of seeing if anything could be done to prevent gas-poisoning in their city. From evidence given at the inquest, which has been adjourned to Jan. 13th for the presence of the experts, it appears that a gas-pipe ran from one side of the room to the other (where the deceased lay down for an afternoon nap), and parallel with it, at about a distance of 4 inches, was an electrical wire covered with metal sheeting. From the gas-pipe a branch led to a gas-jet, which was burning. The electrical wire went over that branch, touching, or almost touching, it. At the point of contact there was a hole in the gas-pipe, which was actually melted away about 3 inches. The under side of the flooring was scorched. What the public of Belfast demand to know is: (1) how much percentage of carbon monoxide there is in this gas, so as to see whether or not it exceeds the amount allowed by statute; and (2) why it is that the combination of gas-pipes and electric-light wires has of late led to so much serious trouble. There is great uneasiness on the whole question in the city of Belfast, and it is hoped that this deplorable accident, by which a prominent citizen has lost his life, will tend to remove it by clearing up many debateable points.

Jan. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Action of the Bile on the Putrefaction Toxins of the Intestine.

M. Roger considers that although the bile possesses no antiseptic properties it is nevertheless capable of acting on the putrefaction toxins of the intestine. Two flasks, of which one contained pure bouillon, while the other contained bouillon with the addition of a fifth part of bile, were incubated after inoculation with human fæces. Microbial growth was rapid and abundant in both flasks, but in the one containing bile the odour was less marked than in the other. When intravenous injections from each flask were given to rabbits it was found that on an average the fatal dose from the flask containing pure bouillon was 4 cubic centimetres per kilogramme of the animal's weight, whilst the fatal dose from the flask containing an admixture of bile was from 12 to 33 cubic centimetres per kilogramme—i.e., from three to eight times as much. The bile acts not by neutralising toxins that have been formed but by hindering their formation. If a culture which has been grown in pure bouillon receives an admixture of bile its toxicity is not diminished but increased, because the deleterious action of the bile is added to that of the microbial poison. The anti-putrescent constituents of the bile resist boiling and are soluble in alcohol, the cholesterine being apparently inactive. These experiments supply an explanation of certain constitutional symptoms in the cases in which the discharge of bile into the intestine is interrupted.

State Relief in Old Age and Sickness.

The General Council of the Seine has recently approved a report on the systematic relief of persons suffering from old age or infirmity, including incurable conditions. A grant of 15,582,000 francs has been sanctioned for the relief of such persons domiciled in the communal area of Paris, their number being estimated at 49,000 for the year 1910. Similarly for those who are domiciled not in the communal area but outside it, in the banlieu, a grant of 1,000,000 francs has been sanctioned to be disbursed in 7343 monthly payments.

Bread-making by Machinery.

The Council of Hygiene has had under consideration the question of the use of machinery for kneading bakers' dough. The subject came before the Council in consequence of a formal expression of opinion to the effect that the danger of infection from the use of bread made in the ordinary way by tuberculous bakers had been proved, and that it would, therefore, be an act of kindness to warn the public against this danger and to make it known that the best possible precaution was the use of bread which had been kneaded by machinery. The Prefect of the Seine thereupon commissioned Professor Laveran to advise the council as to the reality of the alleged danger and as to the measures which it might be desirable to take. Professor Laveran first set himself the task of determining whether the danger really existed and whether bacilli introduced into the dough by a working baker suffering from manifest tuberculosis remained virulent after the dough had been baked. His experiments proved that the temperature of 100° C., which was always reached even in the centre of a properly baked loaf, was quite sufficient to kill the bacilli of tubercle; the ordinary acidity of the dough was also favourable to the destruction of these organisms. It must not, however, be concluded from this that the employment of tuberculous persons in bakehouses was without danger and that no action need be taken. The tubercle bacilli killed by the process of baking were incapable of producing tuberculosis in the consumer, but they were not therefore absolutely harmless, as they might produce irritation and local inflammation of the intestinal mucous membrane. Moreover, the bread after coming out of the oven might be soiled by handling or by contact with dust infected with tuberculous sputum which had dried on the floor. Professor Laveran then pointed out that the hand kneading of bread, in addition to being an unappetising spectacle for the beholder, was also very laborious for the baker. He therefore strongly recommended that kneading machines should be introduced for the purpose of preventing the contamination of bread by tuberculous workmen, and in the next place that the attention of bakers' associations and master bakers should be drawn to the danger resulting from the employment of tuberculous persons in bakehouses and to the necessity of taking proper precautions. He also said that there ought to be an active sanitary inspection of bakehouses; that the machine kneading of dough, which from the hygienic point of view was very superior to hand kneading, produced excellent bread; and that for this reason it was desirable that machine kneading should replace the old method as soon as possible. Professor Laveran thought that the courses of instruction established by the syndicate of Paris bakers deserved every encouragement; that more promptness should be shown in extending the public supply of electric power; that the administrative formalities in connexion with its introduction into bakehouses should be simplified; and that the minimum charge for electric current should be reduced.

Monument to Dr. Péan.

A monument to Dr. Péan, the celebrated Paris surgeon, was unveiled last month in presence of the President of the Republic. It stands in the Boulevard de Port Royal, not far from the hospital which was built at Dr. Péan's expense, and has taken its name of Hôpital Péan from him. The company were received at the hospital by the director, who is a son-in-law of Dr. Péan, the whole of the staff being present. The President of the municipal council, after having acknowledged the reception of the monument, delivered a eulogy on Dr. Péan. Succeeding speakers were the Prefect of the Seine, Dr. Pozzi, and Dr. Brochin, the oldest of Dr. Péan's assistants. The proceedings terminated with a discourse by Dr. Delaunay, surgeon to the hospital, who said that although Dr. Péan had irreconcilable enemies he also had admirers and warmly-attached friends.

Jan. 10th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Statistics of the Medical Profession in Germany.

ACCORDING to the Medical Directory, edited by Professor Schwalbe and quoted in the *Deutsche Medizinische Wochenschrift* by Dr. Prinzing, there are 31,969 medical men in Germany. As the population is 63,886,000 there are therefore about 5 medical men for each 10,000 inhabitants, the respective proportional numbers for each of the eight years from 1901 to 1908 being 4·92, 5·0, 5·06, 5·06, 5·08, 5·06, 5·06, and 5·02. The gradual decrease which commenced four years ago has accordingly been continued in 1909. Comparing other countries with Germany the report states that in England there are 7·1 medical men for each 10,000 inhabitants, in Scotland 7·9, in Ireland 6·0, in France 4·9, in Italy 6·3, in Austria 4·1, in Denmark 5·2, in Norway 4·5, in Sweden, 2·4, and in Russia 1·8. England and Scotland have thus by far the largest proportion of medical men, a fact which Dr. Prinzing attributes to the preponderance in those countries of towns where, of course, medical aid is more in request than in country places. In Germany a considerable increase of the profession may be expected within the next few years, as the number of medical students, which was 6032 in 1905, rose to 9239 in 1909. It is true that this number includes more than 1000 foreigners who will eventually settle abroad, but the number of qualifications granted already begins to rise after having shown a considerable decrease. During the last four years the qualifications granted were 726 in 1905, 845 in 1906, 553 in 1907, and 827 in 1908. The distribution of medical men in the several states of the empire showed that there were 19,319 in Prussia, 3570 in Bavaria, 2294 in Saxony, 1061 in Würtemberg, 1272 in Baden, 745 in Hesse, 362 in Mecklenburg, 753 in Hamburg, and 917 in Alsace-Lorraine, the remainder residing in the smaller states. Comparing these numbers with those of the previous year it becomes obvious that in the eastern parts of the empire, where the population is mainly rural, there is a slight decrease, but in the western and southern parts a slight increase has occurred. The increase of the profession is seen specially in the towns of over 10,000 inhabitants—the number of medical men residing in such towns being 11,934 in 1906, 12,232 in 1907, 12,632 in 1908, and 12,932 in 1909, as compared with 18,997, 19,184, 19,008, and 19,037 respectively for the smaller towns and country districts. Of the larger towns, with populations of more than 10,000, Wiesbaden has far the greatest proportion of medical men—namely, 22·9 for each 10,000 inhabitants. This is due to the character of Wiesbaden as a watering-place and health resort. Next comes Munich with 16·2 medical men for each 10,000 inhabitants. For Strasburg, where there is a university in addition to a large garrison with many army medical officers, the corresponding proportion is 14·6. The same is the case for Kiel with 12·6 medical men for each 10,000 inhabitants. Berlin is in the fifth place with 12·4 per 10,000 inhabitants. For some other towns the proportions are 12·3 in Frankfort, 11·5 in Halle, 11·0 in Königsberg and Hanover, 9·7 in Dresden, 8·0 in Hamburg, and 7·7 in Nuremberg. It is remarkable that of the larger towns several have a very small proportion of medical men per 10,000 inhabitants, the figures being 5·1 in Barmen and Bochum, 4·8 in Essen, 4·7 in Plauen, 3·9 in Gelsenkirchen, and only 3 in Duisburg. These large towns, which are, comparatively speaking, little known to countries remote from Germany, have an essentially working-class population, and as the people for the greater part belong to sick clubs there are few openings for independent practitioners. Another remarkable fact is that 356 towns and villages which formerly had a resident medical man are now without one, and some have even been without one for four years or longer. In the beginning of the century the rapid overcrowding of the profession induced many medical men to settle in places where formerly no practitioner had resided, but on discovering that they were unable to make a livelihood there they went elsewhere, and no one took their place. The number of duly qualified medical women has risen from 55 to 69, of whom a great many reside in Berlin. The report deals also with the question of specialists, which is a subject of perpetual discussion in German medical circles, their number having increased in an astonishing degree. Fortunately, however, there is now a slight diminution. In the 39 larger towns 4004 specialists were registered in 1906, 4375 in 1908, and 4441 in 1909, being 3·37, 3·44, and 3·43 respectively for each 10,000 of the population, or 33·6, 34·6, and 34·3 for each 100 medical men. The record is held by Frankfort, where 42·6 per cent. of the medical men were specialists, as compared with 18·4 per cent. in Kiel. Far the greatest number of specialists—namely, 711—practised as gynæcologists, 492 devoted themselves to diseases of the eyes, and 463 to diseases of the larynx, the nose, and the ear. The Federal Council has lately decided to make a statistical classification of the medical profession, giving a variety of details in reference to specialists.

Jan. 10th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Lunacy among Jews.

Dr. K. Kenéz, superintendent of the County Lunatic Asylum at Bihar, has submitted his annual report, which contains interesting statistics regarding the alarming increase of insanity among the Jews of the country. The superintendent says that "never before in the history of the insane in this country have so many Jews been adjudged insane. The figures show unmistakable evidence of increase in insanity and mental degeneracy in the Jewish race. It would take too long a description to attempt to explain all the causes to which the increase of insanity in the Jewish population may be due. The patients we get do not seem to owe their mental downfall to excessive brain work, but rather to physical conditions and degeneracy, to which their unhygienic methods of living naturally lead. Hereditary influences, too, are gradually asserting themselves as a not insignificant factor in producing additional physical and mental defects in the race." The number of Jewish patients sent to the hospital during the year was 60 more than in the previous year, showing an increase of 34 per cent. The total number of patients in the asylum was 1394, or 49 greater than the year before. The smallest number under care at any one time was 398 and the largest was 437.

Typhoid Bacilli in the Gall-bladder.

The great importance of the gall-bladder as a storehouse for germs of the typhoid group is pointed out by Dr. M. Gross in the *Orvosok Lapja* of Dec. 23rd, 1909. He says that many individuals who have come into contact with patients suffering from typhoid fever but are not themselves ill harbour virulent typhoid germs in their system, and are thus a menace to their surroundings. He found the bile altered in all cases of typhoid fever that came to necropsy, and typhoid bacilli were present even where the lower portions of the intestinal tract were free. It is reasonable to suppose that in many cases of typhoid fever the bacilli in the fæces are really derived from the gall-bladder. When typhoid bacilli were injected directly into the blood of rabbits (as was first observed by Forster in Germany) the germs could be found in the bile after six weeks, at a time when they had already disappeared from the blood and urine. They were also found in the upper duodenum, but not in the lower intestines. Even where the bile was sterile cultures could be obtained if pieces of the wall of the gall-bladder were incubated in an appropriate medium. The paratyphoid germs behaved in every way similar to the typhoid germs. The bacilli sometimes persisted very long after the termination of the disease. In one case the gall-bladder even continued to be infected for 20 years. There was very little that could be done under such circumstances, since neither the bile nor the intestinal contents admitted of sterilisation during life. The best course was to make repeated bacteriological examinations of the fæces in suspicious cases and to operate whenever a catarrh or the formation of a calculus seemed to be probable.

Diagnosis of Early Tubal Pregnancy.

At a recent meeting of the Nagyvárad Medical Society Dr. M. Konrad read a paper on the diagnosis of early tubal pregnancy. He said that during the last ten years he had operated in 14 cases of tubal pregnancy—namely, on ten after rupture and on four before rupture. Abdominal section was performed in all the cases in which rupture had not occurred. Among the ten patients in whom rupture had taken place the operation was suprapubic in seven cases and vaginal in three cases. All the patients recovered. All had demonstrable lesions sufficient to account for the arrest of the fecundated ovum in the tube. The results of gonorrhœal infection and minor post-puerperal lesions were most frequently noted as etiological factors. Early diagnosis and prompt operation were necessary in all cases. In the vast majority of cases a diagnosis could be made before rupture and the mortality would then be no higher than operations for appendicitis performed during a quiescent interval. In Dr. Konrad's cases almost all the patients had been seen by one or more medical practitioners before rupture occurred.

Jan. 10th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Conference on the Prevention of Infant Mortality.

THE American Association for Study and Prevention of Infant Mortality was organised at a special meeting held at Yale University, New Haven, on Nov. 13th, 1909. The session was opened with an address by President Hadley, who spoke earnestly on the question of adequate means of protecting the children from the preventable diseases which create such an enormous mortality among infants. The discussion of subjects had a wide range and elicited a large amount of valuable and practical information in regard to the prevalence of contagious and infectious diseases in the cities represented which cause the largest percentage of infant mortality. The first session was devoted to the medical prevention of infant mortality, the second session was occupied with the philanthropic prevention of infant mortality, the third session discussed institutional prevention of infantile diseases, and the last session considered the educational questions to which the association must devote its resources.

Health of the United States Army and Navy.

The annual reports of the Surgeons-General of these branches of public service present some features of general interest. The health of the army force was unusually good. The constantly non-effective rate for the enlisted strength was 42·68 per 1000, as compared with 46·17 for 1907 and 49·79 for 1906. The highest death-rates were from tuberculosis, pneumonia, and typhoid fever. The antityphoid vaccination test in the hospital corps has been found so successful that the Surgeon-General recommends the extension of the vaccination to include volunteers from all organisations to be detailed for duty outside of the United States and among troops to be ordered for special practice or manœuvres. The general health of the naval force has shown improvement. The ratio of admissions and readmissions per 1000 of the strength for the year was 611, as against 630 for 1908 and 649 for the decade from 1897 to 1906. The cigarette-tobacco bag is suggested as possibly playing an important part in the transmission of mumps, as the invariable habit of those who use tobacco in this form is to close the sack by pulling the puckering string with the teeth, and thus the user of the sack may infect himself by applying his mouth to the saliva-soaked bag.

A Public Health Bureau.

The agitation which has been in progress several years for the establishment of a Department of Health in the Federal Government, with a Secretary of Health having a seat in the President's Cabinet, has taken form in the President's message to Congress. He states that a movement has been gathering strength, especially among the members of the medical profession, in favour of a concentration of the instruments of the national Government which have to do with the promotion of the public health. In the nature of things the Medical Department of the Army and also of the Navy must be kept separate. But there seems to be no reason why all of the other bureaus and offices in the general Government which have to do with the public health or subjects akin thereto should not be united in a bureau to be called the "Bureau of Public Health." While the position of the President in favour of a bureau instead of a "department" of public health will disappoint the "Committee of One Hundred," which has aimed to secure the latter rather than the former organisation, there is no doubt that the President has pointed out the wiser course of procedure because more practicable. There is a very strong prejudice in Congress against the creation of new cabinet officials by organising new "departments" in the general Government. And this is especially true of a "department" that in any wise might encroach upon what is recognised as "State rights," as a Department of Health would be liable to do in the management of quarantines and in its efforts to control the progress of epidemics. A bureau in the Treasury Department like that of the existing "Public Health and Marine Hospital Service" excites no opposition but on the contrary has become popular. It is apparent that the final outcome of the agitation will be the consolidation of all of the affiliated branches of the Government service, now scattered through the departments, into one well-organised and equipped public health service.

The White Slave Traffic in New York.

Intense public interest has been aroused by recent revelations of the traffic now carried on between the country and European States in the importation of young women for immoral purposes. The subject has assumed sufficient importance to be brought to the attention of Congress by the President. For the past two years the Immigration Commission has been investigating this traffic, and though its report has been made, it has not been issued, and only some of the more important facts have been made public. The so-called "white slave traffic" is carried on by "dive-keepers" and "procurers," who work together with similar agencies abroad at places of embarkation of emigrants and on board of the steamships. Innocent women form only a small percentage of the number entrapped, but procurers are on the watch everywhere to decoy unattended women immigrants. At the great immigrant dêpot in New York these procurers find the best field for their occupation, and the commissioner has been active in his efforts to protect the unattended women immigrants, but under the present laws he has been unable to do preventive work at all adequate to the needs of immigrants. It is proposed to secure the passage of a law by Congress which will enable the Government to place special agents abroad and on steamers, and special matrons at every port of entry, obtain full names and other information of all women landing, power to hold any woman and investigate her destination and family, and the imposition of heavy fines for transporting persons from one State to another for purposes of prostitution.

Jan. 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Dec. 4th show 4013 deaths, compared with 3734 in the preceding week. The Bombay Presidency reported 677; Madras, 77; Bengal, 115; the United Provinces, 1435; the Punjab, 731; Burma, 41; the Central Provinces, 431; Mysore State, 115; Central India, 136; Rajputana, 248. A report on the investigation recently carried on in the Central Provinces into the question whether plague persists in rats during the period of abatement of human plague has been issued. Captain G. Fowler, I.M.S., began work at Akola on May 27th, and ceased on August 14th, 1909. He selected the village of Somthana as his control. It lies four miles from Akola. During his investigation he examined 5888 rats, of which 5696 were trapped in Akola and 192 in Somthana. None of the rats examined presented any of the microscopic appearances of plague infection. At Akot Hospital, Assistant Aloni examined 2103 rats, and at Telhara Hospital Assistant Ashraf Ali examined 28. In neither place did any rat show evidence of plague. The smallness of the work done at Telhara showed on inquiry that Telhara was practically rat free. The total expenditure in the Akola district at the three places named was Rs.2822. It may be concluded from this investigation that the four places in which the examination was carried on are not foci in which plague exists or persists in rats during the period of abatement of the disease in man. It may be mentioned that while investigations were being carried on by Captain Fowler plague broke out at a village named Ghusar, some six miles from Akola, and four rats which had died there were sent in and were examined by him. He found that all of them gave undoubted microscopic evidence of plague, which was confirmed microscopically by smears from the spleen and from the heart's blood, these showing large numbers of the characteristic bacilli. Plague had been present in this village from Feb. 22nd, 1907, until April 11th, 1907, with 99 attacks and 57 deaths, but not subsequently.

Malaria at Bombay City.

The corporation of Bombay has decided to carry out, in coöperation with the landowners concerned, a most useful improvement on Malabar Hill. For long the marshy ravine on the western slope of the hill has lain under the well-founded suspicion of being the prime cause of the malaria which obstinately clings to several houses in the vicinity of Nepean-road. The ravine is fed by leakage from the Malabar

Hill reservoir, and the water collecting in pools and swamps affords breeding-places for mosquitoes. Now the ravine is to be thoroughly drained by an open V-shaped drain, and the water is to be carried direct to the sea. This is an improvement out of all proportion to the cost; the wonder is that it was not carried out years before. It should go a long way towards rendering healthy a notoriously unhealthy locality. Whilst this matter is under consideration, it is suggested that inquiry be made into the hygienic condition of the foreshore between Sir Dinshah Petit's bungalow and Meher Hall. There is a quantity of undergrowth there which would be much better cut down, and there are more stagnant pools than are desirable in a residential locality.

St. John Ambulance Association.

Considerable activity is being shown in the United Provinces in the matter of St. John Ambulance Association work. The aim and object of the association are well known. A centre has been in existence in these Provinces for five years, and a special effort is now being made to add considerably to its efficiency. At the desire of His Honour the Lieutenant-Governor, who is the patron of the association, a strong committee has been formed, and classes and examinations are being arranged. This activity is not confined to Allahabad. It is hoped that in each district a centre will be formed for Europeans and Indians. Besides this there are, or will be, about 48 police classes working under the authority of the United Provinces Central Committee at Allahabad. The Hon. Sir John Stanley is President of the United Provinces centre and is taking an active part in the work. All information as to membership, classes, &c., may be obtained from Mr. W. P. S. Milsted, Honorary Secretary, St. John Ambulance Association, Allahabad. The following is the composition of the United Provinces centre:—Patron: H.H. the Lieutenant-Governor of the United Provinces. President: The Hon. Sir John Stanley, K.C. Vice-Presidents: Sir G. Knox and the Hon. A. R. McRoberts. Treasurer: Mr. G. J. M. Hamilton. Secretary: Mr. W. P. S. Milsted. Committee: The Commissioner of Allahabad, the Hon. Mr. Justice Karamat Husain, the Collector, the Civil Surgeon, Rev. W. S. Holland, Mr. F. Luker, Mr. H. R. Warner, Lady Knox, the medical officer of the Dufferin Hospital, Dr. S. C. Banerji, Dr. Ranjit Singh, the Assistant to the Civil Surgeon, Mr. A. C. Mumford, I.C.S., and Syed Muhammad Zamin.

Prevention of Enteric Fever.

With a view to protect young soldiers arriving in India from the many dangers to health (more especially enteric fever) to which they are susceptible whilst travelling to their destinations after disembarkation, the Government of India has sanctioned as a permanent measure the deputation of responsible non-commissioned officers, with some Indian experience, to meet and accompany to their destinations drafts of young soldiers arriving from the United Kingdom and elsewhere, unaccompanied by non-commissioned officers with previous Indian experience. The measure has proved successful during the past few trooping seasons during which it has been on trial.

Dec. 11th, 1909.

THE death occurred on Monday night last, from acute tuberculosis, of Mr. Septimus J. Lee, L.R.C.P. Lond., M.R.C.S. Eng., of Brampton, Cumberland, in the Hospital for Epilepsy and Paralysis, Maida Vale, W., of which he had been resident medical officer since April, 1909. Educated at Edinburgh and Middlesex Hospital, the late Mr. Lee was appointed to the Hospital for Epilepsy and Paralysis as soon as he had qualified, and a promising career has been terminated by his untimely death whilst engaged in the hospital's service.

THE HEALTH OF GLOUCESTER.—The medical officer of health of Gloucester (Dr. J. R. Bibby) in his annual report for 1909 states that during the year the birth-rate was 22·53, the average rate for the previous ten years being 27·6. The death-rate was 13·9, compared with an average of 14·6 for the preceding ten years. The infantile death-rate was 96·3, as against an average of 121·6 for the previous ten years. Dr. Bibby considers that the reduced infantile death-rate is largely due to the increased efforts of the sanitary department and to the instructions given to mothers as to the feeding and clothing of children.

Obituary.

THOMAS DIXON SAVILL, M.D. LOND., M.R.C.P. LOND., D.P.H. CAMB.,

PHYSICIAN TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

WE deeply regret to learn of the death of Dr. Thomas Dixon Savill, which occurred at Algiers on Monday, Jan. 10th, as the result of a fall from his horse and a fracture of the skull.

Thomas Dixon Savill, whose valuable scientific career has thus been cut off at the early age of 53, was the only son of Mr. T. C. Savill, whose family were for many years closely connected with the fortunes of THE LANCET, being the proprietors of the printing and publishing firm by which for some time THE LANCET was produced. He was educated at that admirable old school, the Stockwell Grammar School, and entered St. Thomas's Hospital with a natural science scholarship. He became also William Tite scholar at the school, and took many prizes in different subjects of the medical curriculum. In 1881 he graduated in honours in medicine in the University of London, taking the M.D. degree in the following year, and later the Membership of the Royal College of Physicians of London. Having studied also at St. Mary's Hospital, at the Salpêtrière in Paris, in Hamburg, and in Vienna, he was recognised at the outset of his career as a thoroughly well-equipped young physician, and one who might be depended upon to go far. He was quickly appointed registrar, pathologist, and assistant physician to the West London Hospital, and showed his disposition towards the study of neurology by translating Professor Charcot's lectures on Diseases of the Nervous System, these being the demonstrations many of which he himself had heard. In 1885 he was appointed medical superintendent of the Paddington Infirmary when it first opened, and the results of his work at this infirmary were to give him a very intimate knowledge of the working of the Poor-law hospitals, while as president of the Superintendents' Society he became an authority on many of the questions so freely ventilated, though not always answered, in the recent Majority and Minority Reports of the Poor-law Commission. In communications both to our columns and elsewhere Savill always took up a very judicious attitude on the relations between the public and the medical profession in these matters, while he was particularly anxious to bring before his colleagues the now generally accepted view that clinical investigation has in the Poor-law infirmaries of the country a rich but nearly unworked field. It was largely due to his experience at the Paddington Infirmary that he was able later on to write a complete "System of Clinical Medicine" from almost a personal point of view, an achievement which marked him, even among those who disagreed with some of his theories and deductions, as a man of great originality and knowledge.

In 1892 he decided to give up an institutional career and to become a consultant physician that he might give full play to a personal bias towards neurological work, but some early papers in THE LANCET on dermatological subjects, together with the fact that he held an appointment at the St. John's Hospital for Diseases of the Skin, led to his being best known at the beginning of his career as an authority on cutaneous disease. A series of clinical lectures on neurasthenia appeared as a book in 1899, and in the course of 10 years went through four editions. This book showed Savill to be an original thinker and to have a gift for clear exposition of his views. He broke away from the tendency to separate off special symptomatic varieties of the disease, such as cardiac, gastric, or pulmonary, and devoted his main thesis to the discussion of its essential nature, suggesting an etiological classification which is in some ways more satisfactory than any that has yet been advanced. In fact, the treatise substantially increased our knowledge of a difficult and important subject, and gained due recognition amongst neurologists outside our own country. More recently, having been appointed physician to the West-End Hospital for Diseases of the Nervous System, he turned his attention to the special study of the other great functional neuroses, and his Lectures on

Hysteria and the Allied Vaso-motor Conditions were so recently published in book form and reviewed in our columns[1] that we need not refer further to them. Suffice it to say that we took the view that although Dr. Savill had adduced a wealth of clinical material to support his contention of the essentially vascular origin of hysterical manifestations, yet his theory was too "cut-and-dried" to explain adequately the multifarious phenomena of that disorder. There was, however, much worthy of study in the book, and the chapter on treatment showed a resourceful mind full of excellent suggestions.

Dr. Savill was examiner in medicine at the University of Glasgow and at the Society of Apothecaries in London, and was one of the medical officers to the Royal Commission on Vaccination from 1891 to 1894. In 1902 he issued the "System of Clinical Medicine," to which we have already referred. It is undoubtedly his most important contribution to medicine, and its success has been proved by the recent issue of a new edition. We gave it a warm welcome because it really did provide a text-book of medicine based on the lines of the clinical teacher. Briefly, the arrangement of the book is symptomatological. It discusses seriatim each of the chief systems of the body, and under each section the prominent symptoms which point to disease in any particular system are described in groups, all the possible causes of these symptoms and their differential diagnosis being next given. This is, after all, the way that a case has to be approached in actual practice. The last part of the section deals with the separate diseases, giving a brief description of each, chiefly from the clinical standpoint. The result has been to provide a book of great value to those who are already grounded in their medicine, although it would be undoubtedly an advantage for a student to know the rudiments of the individual diseases before reading it. Equipped with that knowledge, he must find the book an excellent means of coördinating his ideas, helping to remind him that the "separate entity" conception of diseases is often misleading. A section over which Dr. Savill took special pains was that dealing with arterial diseases, as he had worked for many years on the subject, and when he was still at Paddington had described the condition of the media to which he gave the name of arterial hypermyotrophy. We believe that this book, if it is kept adequately revised, will take its place amongst the standard text-books of English medicine. Dr. F. S. Langmead, it should be said, was associated with the author in the preparation of the recent edition.

It will be seen from this brief sketch of Dr. Savill's career that he was an exceptionally endowed man, a specialist in more than one direction, but with the broadest possible foundation of general medicine whereon to rely for his rules of classification and his appreciation of the comparative importance of symptoms. He was a man of great literary ability, and in addition to the work more specially alluded to he was for many years a regular correspondent of THE LANCET, summarising for us the scientific debates at the more important medical societies as well as contributing a great number of articles, chiefly on diseases of the nervous system, diseases of the skin, and diseases of the arteries. Among these contributions may be mentioned A Further Contribution on an Epidemic Skin Disease, THE LANCET, Sept. 29th, 1894; Therapeutics of Saline Laxative Mineral Waters, THE LANCET, Nov. 23rd, 1895; On the Use of Alcoholic Beverages in Rheumatic and Gouty Conditions, THE LANCET, August 14th, 1897; The Pathology of Itching, THE LANCET, August 1st, 1896; Acroparæsthesia and other Vasomotor Disorders, THE LANCET, June 1st, 1901; The Pathology of Hysteria, THE LANCET, July 20th, 1901; The Treatment of Hysteria, THE LANCET, June 22nd, 1907; Senile Epilepsy, THE LANCET, July 17th, 1909; and Psychology and Psychogenesis of Hysteria, Feb. 13th, 1909. This list of contributions shows Savill's industry, as well as the particular range of his interests, but the general knowledge displayed in the "System of Clinical Medicine" lay behind all these special contributions.

In 1901 Dr. Savill married Dr. Agnes Forbes Blackadder, who is at present assistant physician to the St. John's Hospital for Diseases of the Skin, and who was closely associated with his labours. To this lady Dr. Savill has acknowledged his great indebtedness in the production of his text-book of medicine. We offer her our very sincere sympathy on the tragic loss which she has sustained.

At a meeting of the medical staff of St. John's Hospital for Diseases of the Skin, held in the board room at the out-patient department, Leicester-square, Dr. Morgan Dockrell, in moving the adjournment of the meeting, referred in sympathetic terms to the sad death of their late colleague, Dr. Thomas D. Savill, who had been attached to the hospital for the past 15 years. He had done good and valuable work and was very thorough in all that he undertook. He excelled as a clinician and a teacher, and he devoted himself with untiring zeal to the needs of the patients under his care. Dr. M. K. Hargreaves seconded the motion, and the meeting was adjourned to a future date. A vote of condolence was also passed and great sympathy expressed for Dr. Agnes Savill, who is a member of the staff, in the sudden bereavement which has befallen her.

JOHN HOLMES JOY, M.A., M.D. DUB.

A PROMINENT practitioner of the Midlands has died at Tamworth, Staffordshire, in the person of Dr. John Holmes Joy, who passed away on Jan. 4th at his residence in that town. He was born in Dublin in 1842 and was the youngest son of the late Henry Holmes Joy, Q.C., LL.D., of Dublin and Belfast, a famous Irish lawyer, grandson of the late Serjeant Ludlow, recorder of Bristol, and grand-nephew of Chief Baron Joy of the Court of Exchequer in Ireland. He was educated at Trinity College, Dublin, and graduated M.A., M.D., M.Ch. in 1865, and also took the diploma L.M. Rotunda Hospital, Dublin. Soon afterwards he went to Chili as ship's surgeon, and taking medical diplomas in Spanish he acquired a large practice in Valparaiso, where in 1868 he married Anita, daughter of Dr. John McKay and Mrs. McKay of that town, and formerly of Fortwilliam, Inverness-shire. He returned to England in 1873 and bought the late Dr. J. F. Woody's practice at Tamworth.

In practice he was very successful both in a private and public capacity, and it was not long before he became a leading member of the community, as was evidenced by his appointment in 1883 to the commission of the peace for the counties of Stafford and Warwick. He seems to have had an hereditary or intuitive knowledge of law which made his work on the bench very valuable. He held a number of medical appointments in his neighbourhood, being certifying factory surgeon for the Tamworth district and medical officer to the Post Office, an appointment which he only resigned some three years ago. He was district surgeon to the London and North-Western Railway Company, medical referee under the Workmen's Compensation Act, on the honorary staff of the Tamworth Hospital, and medical attendant to the Guy's almshouses. As a member of the board of guardians and health authority he strove hard for the improvement of the sanitation of his district. Professional recognition also came to him from his brethren, for in 1892 he was made president of the Birmingham and Midland Counties Branch of the British Medical Association and was also president of the Midland Medical Society.

In 1898 he was appointed coroner for East Staffordshire. No better man could have been chosen for his office which he filled to general satisfaction until his last illness. Dr. Joy was a Past Master of the Marmion Lodge of Freemasons at Tamworth and a member of the Alma Mater Lodge at Birmingham. He leaves three sons and a daughter. His body was buried on Jan. 8th in the presence of a large gathering.

GEORGE MORTON WILSON, M.B., C.M. EDIN.

BY the death of Dr. George Morton Wilson on Jan. 6th the medical profession loses a prominent pioneer of the open-air treatment of tuberculosis. His sanatorium, opened about ten years ago, was one of the first three sanatoriums for Nordrach treatment in England.

Dr. Wilson graduated at Edinburgh in 1890, and after a voyage as ship's surgeon in the Orient Line and two hospital appointments, he started practice in the north-west of London. In 1898 signs of pulmonary tuberculosis manifested themselves, and, after undergoing a course of treatment at Nordrach, he gave up general practice, and in 1900 he opened at Penmaenmawr the sanatorium known as

---

[1] THE LANCET, 1909, vol. ii., p. 999.

"Nordrach-in-Wales." For some time his health appeared to be completely established; but a few years ago there were signs of recrudescence of the disease, and he began gradually to fail. During the last year he worked under great difficulties with indomitable courage and fortitude. To within a few weeks of his death he supervised all the details of sanatorium treatment in his usual thorough and conscientious manner. Gifted with a charming personality, and endowed with patience, firmness, sympathy, and tact, he made an ideal sanatorium physician, and his whole-hearted devotion to his work gained not only the confidence but also the affection of his patients, who will mourn him now both as doctor and friend. Dr. Wilson was married and leaves a son and daughter.

CHARLES JOSEPH WHITE, M.D. St. AND.

WE regret to record that Dr. Charles Joseph White died at Parkstone, Dorset, on Dec. 23rd of last year, in his eighty-fifth year. His early days were spent at Southsea. He received his medical education at University College, London, and took his degree at St. Andrews. He was for some time in the service of the P. and O. Co., thereby gaining wide experience as a traveller, afterwards settling in a private practice at Snodland, near Rochester, where his poorer patients were the especial objects of his untiring care and attention. In 1887 his health broke down through overwork and he retired to Parkstone, where the latter years of his life have been devoted to literary pursuits, botany being one of his favourite studies.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the first professional examination held on Jan. 4th, 5th, 6th, and 7th the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—John Gordon Ackland, Royal Albert Memorial College, Exeter; Wilfred Herbert Alderton and Christian Philip Sidney Allingham, London Hospital; Antoun Bishara, Cairo and St. Thomas's Hospital; Wilfred Angel Easton and Cassidy de Wet Gibb, Guy's Hospital; Olaf Gleeson, Westminster and King's College Hospitals; Vernon Edmund Lloyd, Guy's Hospital; John Neal, St. Bartholomew's Hospital; Sydney Jessie Scott Reid, Royal Free Hospital; Simon Simons, University College, Cardiff; John Rollo Noel Warburton, St. Thomas's Hospital; and Gerald Charles Wright, London Hospital.

Chemistry.—Hallowes Lloyd Addison, King's College; Otto Baier and Herbert Chorley, Liverpool University; Charles Theodore James Drobig, St. Mary's Hospital; Cuthbert Lindsay Emmerson, St. Bartholomew's Hospital; Thomas Sacheverell Greenaway and Alfred Morgan Hughes, Westminster Hospital and King's College; Joseph Kinnear, Manchester University and St. Thomas's Hospital; Hugh Ley Puxon Peregrine, St. George's Hospital and King's College; Garnet Wolseley Pool, St. Thomas's Hospital; Charles Rees Smith, Guy's Hospital and Birkbeck College; Walter Bernard Risk Stower, St. Bartholomew's Hospital; and William Henry Arthur Douglas Sutton, Guy's Hospital.

Physics.—Arthur Causton Freeth, St. Mary's Hospital; Harold Percy Gabb, University College; William Henry Harris, St. Bartholomew's Hospital; Claude Osborne Hudson, Sheffield University; and Ramon Ramero Sy Quia, City of London College.

Biology.—Christian Philip Sidney Allingham, London Hospital; Cedric Whitfield Armstrong, London Hospital; Fritz Ernest Bendix, Birkbeck College; Richard Oakes Crawshay, King's College; Thomas Hungerford Cresswell, Middlesex Hospital; Arthur Causton Freeth, St. Mary's Hospital; Lacy Norman Glaisby, Leeds University; Olaf Gleeson, Westminster Hospital and King's College; Owen Hairsine, Middlesex Hospital; Donald Herbert Hargrave, London Hospital; William Reginald Huleatt Heddy, Middlesex Hospital; Abdel Halim Hilmy, Cairo and St. Thomas's Hospital; Leon Kahan, London Hospital; Charles George Gordon Keane, St. Mary's Hospital; Tom Ramsden Kenworthy, Leeds University; Sydney Hudson Keys, Middlesex Hospital; Labib Abd-el Malik, St. Mary's Hospital; Walter Edgar Masters, London Hospital; Hoel Parry Price, Guy's Hospital; Sydney Jessie Scott Reid, Royal Free Hospital; John Patrick Shaw, Middlesex Hospital; Eric Morse Townsend, St. Paul's School and Birkbeck College; Thomas Reginald Trounce, Guy's Hospital; John Rollo Noel Warburton, St. Thomas's Hospital; and Ernest Jenner Wright, St. Mary's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery held on Jan. 4th, 6th, and 7th the following were approved in the subjects specified below:—

Chemistry and Physics.—Montague Kempston Butler, Birkbeck College; Henry James Cavanagh, Polytechnic Institute; Trafford Dudley Corke and Cyril James Crocker, Battersea Polytechnic; Eldred Leslie Fraser, Guy's Hospital; John Harvey Havers Griffin, South-Western Polytechnic; William Arthur Sowden Hills, East London Technical College and City of London School; Samuel George Howle, Municipal Technical School, Birmingham; Philip Hutson, Polytechnic Institute; Edward Eastaugh Johnson, Technical Institute, Norwich; Francis Vincent Maguire, Technical Institute, West Ham; Archibald Daniel Marston, St. Thomas's Hospital; Wilfred Richard Matthews, Polytechnic Institute; Charles Douglas Neale, Guy's Hospital; Arthur Leslie Packham, Middlesex Hospital; Lily Fanny Pain and Arthur Norman Paul, Birkbeck College; Charles Joseph Phillips, Guy's Hospital; Clifford Thomas Plimsoll, Royal Albert Memorial College, Exeter; Frederick John Smith, Sheffield University; Norman David Swayne Straton, Hartley College, Southampton; Georgo Lotan Venning, Municipal Technical School, Plymouth; Herman Wolff, Charing Cross Hospital; and Francis Bernard Yonge, Dulwich College.

Chemistry.—Sidney William Bevis, Guy's Hospital; Patrick Boyle, Polytechnic Institute; Ronald William Carmichael, Polytechnic Institute; Frank Lewis Fletcher, City of London College; Arnold Gibson, Royal Technical Institute, Salford; Robert William Spong, Municipal College, Portsmouth; Edgar Roskelly Williams, Guy's Hospital; and Reginald Wallace White, Polytechnic Institute.

Physics.—Vincent Clifford Carrington, University College, Nottingham; Thomas Clement Davies, Wandsworth Technical Institute; Charles Wyndham Martin, Liverpool University; Arthur Pomroy Sainsbury, Polytechnic Institute; Edward Royston Saul, Guy's Hospital; Harold John Stickland, Birkbeck College; and William Henry Whitworth, Manchester Municipal Technical Institute.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination (Parts I. and II.) held recently the following candidates passed in the subjects indicated:—

Biology.—C. A. Hepburn, Manchester.

Chemistry.—H. P. Jelley, Edinburgh.

Materia Medica and Pharmacy.—K. L. Hart-Davis, Royal Free Hospital; H. P. Jelley, Edinburgh; and A. J. V. Mathews, St. Mary's Hospital.

Anatomy.—D. T. Corke, London Hospital; and H. P. Jelley, Edinburgh.

Physiology.—D. T. Corke, London Hospital; R. Fowle, Edinburgh; and H. P. Jelley, Edinburgh.

UNIVERSITY OF EDINBURGH.—The following candidates were admitted to the degree of M.B., B.S., on Dec. 17th, 1909:—

D. C. Adam, J. R. Adam, David Aiken, R. J. Allsopp, M- S. J. Begg, Eveline R. Benjamin, C. A. Bignold, Walter Bisset, Peter de Bruijn, Peter Chalmers, P. H. Chauvin, James Davie, I. D. Dickson, Fred. Dillon, J. W. C. Drever, J. C. Drysdale, William Dunlop, Thomas Fraser, E. L. Galletly, T. J. Gilmore, W. T. Graham, Colin Grant, R. W. Greatorex, T. E. Guthrie, Robt. Hamilton, R. W. Hauman. J. B. Haycraft, John Henderson, A. E. Huckett, J. H. Jones, R. R. Kerr, C. G. Kurien, I. H. Lipetz, H. A. V. Loote, W. H. Lowe, A. J. M'Connell, James Mackail, D. Mackinnon, A. H. G. Mackintosh, S. E. Malherbe, A. M. Minford, R. M. Nicholson, W. J. Nisbet, Hugh Paterson, H. R. A. Philp, J. A. Pienaar, J. P. du Plessis, Ella F. Pringle, Agatha M. Robinson, C. S. Sandeman, Jessie A. Scott, J. M. Scott, J. D. Skinner, M. B. Smith, Wm. Stevenson, and E. V. Williams.

FOREIGN UNIVERSITY INTELLIGENCE.—*Prague (German University):* Dr. E. Munzer and Dr. G. Pick have been promoted to Extraordinary Professorships of Medicine. *Prague (Bohemian University):* Dr. L. Syllaba and Dr. A. Vesely have been promoted to Extraordinary Professorships of Medicine, and Dr. A. Heverock to an Extraordinary Professorship of Psychiatry.—*Strasburg:* The Chair of Ophthalmology with the Directorate of the University Ophthalmic Clinic has been offered to Professor E. Hertel, First Assistant in the Jena Ophthalmic Clinic.—*Tours:* Dr. Barnsby has been appointed to the Chair of Clinical Surgery in succession to Dr. Delagénière; Dr. Baudouin has been appointed to the Chair of Anatomy in succession to Dr. Ledouble; Dr. Bondouy of Rennes has been appointed to the Chair of Pharmacy and Materia Medica.—*Tübingen:* Dr. Albrecht has been recognised as *privat-docent* of Laryngology, Rhinology, and Otology.

THE DAIRIES OF WILTSHIRE.—At a recent meeting of the Calne board of guardians the chairman referred to the annual report of the county medical officer of health, and stated that the inspection of dairies showed there were a considerable number of cow-yards that were dirty and that greater cleanliness was necessary amongst the milkers.

THE Winter Dinner of the West African Medical Staff will take place at the New Gaiety Restaurant on Wednesday, Jan. 26th. Members of the staff who have not yet received notice and who desire to be present are requested to communicate with Dr. W. T. Prout, C.M.G., 78, Rodney-street, Liverpool.

THE NATIONAL ANTI-VIVISECTION HOSPITAL.—We have received two communications from the secretary to the board of management of this hospital reporting the result of meetings of the board of management. The purport of one is to declare that if the authorities of the hospital had had more opportunity to explain their position the recent condemnatory verdicts of coroners' juries would not have been given. At the second meeting a house physician and a house surgeon were appointed.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of this society will be held on Wednesday, Jan. 19th, at 8 P.M., when the annual address will be delivered by the President, Sir E. Ray Lankester.

THE GRESHAM LECTURES, 1910.—Dr. F. M. Sandwith, Gresham professor of physic, will deliver four lectures on Small-pox and Vaccination at 6 P.M. on Jan. 18th, 19th, 20th, and 21st. These lectures are free to the public.

THE SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—The total sum received by the treasurer from the Hospital Sunday collections amounted to £865. The Sunday schools collections in aid of the children's ward during 1909 realised £58.

A MEDICAL CENTENARIAN.—Mr. Edgar Jones, J.P., of Billericay, Essex, who celebrated the 100th anniversary of his birthday on Jan. 5th, is the second son of the late Mr. N. W. Jones of Clifton, Bristol. He has two sisters, aged 94 and 93 years respectively. Mr. Jones retired from the medical profession several years ago and has lived throughout his retirement at Billericay.

ROYAL WEST OF ENGLAND SANATORIUM, WESTON-SUPER-MARE.—At a special meeting of the committee of management of the Royal West of England Sanatorium held in October, 1909, it was decided to admit no more patients suffering from pulmonary tuberculosis. It was also determined to close the institution during November and December and to thoroughly disinfect and clean the building. This has been carried out at a cost of £400, and on Jan. 3rd the sanatorium was reopened for the admission of patients.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ATKINS, G. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wombwell District of the county of York.

BANKS, ISAAC, M.D., B.Ch. R.U.I., has been appointed a District Medical Officer by the Merthyr Tydvil (Glamorganshire) Board of Guardians.

ISAAC, RICHARD JAMES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Swansea Board of Guardians.

KING, WILLIAM ATHOL DESMOND, L.R.C.P. Lond., M.R.C.S., has been appointed Deputy Medical Officer for the Paignton and Marldon District of the Totnes (Devon) Union.

MILES, ALEXANDER, M.D., F.R.C.S. Edin., has been appointed Surgeon to the Royal Infirmary, Edinburgh.

MORISON, RUTHERFORD, M.B. Edin., F R.C.S. Edin. and Eng., has been appointed Professor of Surgery in the University of Durham College of Medicine, Newcastle-upon-Tyne.

MORTON, A. STANFORD, M.B., C.M. Edin., F.R.C.S. Eng., has been appointed Consulting Ophthalmic Surgeon to the Central London Throat and Ear Hospital.

STEVENS, BERTRAM CROSSFIELD, M.D., M.S. Durh., D.P.H., has been appointed an Assistant Medical Officer of Health and an Inspector of School Children to the Ayr County Council.

WATSON, C. GORDON, F.R.C.S. Eng., has been appointed Assistant Surgeon to St. Bartholomew's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Assistant Surgeon.

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum and fees, with board, residence, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Assistant Dental Surgeon.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CARDIFF MENTAL HOSPITAL, Whitchurch.—Physiological Chemist. Salary £200 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

CHELTENHAM GENERAL HOSPITAL.—House Physician and House Surgeon, unmarried. Salary £70 per annum each, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and laundress.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary 100 guineas per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months, Salary £30, with board and residence.

IRELAND, NATIONAL UNIVERSITY OF.—Extern Examiners in Chemistry, Anatomy, Physiology, Materia Medica, Medicine, Medical Jurisprudence and Hygiene, Pathology, Surgery, Ophthalmic Surgery, and Midwifery.

JOHANNESBURG HOSPITAL.—Medical Man in charge of the X Ray and Electrical Department. Salary at rate of £500 per annum.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary is at rate of £50 per annum, with board, residence, &c.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Honorary Assistant Physician.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Assistant Surgeon.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Honorary District Medical Officer.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—Clinical Assistants for the Out-patient Department (females).

NORTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £200 per annum.

OLDHAM INFIRMARY.—Second House Surgeon. Salary £100 per annum, with residence, board, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £80 per annum, with board, &c.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, washing, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Physician to Out-patients.

ST. MARY'S HOSPITAL, London, W.—Resident Casualty House Surgeon. Salary £100 per annum, with board and residence.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

STIRLINGSHIRE SECONDARY EDUCATION COMMITTEE.—Two Medical Inspectors of School Children (one female). Salaries £300 per annum, with expenses.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Assistant Surgeon. Also Honorary Gynæcologist.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Clinical Assistant in the Dental Department.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Charing, in the county of Kent; at Settle, in the county of York; and at West Huddersfield, in the county of York.

Births, Marriages, and Deaths.

BIRTHS.

GEDGE.—On Jan. 1st, at Pewsey, Wiltshire, the wife of Arthur S. Gedge, M.R.C.S., L.R.C.P., of a daughter.

WILSON.—On Jan. 7th, to Dr. and Mrs. David Wilson, jun., Paddock, Huddersfield, a daughter.

MARRIAGES.

SYMES-THOMPSON—TACON.—On Jan. 6th, at St. George's, Hanover-square, Henry Edmund Symes-Thompson, M.A., M.D., M.R.C.P., to Caroline Ada Chute Tacon, daughter of the Rev. Richard J. Tacon, of Rollesby Rectory, Norfolk.

DEATHS.

JOY.—On Jan. 4th, at The Manor House, Tamworth, John Holmes Joy, M.A., M.D., J.P., H.M. Coroner for East Staffs, in his 68th year.

SAVILL.—On Jan. 10th, as a result of a fall from his horse in Algiers, Thomas Dixon Savill, M.D. Lond., M.R.C.P. Lond., D.P.H., aged 53 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"EXTRAORDINARY CIRCUMSTANCE."

Three weeks ago, under the heading of "Looking Back," we published an extract from the columns of The Lancet for Dec. 24th, 1831, in which Mr. John Hoare, M.R.C.S., related how a farmer of Somersetshire, whose wife had given birth to three daughters, uttered a vow that if she presented him with a daughter at her next confinement he would never speak to her. A son was born, who, though he could converse perfectly well with his mother and sisters, was unable to speak to his father (and other males) for the remaining 30 years of that rash man's life. A most interesting comment appeared on this story in the form of a letter sent by a Bristol correspondent to, and published in, the *Daily News*, which ran:—

> In the "Old World Gleanings" of the *Bristol Times and Mirror* for Jan. 30, 1886, the substance of the letter from John Hoare quoted by you is given under the heading of "Strange Circumstance," and in addition is the following: In confirmation of the above curious circumstance, the following authenticated statement, made some years since, is worthy of being recorded, and it is given in the words of the late venerable clergyman, the Rev. John Boun, of Bath:—
>
> "On the 20th April, 1825, I called with my young friend, Mr. John Beauchamp, of West Pennard, at the hamlet of Lubbon, in the parish of Baltonsborough, to see an extraordinary young man, Eli Higgins, who, though 28 years of age, had never spoken to his father; but who could converse with his mother and sisters when in private with them. I saw him, when I asked him some questions, which he answered in writing. I told him that if he should happen to come to Bath I should be glad to see him at my house. On the 23rd of May he called, and, to my surprise, he entered freely into conversation with me, and told me that he had never the power to speak to his father, or to any other person in the neighbourhood, but only to his mother and sisters, nor even to them if any person was present. I asked him for a reason of his silence; he could not account for it in any way otherwise than that he wanted power to speak; but he had heard that his father had made a rash vow, but could not say what that vow was. He also desired that I would not make the circumstance known to his neighbours of his having conversed with me, lest they should suppose that his silence proceeded from obstinacy, not inability; but whilst his father lived he never should be able to speak to him, or anyone else in the country but his mother and sisters, but supposed that, should his father die, he might be restored to the free use of his tongue. Eli Higgins is a respectable-looking young man, the son of Robert and Jane Higgins. His father occupies his own freehold estate at Baltonsborough."

We are obliged to our contemporary for opening its columns to so singular a corroboration of our former correspondent's veracity, but we feel constrained to maintain the cautious attitude of the then editor of The Lancet and to be content with retelling the story of this curious case of intermittent aphonia without comment.

THE ANTI-TUBERCULOSIS EXHIBITION.

This peripatetic exhibition, which we described at its successful inauguration by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis at Whitechapel last June, was lately held in Oxford, Paddington, and Chelsea, and during the first week of this year was moved to Marylebone. On some previous occasions it had been found that the principal visitors to this educational display belonged to the well-dressed members of the community, and, as phthisis in Marylebone makes its chief ravages among the very poor, it was decided by the organisers that the exhibition must be housed in the least aristocratic locality, and in a building which no one would be too timid to enter. The County Council school in Bell-street, Lisson Grove, admirably answered these requirements and was thronged with eager visitors, especially in the evenings. During the six and a half days that the exhibition was open 10,583 admissions were recorded, about half of whom were school children, and nearly all of whom belonged to the poorest classes of the neighbourhood. Many intelligent working men found time to be there, besides crowds of mothers who attended with their babies. The school teachers were interested in the question from the start and announced to the children that on the reopening of the school an essay would have to be written on the exhibition. This doubtless stimulated some of the youngsters to pay a second visit and to pass on to their friends the information gained the day before from an untiring group of willing helpers. The pathological specimens were referred to as "'earts and souls in bottles," but, on the whole, the feeling of the crowds was one of intelligent interest and subdued awe. One delicate-looking boy remarked proudly to a lady helper, "Oh, yes, there is lots of consumption in our family; the doctor says I'm tubercular, but *Mother* says I ain't." One of the last visitors to the exhibition fired a Parthian shaft at the ladies which they found difficult to parry. In the evenings these helpers were very tired and probably looked it, so a muscular charwoman, after being worsted in an argument on the value of fresh air, revenged herself by exclaiming, "Well, miss, I don't think much of the looks of you ladies, for all your fresh air." The talks to school children were a great success, and they seemed thoroughly impressed with the dangers of "dust, darkness, damp, and dirt," while several were overheard officiously telling their elders to open their windows, or to sweep a room without raising dust. Experience here, as elsewhere, showed that the rising generation is very appreciative of new truths. Popular lectures, illustrated by lantern slides, were given every evening by Dr. J. E. Squire, Dr. J. J. Perkins, Dr. J. Walter Carr, Mr. C. H. Garland, Dr. W. P. Herringham, Dr. Jane Walker, and Dr. Christine Murrell, and were increasingly well attended, so that the last two lectures had to be given twice, on each occasion to crowded rooms. The greatest praise is due to the ladies of the Marylebone Health Society who so successfully carried through the undertaking and loyally aided Miss M. E. Broadbent, who bears a name reminiscent of energy and public spirit.

DANGEROUS HAIR-DYES.

To the Editor of The Lancet.

Sir,—Although not desiring to appear an advocate for the employment of hair-dyes, there may be justification for their use under special circumstances; therefore it can do no harm to give your readers information concerning a harmless and efficient hair-dye which imparts a rich black colour to the hair.

I discovered its application by chance and analogy very many years ago, and my recollections of it were refreshed by an excellent paper which was read a few years ago by Dr. Joseph O'Carroll of Dublin at the Royal Academy of Medicine, Ireland, on "Lead Encephalopathy," in which he traced the symptoms to the use of a hair-dye containing lead.

In the preparation that I referred to bismuth is the metallic ingredient and it is prepared as follows: I took 1 drachm of bismuth nitrate $Bi(NO_3)_3$ in crystals (free from uncombined nitric acid) and dissolved it in an ounce of glycerine, and made up to 10 ounces with distilled water; this was used by my "subject" with ammonium sulphydrate solution, and after with sodium sulph-hydrate as being less offensive than the former. Some time after I was working at original investigation on Emerson Reynolds's sulphurea, when it occurred to me to use it as a source of the electro-negative radicle of the bismuth compound; this succeeded, and as sulphurea solution has no unpleasant smell its use was an advantage.

Perhaps this information may be acceptable to some of your readers. If you think so, you are very welcome to make use of it.

I am, Sir, yours faithfully,

Ninian M. Falkiner.

Terenure, Ireland, Jan. 1st, 1909.

⁂ The reaction between bismuth nitrate and thio-urea results probably in the formation of sulphide of bismuth and the regeneration of urea. At all events, alkaline silver nitrate gives urea and silver sulphide, although the oxides of lead and mercury give sulphides and cyanamide.—Ed. L.

THE HEALTH OF MAURITIUS.

The report of Sir Graham Bower, K.C.M.G., Colonial Secretary of Mauritius, who recently arrived in England on leave, on the Blue-book of the Colony for the year 1908 has just been presented to both Houses of Parliament. There was a decrease in both the general population and the Indian population during 1908. In the general population the deaths exceeded the births by 325, and amongst the Indian population the deaths exceeded the births by 1315 The birth-rate in the general population was 34·1, and in the Indian 36·3 per 1000. The death-rate rose from 34·7 in 1907 to 40·0 in 1908. There has been a steady increase in poverty for years past, and it was greatly aggravated in 1908 by the financial crisis through which the island has passed. The proportion of general population relieved in 1908 was 35·2 per 1000, as against 26·2 in 1907; and the proportion of Indian population relieved was 8·9, as against 6·2. With so much poverty and unemployment the island must be over-populated. The admissions into the hospitals and asylums of the colony rose from 20,371 in 1906 and 23,335 in 1907 to 27,751 in 1908. The number of cases treated in dispensaries increased from 55,635 in 1907 to 66,077 in 1908. The admissions to hospital for malaria numbered 5071, the highest figure recorded during the past ten years, with the exception of 1905, when the number reached 5123. A large number of cases of splenic enlargement due, apparently, entirely to old-standing malarial infection came into hospital largely owing to distress. There was an alarming increase in deaths from diarrhœa and dysentery, 310 and 1316 respectively in 1908, as against 230 and 899 in 1907. The actual type of the disease has not yet been definitely established, but there are indications that many of the cases are of amœbic origin. Although in isolated outbreaks infection may possibly have taken place through the instrumentality of flies or dust, there seems to be good ground for regarding the contamination of rivers and streams, which serve very generally as sources of water-supply, with excremental matters as the principal channel of infection. 229 cases of enteric fever were notified, as against 145 in the previous year, this rise, however, being accounted for probably by the greater accuracy of diagnosis, principally through the assistance furnished by the bacteriological laboratory. It is not infrequent to meet with cases of more or less continued fever refractory to quinine with no malarial parasites in the blood, in which Widal's reaction is negative. These cases, which appear to be neither malarial nor typhoid in their nature, seem to point to the existence in the island of a febrile affection or affections, possibly similar to the unclassified fevers of India. The cases of diphtheria notified rose to 114, against 60 in 1907, and there were 14 deaths. Anti-diphtheritic serum from the Lister Institute was supplied by Government to all who applied for it. The epidemic of measles which broke out in 1907 continued in 1908, but disappeared before the end of the year; 476 cases were registered with 27 deaths. The number of cases of plague recorded during the year was 167, showing a reduction of 57 upon that for the preceding year. The epidemic of plague of 1908 was the smallest since 1899. The campaign against it was conducted on the same general lines as before, special prominence being given to the destruction of rats and disinfection of contaminated and insanitary premises. 172,504 rats were destroyed; of these, 11,518 were microscopically examined and 234 were found plague-infected. In spite of this a fairly severe epidemic is at present affecting the island. Twenty cases of cerebro-spinal meningitis were recorded during the year, this being the first time that this disease has ever assumed anything like epidemic form in the colony; 16 out of the 20 cases ended in death. Beri-beri showed no tendency to recur in epidemic form. In addition to the cases admitted to the public hospitals, a few scattered cases were reported by private medical practitioners. Nephritis, whatever may be its etiology, is steadily on the increase. It is to be hoped that clinicians and bacteriologists will unite in their endeavours to trace its as yet obscure causes. Erysipelas assumed some epidemic prevalence during the year, 73 cases being notified, with 16 deaths. Little change has taken place in the number of lepers maintained at the St. Lazare Asylum at the expense of Government, but this is no criterion of the progress of the disease in the island, as segregation in the asylum is not compulsory. The report describes at some length the anti-malarial measures which are being carried out in accordance with the recommendations of Professor Ronald Ross.

CONSCIENTIOUS.

"Is your milkman reliable?" asks the careful man in the *Fliegende Blätter*, and receives as a reply, "Absolutely! He even sterilises the water he adds to the milk."

THE "RYLAND SCHEMATIC EYE."

THE Ryland Schematic eye has been placed on the market to meet the demand for a practice eye which reproduces the conditions of the human eye. It is provided with four standard refractive conditions—viz., (1) hypermetropia; (2) myopia; (3) astigmatism; and (4) emmetropia. Conditions 1, 2, and 4 are obtained by differences in the length of the globe, while 3 is obtained by the use of a toric cornea. The globes are solid glass and of a refractive index to bring the nodal and principal points to practically the same position as in the human eye. The length and radii are the same as those met with in the average eye. In addition the backs are left slightly grey, thus giving a realistic appearance to the artificial retina, and also permitting the study of the retinal images and their variation for different positions of the correcting lens. It is completed by the addition of an iris diaphragm in contact with the cornea to give variation of pupillary aperture. The whole is nicely mounted and packed in a morocco case and may be obtained from any optician.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 12th, 1909.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan.	6	30·52	S.E.	...	43	43	38	39	40	Overcast
,,	7	30·57	S.W.	...	44	44	39	40	40	Overcast
,,	8	30·23	S.W.	...	51	44	40	43	44	Overcast
,,	9	30·05	S.W.	0·02	55	53	44	48	50	Cloudy
,,	10	30·03	S.W.	0·08	77	53	48	47	49	Cloudy
,,	11	29 85	W.	0·01	70	46	44	42	44	Fine
,,	12	29·56	W.	0·09	59	41	35	35	36	Overcast

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at 8 P.M.

Communications:

Mr. Walter Edmunds: Action of Thyroid and Anti-thyroid Preparations.

Dr. P. J. Cammidge and Dr. Semon: An Experimental Investigation of the Origin and Cause of the "Pancreatic" (Cammidge) Reaction in the Urine.

Mr. S. G. Shattock: Oöphorectomy and the Growth of the Pelvis in the Cow.

Dr. Herbert French: (1) A Case of Extensive but not Complete Destruction of the Adrenal Capsules by Caseation without Symptoms of Addison's Disease; (2) Pigmentary Deposits in Liver and Pancreas in Bronzed Diabetes.

Mr. E. O. Thurston: Chylous Cyst from the Neck.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 P.M.

Cases:

Dr. J. H. Sequeira: Case of Tuberculides.

Dr. H. G. Adamson: Onychia Syphilitica Sicca.

Dr. E. G. Graham Little: Sclerodermia.

And other cases.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Dr. J. A. Voorthuis (Holland) will demonstrate and read a paper on the Use of the Static Brush and Flame Discharge in the Treatment of Some Skin Diseases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. W. Evans: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. Wynter: Heart Disease in Middle Life.

TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Collier: Acute Encephalitis and Acute Poliomyelitis in the Year 1909.

WEDNESDAY.—4 P.M., Mr. J. Cantlie: Clinique (Surgical). 5.15 P.M., Lecture—Dr. A. Lieven (Aix-la-Chapelle): On the Treatment of Syphilis.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Wylie: Fœtid Breath.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Armour: Anatomy of Hernia.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Duodenal Ulcer.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Mr. R. Lloyd: Anæsthetics.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture-Demonstration:—Mr. F. H. Wallace: Difficulties in Anæsthesia.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. T. R. Whipham: Idiocy and Allied Disorders in Children. (First Lecture.)

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Neuritis.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir William Bennett: Some Points relating to Movable Kidney.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M. Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn road, W.C.

THURSDAY.—4.30 P.M., Clinical Lecture:—Mr. C. Nourse: Antral Suppuration.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—The Treatment of Eczema in all its Forms.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them ? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; A. D. P.; Miss C. Astell, Lond.; Mr. E. Aruold, Lond.; Accelerated Conversion Syndicate, Lond., Secretary of.

B.—Mr. F. A. Brockhaus, Lond.; British Diamalt Co., Lond.; Messrs. Baillière. Tindall, and Cox, Lond.; Colonel S. H. Browne, I.M.S., Hyeres; Mr. F. Burgess, Buenos Ayres; Brigade-Surgeon J. F. Barter, I.M.S., Lond.; Messrs. J. Bale, Sons, and Danielsson, Lond.; Mr. C. S. Brewer, Birkenhead; Messrs. Blundell and Rigby, Lond.; Brevon Bread Co., Plymouth; Dr. C. A. Bucklin, Glasgow; Board of Education, Lond.; Brighton and Sussex Medico-Chirurgical Society, Secretary of; Mr. E. Bougault, Paris; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. A. Blair, Newport, Monmouthshire; Dr. C. Hubert Bond, Epsom.

C.—Dr. J. H. Clements, Tamworth; Contributory Old Age Pension Committee, Lond.; Mr. Arthur H. Cheatle, Lond.; Dr. W. M. Crofton, Rathfarnham; Cheltenham Corporation, Clerk to the; Dr. F. Charlesworth, Boscombe; Cheltenham General Hospital, Secretary of; Messrs. Samson Clarke and Co., Lond.; Messrs. Cleaver, Holden, and Co., Liverpool; Messrs. J. and A. Churchill, Lond.; Clark's Syphon Stove Co., Lond.

D—Mr. Alfred E. Dean, Lond.; Major P. Dee, I.M.S., Bassein; Deutschen Gesellschaft für orthopädische Chirurgie, IX. Kongress der, Berlin; Messrs. F. Davidson and Co., Lond.; Dispenser, Leyton; Messrs. B. Davies and Son, Lond.; Messrs. Dymore, Brown, and Son, Reading; Messrs. W. Dawson and Sons, Lond.

E.—Miss C. M. Every, Lond.; Messrs. Eason and Son, Dublin.

F.—Messrs. Font and Co., Costa Rica; Messrs. Fairchild Bros. and Foster, Lond.; Far Eastern Association of Tropical Medicine, Manila, Local Secretary-Treasurer of.

G.—Messrs. Getting and Son, Lond.; Dr. A. Grant, Muar; Messrs. R. W. Greeff and Co., Lond.; Dr. Paul W. Goldsbury, Boston, U.S.A.

H.—Mr. J. Hart, Lond.; Holborn Surgical Instrument Co., Lond.; Dr. Stephen J. Henry, Kobé, Japan; Dr. Gustav Hamel. Lond.; Messrs. Hardie and Co., Glasgow; Mr. E. Haag, Lucerne; Messrs. C. H. Huish and Co., Lond.; Mr. J. Hoole, Parwich.

J.—Dr. M. B. James, Lond.; J. J.

K.—Dr. John Knott, Dublin; Messrs. Kutnow and Co., Lond.; Dr. Knight, Portobello; Messrs. R. A. Knight and Co., Lond.; Messrs. Krohne and Sesemann, Lond.

L.—Mr. H. K. Lewis, Lond.; Mr. H. H. Lacy, Warwick; Messrs. Luzac and Co., Lond.; Messrs. Lee and Nightingale, Liverpool; Mr. A. Lloyd, Liverpool; Leeds Trained Nurses' Institute, Superintendent of; Longrove Asylum, Epsom, Medical Superintendent of.

M.—Mr. A. R. Moody, Stoke-on-Trent; Dr. H. L. A. McKisack, Belfast; Dr. Ronald C. Macfie, Penmaenmawr; Medico-Legal Society, Lond., Hon. Secretary of; Mr. A. Ernest Maylard, Glasgow; M. M. A.; Maltine Manufacturing Co., Lond.; Messrs. O. Mayolez and Audiarte, Brussels; Miol Manufacturing Co., Lond.; Mr. J. F. Mackenzie, Edinburgh.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; National Hospital for Paralysed, Lond., Secretary of; Mr. Arthur C. Newby, Lond.

O.—Oldham Infirmary, Secretary of.

P.—Messrs. Peacock and Hadley, Lond.; The Public Trustee, Lond.; Dr. Herbert Peck, Chesterfield; Mr. R. Denison Pedley, Lond.; Mr. W. Pulman, Manchester; *The Prescriber*. Edinburgh, Publisher of.

R.—Dr. F. W. Forbes Ross, Lond.; Dr. Clive Riviere, Lond.; Royal Society of Medicine, Lond., Secretary of; Messrs. Rebman, Lond.; Dr. A. Roberts, Harrogate; Captain Leethem Reynolds, I.M.S., Sanawar; Dr. Samuel Rideal, Lond.

S.—Dr. T. Schott, Frankfort; Messrs. Swan Sonnenschein and Co., Lond.; Saccharin Corporation, Lond.; Messrs. Thomas Sly and Son, Salisbury; Professor G. Elliot Smith, Blackpool; Dr. Samuel Sloan, Glasgow; Messrs. Scott and Bowne, Lond.; Mr. E. Staude, Berlin; Sister, Bexhill-on-Sea; Smith's Advertising Agency, Lond.; Southampton Free Eye Hospital, Secretary of; Stepney Spare Motor Wheel Co., Llanelly; Messrs. Salt and Son, Birmingham; *Shrewsbury Chronicle*, Manager of; Sanitas Co., Lond.; Messrs. W. H. Smith and Son, Lond.; Scholastic, Clerical, &c., Association, Lond.; Messrs. J. P. Segg and Co., Lond.

T.—Mr. J. Thin, Edinburgh; Mr. Gordon Taylor, Lond.; Sir William J. Thompson, Dublin; T. J. C.

V.—Dr. Ralph Vincent, Lond.; Messrs. Vigot Freres, Paris; Messrs. J. W. Vickers and Co., Lond.; Victoria Hospital, Burnley, Assistant Secretary of.

W.—Dr. Forbes Winslow, Lond.; Dr. Cuthbert G. Welch, Lond.; Mr. R. Watson, Richmond, Surrey; Mr. M. Wood, Dumfries; Mr. H. Walker, Leeds; Messrs. Wills, Lond.; Messrs. Wright and Sons, Bristol; Mr. W. Roger Williams, Walton-by-Clevedon; Mr. Sinclair White, Sheffield.

Z.—Messrs. C. Zimmermann and Co., Lond.; Mr. A. P. Zucchi, Milan.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. T. B. Adam, Brechin; Mr. D. E. Anklesaria, Ahmedabad; Mr. E. G. Annis, Lond.; Mr. A. B. Atherton, Frederickton, Canada; Aberystwyth Infirmary, Secretary of; Aberdeen Royal Infirmary, Secretary of; Mrs. Anderson, Chapel-en-le-Frith; Messrs. T. and M. Armstrong, Lond.; Dr. R. Ahern, Frimley; Dr. A. Anderson, St. Leonards-on-Sea; A. D. L. T.

B.—Dr. E. Burnet, Leamington; Dr. K. C. Bose, C.I.E., Calcutta; Messrs. Brown and Pank, Lond.; Dr. T. W. Bartlett, Steeple Bumpstead; Mr. T. S. Brody, Wishaw; Dr. M. Burke, Leap; Dr. A. H. Brehant, Guernsey; Sir J. Broadbent, Lond.; Dr. C. Bradford, Acock's Green; Dr. W. Bainbridge, Kelso; Mr. T. B. Browne, Lond.; Mr. J. B. Blaekie, Lond.; Mr. F. P. Bartlett, Ottery St. Mary; Dr. C. Borg, Malta; Dr. E. F. Ballard, Wells; Mr. G. Booth, Chesterfield; Dr. R. A. Bickersteth, Liverpool; Mr. F. J. Breakell, Preston.

C.—Dr. T. Carruthers, Kilbarchan; Messrs. Crossley and Co., Lond.; Mr. F. W. Clarke, Chorlton-cum-Hardy; Crooksbury Sanatorium, Farnham, Medical Superintendent of; Dr. H. Critchley, Croydon; Mr. L. V. Cargill, Lond.; Dr. J. A. Codd, Wolverhampton; C. A.; Major Chapman, Lond.; Messrs. T. Christy and Co., Lond.; Messrs. J. Clarke and Co., Belfast; Mr. H. L. Clark, Lond.; C. P.; C. H. W.; C. A. S. R; Messrs. Clark, Son, and Platt, Lond.; Mr. T. C. Cooke, Halifax.

D.—Dr. D. Donald, Aldershot; Mr. J. E. Drake, Llansamlet; Dr. P. J. Daly, Cork; Dr. A. C. Devereux, Southampton; Mr. J. Dowling, Tipperary; Messrs. Deighton and Co., Worcester; Messrs. Dowie and Marshall, Lond.; Mr. D. R. Dass, Calcutta; Mr. D. Duff, Glasgow; Dr. J. Dickson, Huddersfield; Dispenser, Sloane Square; Dr. C. Dwyer, Dublin.

E.—Mr. A. R. Elliott, New York; Edinburgh School of Medicine for Women, Dean of; E. E.; Messrs. Evans and Witt, Lond.; Dr. J. L. Eastes, Lond.; E. C. C.; Dr. H. Ebbinghaus, Altena; E. W. B.

F.—Dr. Flesch, Buda Pesth; Mr. S. H. E. Foxwell, Lond.; Messrs. Finlay and Horne, Paris; Mr. J. B. Footner, Tunbridge Wells; F. J. F.

G.—Dr. M. Grabham, Funchall; Mr. H. B. Gardner, Lond.; Mr. J. S. Grubb, Clevedon; Messrs. Grace Bros. and Co., Lond.; Dr. J. Griffiths, Cambridge; General Medical Council, Lond., Registrar of; Mr. F. H. Godsell, Lond.; Mr. J. S. Gabriel, Antigua; General Apothecaries' Co., Lond.; Guernsey States Office, Supervisor of; Miss Goffe, Lond.; Mr. E. F. A. Girdlestone, Bristol; Glasgow Corporation, Treasurer to the.

H.—Dr. J. J. Hickey, Cork; Dr. G. B. Halford, Malvern, Australia; Sir C. Holman, Lond.; Dr. G. F. Hulme, Felixstowe; Messrs. Hastings Bros., Lond.; *Hastings Observer*, Manager of; Mr. W. H. Hall, Woking; Mr. W. Huntington, St. Andrews; Messrs. A. Heywood and Son, Manchester; H. K. W.; H. A. K.; Mr. W. J. Harris, Sheffield; Haydock Lodge, Newton-le-Willows, Superintendent of; Holloway Sanatorium, Virginia Water, Clerk to the.

I.—Dr. N. Instone, Lond.

J.—Mr. T. R. Judson, Liverpool; Mr. W. R. W. James, Liverpool; J. H.; J. H. A.; Mrs. Johnston, Toronto; J. S.; J. B. R. T.; J. R.; J. P.

K.—Dr. A B. Kelly, Glasgow; K. E. F.; Messrs. P. S. King and Co., Lond.; Mr. M. J. Kelly, Limerick; Dr. R. L. Keown, Managhan; Mr. S. Keith, Lond.; Dr. J. Knott, Dublin.

L.—Dr. H. Luna, Barcelona; Dr. E. C. Lewis, Lond.; Liverpool School of Tropical Medicine, Secretary of; Mr. C. B. Lockwood, Lond.; Dr. A. H. N. Lewers, Lond.; Lanark County Council, Hamilton, Treasurer to the.

M.—Mr. J. Matthews, Tamworth; Professor A. C. Pinto de Magalhães, Lisbon; Captain J. H. Murray, I.M.S., Port Blair; Dr. E. Meadows, Otley; Mr. J. Mattheson. Lond.; Manchester Hospital for Consumption, Secretary of; Dr. J. E. MacIlwaine, Belfast; Dr. W. H. MacWalter, Peterhead; Dr. L. J. Minter, Brighton; Dr. A. W. Moore, Stony Stratford; Modern Medicine Publishing Co., Battle Creek, U.S.A., Manager of; Mr. W. B. Mayne, Swindon; Mr. B. G. A. Moynihan, Leeds; Mr. W. J. McCardie, Birmingham; Mr. R. Machin, Lond.; Dr. J. Miller, Glasgow.

N.—Mr. J. B. Neal, Lond.; *New Orleans Medical and Surgical Journal*, Editors of; Mr. A. Neville, Hull.

O.—Mr. J. O'Donoghue, Dublin; Dr. P. N. B. Odgers, Northampton; Dr. H. O'Neill, Belfast; Dr. S. J. Ormond, Leatherhead; The Oform Co., Lond.; Dr. C. Ogle, Lond.

P.—Dr. Charlotte E. Pring, Nidadavol; Dr. H. I. Pinches, Lond.; Messrs. Parke, Davis, and Co., Lond.; Dr. A. B. Ples, Sitoebondo; Mr. P. Panton, Lond.; Dr. M. Paine, Lond.; Messrs. W. Porteous and Co., Glasgow; Messrs. Pratt and Co., Manchester; P. A. H.; Dr. E. Phillips, Coventry.

R.—Dr. N. Rivillini, Pontelandolfo; Messrs. Reitmeyer and Co., Lond.; Dr. A. M. y Romon, Valladolid; Mr. E. Roetger, Lond.; R. R.; Professor C. Ruata, Perugia; Reuter's Telegram Co., Lond.; Mr. A. Roberts, Manchester; R. B.

S.—Mr. C. F. Scripps, Lond.; Dr. F. J. Smith, Lond.; Dr. C. Simpson, Towcester; Mr. W. H. Soady, Dublin; Sheffield Children's Hospital, Secretary of East End Branch; Sangli State, India, Chief Medical Officer of; Major C. G. Spencer, Kew; St. Marylebone General Dispensary, Lond., Secretary of; Surgeon, Wood Green; Dr. G. Slight, Lond.; Mr. J. Sampson, York; Scarborough Urban District Council, Accountant to the.

T.—Mr. P. Templeton, Brighton; Mr. C. F. Tucker, Prabran, Australia; Mr. S. Tayler, Lacock; Mr. W. Turner, Lond.; Dr. H. Taylor, Llandovery; T. N. B. V.; Mr. E. D. Telford, Manchester.

V.—Dr. M. Valladao, St. Paulo; Dr. J. F. de Villiers, Vrede.

W.—Mr. F. A. Warner, Lond.; Mr. H. Welter, Paris; West Australia, Lond., Office of Agent-General; Mr. J. R. Woodcock, Ambleside; Mr. C. Wyndham-Gittens, Lond.; Messrs. W. Wesley and Son, Lond.; Dr. J. K. Watson, Byfleet; W. W. D.; Dr. W. A. Wilson-Smith, Long Sutton; Mrs. Walker, Lond.; Messrs. A. J. Wilson and Co., Lond.; Miss L Watney, Pangbourne; Dr. W. W. Wright, Toronto; Mr. S. H. White, Cambridge; Mr. E. A. F. Wilkes, Sheffield; Dr. V. Wanostrocht, Rhyll.

Z.—Dr. G. Zucchi, Florence.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

For the United Kingdom.*		To the Colonies and Abroad.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Special terms for Position Pages.

The Arris and Gale Lectures

ON

SOME PROBLEMS RELATING TO THE EVOLUTION OF THE BRAIN.

Delivered at the Royal College of Surgeons of England on Dec. 13th, 15th, and 17th, 1909,

By G. ELLIOT SMITH, M.A. Camb., M.D., Ch.M. Sydney, F.R.S.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF MANCHESTER.

LECTURE III.[1]

Delivered on Dec. 17th.

Mr. President and Gentlemen,—In the last lecture I sketched in broad outline the chief phases in the evolution of the cerebral cortex, so far as we know and understand them at present, up to the stage when definite signs are beginning to become manifest of the coming of the neopallium. We have seen that the wholly indefinite rudiment of the cortex which is found in the brain of the lamprey, at the very root of the vertebrate phylum, becomes larger and more definitely mapped out in the sharks and their allies as a distinct cortical layer; and when we go a stage higher, to the mud-fishes, we find in their brains a stepping-stone which enables us to traverse the enormous gap which separates other fishes from the reptiles; the cortex in them has become larger and much more compactly arranged into a definite layer of cells, which is already beginning to show signs of specialisation. When we pass from the mud-fishes to the reptiles these changes foreshadowed in the former have become realities; the pallium has become definitely subdivided into hippocampus, subiculum, and pyriform lobe, and the admission into the hemisphere of sensory fibres other than those which subserve the senses of smell and taste has exercised a disturbing influence on the structure of the hemisphere (compare Figs. 16 and 17).

These disturbing influences manifest themselves in different ways in the different reptilian orders, so that it becomes difficult to institute *exact* comparisons between the cortical formations in snakes, lizards, tortoises, and crocodiles; and the simplest phase of the reptilian pallium, seen in the "tuatara" lizard (*Hatteria* or *Sphenodon*), though comparable with the condition found in the mud-fish's brain, has not yet been homologised precisely with the pallial formations seen in the other reptilian orders. A vast amount of detailed research must be accomplished before order can be resolved out of the chaos which has resulted from hasty comparisons of the cortex of various reptiles and mammals, one with another, and before we can see in all clearness the exact path along which the mammal has passed in its evolution from some reptile-like ancestor. However, in spite of all these uncertainties, we are acquainted with a sufficient number of features, possessed in common by all reptilian brains and those of the most primitive mammals, to be able to form a very precise picture of how the cortex of the immediate ancestor of the mammal must have been arranged. (Fig. 17. Repeated from Lecture II.)

I disagree with most other writers upon this subject in maintaining that no true neopallium is found in the reptilian brain. In making this statement I am fully aware of the fact that (for the reasons explained below) I am recanting my own previously expressed opinion; but renewed examination of the anatomy of the brain in the reptile has convinced me that there is no structure yet differentiated, either from the pallium or from the corpus striatum, which can be homologised with any degree of exactitude with the neopallium. [It is necessary to make the explanatory reservation, to which I referred in my last lecture, that the subiculum hippocampi is a transition-region between the hippocampal and neopallial formations, and is not true neopallium, even though it is convenient to class it with the latter *for merely descriptive purposes*. The part of the reptilian cortex called neopallium in my former publications is subiculum; so long as we fail to discriminate between the latter and the true neopallium we cannot logically deny the existence of this structure in reptiles.]

Yet in the most primitive mammals a definite and properly constituted neopallium is present, into connexion with which there have grown nerve-tracts, conveying from the optic thalamus impressions brought to it by the nerves of touch, sight, and hearing. To represent the most primitive form of this neopallium I have drawn a hypothetical transverse section of the front end of a promammalian brain, to which I referred at the close of the last lecture. (Fig. 17.) This section is by no means a pure effort of the imagination, for the general relation of parts is almost identical with what we actually find in the brain of the marsupial mole (*Notoryctes*); the extent of the hippocampus is exaggerated to bring it into conformity with the state of affairs found in *all* reptilian and monotreme (fœtal) brains; and the histological detail has been filled in from actual preparations of marsupial, insectivore, and reptilian brains, stained by the Golgi method. Thus we can confidently look upon this drawing (Fig. 17) as a close approximation to the actual condition of the cerebral cortex in those primitive mammals which lived just before the dawn of the tertiary period. Even in the eocene period itself certain mammals still retained a curiously reptilian-like form of brain—see, for example, the cranial cast of *Dinoceras* (D. 390 in the Physiological Series in the Museum).

The important investigations carried on by Dr. Ariëns-Kappers of Amsterdam, taken in conjunction with the work of Dr. Wallenberg and Dr. Winkler, have made it quite clear that in the optic thalamus of reptiles there is a well-developed representative of the mesial thalamic nucleus (compare Fig. 18, V″) of mammals, which is the place of termination of what I shall call the trigeminal fillet (lemniscus quinti, Lq.). On this threshold, as it were, of the cerebral hemisphere, it is quite possible that even in the reptile there may be nuclei of other sensory tracts, ready to pour their contributions into the stream of nerve fibres passing into the hemisphere. But if such nuclei exist in reptiles we as yet know little of their connexions. When, however, we turn to consider the mammalian brain we find that the optic thalamus has developed into a bunch of large nuclei, in which the ascending tracts from the trigeminal, the general tactile, visual, and auditory nerves end (see Fig. 18), and from each of which a thalamo-cortical bundle passes upward into the neopallium (Figs. 20 and 21). The mode of ending of these various tracts in the thalamus of certain small rodents (mice, guinea-pigs, &c.) has been demonstrated with the utmost precision by Ramon y Cajal.[2]

If we take the brain of one of the lowlier marsupials—as representing the most primitive and generalised form of mammal—and locate these thalamic nuclei in the brain stem (viewed in profile from the left side), they will be related the one to the other as they are represented in Fig. 18. S″ is the ventral nucleus, which Ramon y Cajal calls "núcleo-sensitivo principal,"[3] because the mesial fillet (Lm) carries to it impulses collected by the general sensory nerves (S).

The sensory path (Lq), related in a similar manner to the fifth cranial nerve (V), ends in a nucleus (V″)—n. medialis thalami—below and slightly in front of the nucleus ventralis (S″). The optic tract (II′) ends partly in the corpus geniculatum externum (II″), which is a short distance behind the nucleus ventralis; and the acoustic tract—the lateral fillet (Ll)—ends in the corpus geniculatum internum (VIII″), which is below and slightly behind the external geniculate body (II″).

I have referred to the topographical relationship of these thalamic nuclei because I believe that the original mapping out of the neopallium into areas, which are cultivated by the various sensory systems, is determined by this arrangement of the thalamus. The ascending nerve-tract which arises in each of these thalamic nuclei enters that particular part of the neopallium which happens to be nearest to it. Thus the optic and acoustic radiations originally passed directly outward[4] (Fig. 20) to their respective neopallial areas (II''' and VIII'''), which at first were topographically related, the one to the other, in a manner analogous to their thalamic nuclei (Fig. 18, II'' and VIII''); but at quite an early stage of the neopallium's expansion the dorsally-placed visual centre moves backward to occupy a more caudal position than the auditory centre (Fig. 19); the latter happens to be placed in the ventral part of the neopallium, which does not move, being moored, as it were, by its proximity to, and continuity with, the basal ganglia.

---

[1] Lectures I. and II. were published in The Lancet of Jan. 1st (p. 1) and 15th (p. 147), 1910.

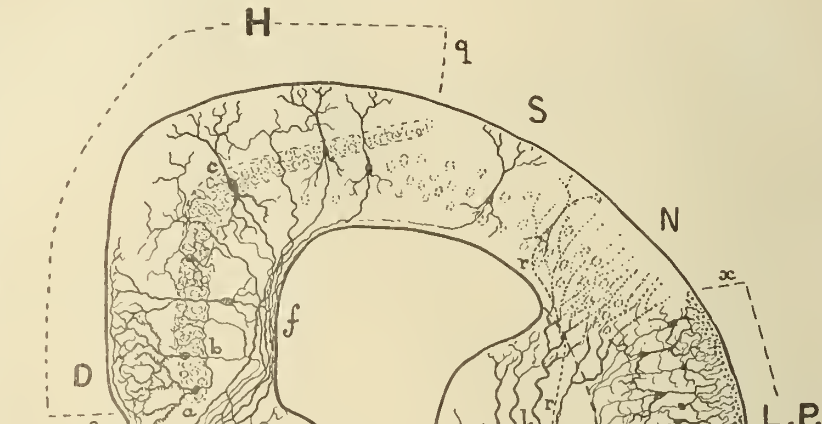
[2] Plan de Estructura del Tálamo Optico, Report of the Fourteenth International Medical Congress, Madrid meeting, 1903, *Volume General*, 1904, pp. 277-295.

[3] Op. cit., p. 286.

[4] In this diagram the optic radiation is already bent upwards, its cortical area having been pushed dorsally by the growth of the acoustic area in response to the more recent admission of the auditory radiation into the hemisphere.

For similar reasons the neopallial centre for the important "fifth nerve sense"[5]—the "oral sense" of Edinger (1908)—lies far forward at the ventral margin of the neopallium (Fig. 19, V''') in a position opposite its thalamic nucleus (Fig. 18, V''). The general sensory area (S''') lies above and behind the oral area (V''') in a situation analogous to that of its thalamic nucleus (Fig. 18, S''). A coronal section (Fig. 21) through the brain of a fœtal platypus, which I have described in some detail elsewhere,[6] shows the thalamo-neopallial part (Fig. 21, V''') of the trigeminal path with admirable clearness. The trigeminal nerve attains an enormous size in the platypus, whose snout is one of the most sensitive tactile organs found in any vertebrate, and the thalamic nucleus, in which its fillet ends, is correspondingly well developed (Fig. 21, V''). It probably is fused to the "principal sensory nucleus" (S'') of Cajal, which, however, is so overshadowed by it as not to be easily recognisable. The large thalamo-cortical tract (V''') springing from this nucleus passes directly into the neopallial area (Fig. 21, N, Fig. 19, V'''), which happens to be placed nearest to it.

FIG. 17.



A diagram representing the essential features which a coronal section through the anterior end of the right hemisphere of a hypothetical promammal must have presented. H, The hippocampus. D, Its mesial part in process of specialisation to form the fascia dentata. *a*, Its "dentate cells." *c*, Its "hippocampal cells." *b*, An intermediate type of cell. *f*, *f'*, Fornix. C.P., The corpus paraterminale. T.O., Tuberculum olfactorium. S, The dorsal cortex (compare D in Fig. 16), now become the subiculum hippocampi. L.P., The lateral cortex of the reptile, now become the lobus pyriformis. N, The earliest rudiment of the neopallium. C.S., The corpus striatum. L.P., Lobus pyriformis.

In this way the thalamic nuclei become projected, as it were, into the neopallium, and the latter becomes mapped out into territories (Fig. 19), which (in the most primitive mammalian brain) faithfully reproduce the topographical relationships of the nuclei of the thalamus. What the nature of the anterior end of the neopallium (Fig. 19, C) may be, we do not know: it seems to be associated with the nucleus anterior thalami; and both the neopallial area and the thalamic nucleus are connected in several ways with olfactory parts of the brain. Nevertheless, electrical stimulation of this area gives rise to movements of the eyes and retraction and turning of the head.

Thus at its birth the neopallium is already mapped out into a number of well-defined territories, each of which is a receptive organ for some particular kind of sensory impression, and is already specialised in structure to perform its own peculiar functions. Within the neopallial sphere of tactile sensibility a special band (Fig. 19, H, A, L) of cortex, even in the most primitive mammals, has developed the special function of controlling the movements of various parts of the body—head (H), arm (A), and trunk and leg (L).

Somewhere in the neighbourhood of the chief ultimate termini of the paths of tactile sensibility within the central nervous system of every vertebrate we find a region which, when electrically stimulated, will excite movements in the appropriate part of the body. For example, my friend Professor W. H. Wilson of Cairo has found that stimulation of the optic lobes (superior quadrigeminal bodies) of the large Egyptian iguana produces movements of various parts of the body, and that there is a definite and precise motor localisation in the mid-brain of these reptiles—a localisation which is no doubt determined by the ending of the tactile tracts (from the body generally) in this part of the brain. In a similar manner, in the mammalian brain, when this sensory path makes its way up to the neopallium, part of the centre for tactile sensibility — the antero-mesial part (Fig. 19; H, A, L)—becomes specialised in function and differentiated in structure to form the so-called motor area.

It may be a matter of considerable significance if the motor area of the simpler and more generalised marsupials *Perameles* and *Dasyurus*, as mapped out by Dr. Chapman[7] and Dr. Flashman[8] respectively, should prove to be in reality so much smaller (compare Figs 19 and 22) than that of the superficially similar eutherian hedgehog's brain, which has been studied experimentally by Dr. Gustav Mann and by Dr. and Mrs. Vogt,[9] as their respective diagrams suggest.

---

[5] Watson: The Mammalian Cortex, Archives of Neurology, 1907, p. 91.

[6] Quarterly Journal of Microscopical Science, 1896, Plate 11, Fig. 12.

[7] H. G. Chapman: Note on Cerebral Localisation in the Bandicoot (*Perameles*), Proceedings of the Linnean Society of New South Wales, August 29th, 1906.

[8] J. F. Flashman: A Preliminary Note on the Motor Areas in Marsupials, Reports from the Pathological Laboratory of the Lunacy Department, Sydney, 1906.

I do not doubt the accuracy of the results obtained independently by two such reliable observers as the Sydney investigators just mentioned; but there is no denying the fact that the mean of the results obtained in experiments on the brain of the almost equally primitive marsupial *Didelphys*, by Herrick, Ziehen, Cunningham, and the Vogts, approximates much more nearly to the localisation in the hedgehog's brain. In any case the motor area seems to have become definitely bigger in the eutherian mammal, the most primitive localisation of which is roughly represented in Fig. 19. The corresponding motor centres in *Dasyurus* (after Flashman) are shown in Fig. 22, H, A, L.

In all except the highest mammalian orders we find a striking demonstration of the important part played in the formation of the neopallium by the transformation of the skin into a highly developed tactile organ,[10] for the size of the neopallium and the weight of the brain as a whole vary almost directly (in any given order) with the extent of the surface of the body.[11] Dr. George A. Watson has called attention to the important rôle played by the tactile organs supplied by the fifth nerve in the lowlier mammals.[12] In them the cerebral cortex is a delicate instrument, the structure of which responds to every alteration in the habits of the animal. In the majority of mammals the sense of smell is most highly developed, but the cortical areas which perform olfactory functions rapidly dwindle once an animal takes to aquatic habits, or, though in a lesser degree, leaves the earth and becomes arboreal. So in other mammals the special development of one sense or another will produce a corresponding modification of the cerebral cortex.

But the neopallium is being subjected to a much more profound influence than that due to mere variations in the importance of its different sense organs. Each of the different territories devoted to the cultivation of impressions of particular senses is undergoing a process of evolution, in many respects analogous to that already noticed in the case of the reptilian hippocampus. (See Fig. 17.) At first each area is concerned with (*a*) the reception and conscious appreciation of those particular kinds of impressions, to which its connexions and its structure fit it to respond; (*b*) the blending of these impressions with those simultaneously received by other neopallial areas; and (*c*) the excitation or inhibition of lower nervous centres, so as to bring the influence of this consciousness to bear upon the behaviour of the animal.

But there develops within each neopallial area a special mechanism—the nature of which is altogether unknown to us—which confers upon it the power of acting as a recording apparatus, in which impressions can in some way be stored, so that on future occasions a new stimulation can awaken memories of foregoing states of consciousness, by means of which the latest impression can be tested and compared with others which have impinged upon this neopallial mechanism on previous occasions. In other words, each neopallial area becomes not merely a receptive organ for sensory impressions, but also an organ of associative memory.

With this double function to perform it undergoes a differentiation of structure—certain elements in each area continue to act as "receivers," which in turn transmit the impressions, no doubt modified in some way, to the second class of elements. The latter do not receive sensory impressions directly, but only through the intermediation of the former—the receivers; but in addition to "recording" the messages conveyed from the latter they perform other functions; fibres springing from them establish connexions with different areas of the same and of the opposite hemispheres, and also with other parts of the nervous system.

Thus each neopallial area in the primitive mammalian brain contains both "sensory" and "projection" elements, intermingled in much the same way as the sensory (fascia dentata, Fig. 17, *a*) cells and projection (hippocampus, Fig. 17, *c*) cells are mixed in the reptilian hippocampal formation. But just as the latter, during the process of evolution of the mammal, becomes separated into two parts, one becoming essentially if not wholly sensory (the fascia dentata), the other a projection-area (hippocampus *sensu stricto*), so each of the neopallial areas becomes transformed into a central "sensory" part and a peripheral "projection" part. In Fig. 27 A.S. is the centrally placed visuo-sensory cortex, and A.PA. and A.PE. are peripheral bands of association (visuo-psychic) cortex fringing it.

The different sensory areas, which were originally coterminous, thus become separated the one from the other by a double series of "projection" (or "association") areas, i.e., one or more developed at the periphery of each of the two previously coterminous regions.

Now while there is a limit to the extent to which the "sensory" areas grow—a limit, however, subject to a wide range of variation in different mammalian orders—there is apparently no restriction to the possibilities of extension of the "association" or "psychical" areas. The visuo-sensory area (Fig. 27, A.S.) of the human neopallium—i.e., the region which receives fibres of the optic radiation direct from the lateral geniculate body, is no bigger than that of a monkey with equally large optic nerves. I measured the superficial extent of the visuo-sensory area (area striata) in 24 (12 pairs) human hemispheres and found the average to be almost exactly 3000 square millimetres. In a small *Cercopithecus* it was 1700, a *Macacus* 2000, a small baboon 2400 square millimetres; while a large baboon or an anthropoid ape may have a visual (sensory) cortex as large as a man's.

Thus, we can take it that the superiority of the human, over the ape's, brain as a psychical organ must be the result mainly of the higher development of the "association" areas. This must be true even if we admit the possibility—for as yet we have no positive proof—that the relatively hairless skin of man is a much more efficient tactile organ, and perhaps has associated with it a larger tactile sensory area in the neopallium, than that of the hairy ape.

Interesting as these problems are, I must leave them at this stage and turn to consider some of the effects of this process of neopallial expansion and differentiation to which I have thus briefly referred. I choose for consideration that particular aspect of neopallial morphology to the study of which your museum is so admirably adapted—namely, the manner of folding of the cortex to form sulci and convolutions.

In the course of its growth the neopallium does not increase in thickness beyond a certain point; its expansion is attained almost wholly by an addition to its superficial extent. This is no doubt due to the consideration that an increase in thickness would necessitate larger blood-vessels to reach the whole depth of the cortex; and the pulsation in such large vessels would be a disturbing factor to the delicate cortical mechanism. To obviate this the cortex remains thin and its expansion is expressed wholly as an increase in the extent of its surface. The result of this is that at an early stage the pallium becomes folded. The first fissure to appear is the hippocampal, which is *sui generis*. Next in order is the rhinal (Figs. 19, 22, and 27, *f. r.*), which is a folding of the cortex along the line separating the lobus pyriformis (L. P.) from the neopallium (N.). These two cortical areas differ in structure and function and expand at different rates in the course of their growth. Hence this furrow develops along the boundary-line.

The hippocampal fissure is found in every mammalian brain and the rhinal fissure in some members of every order and the vast majority of individuals. But there are a considerable number of mammals in which the neopallium is smooth.

When folding of the cortex begins, the earliest neopallial sulci are formed in a manner analogous to that just mentioned in the case of the rhinal fissure—i.e., sulci appear along the lines of separation of the functional areas, which I have already described (Fig 19). Even in some of the lowliest marsupials a folding (Fig. 23, *s. c.*) of the mesial part of the neopallium occurs along the boundary between the visual area (A.S.) and the subiculum hippocampi (S.). This is the most primitive form of the calcarine sulcus —being strictly homologous with the so-called "stem" of the human calcarine (Fig. 27, *s. c.*)—and it indents the whole thickness of the neopallium, so as to produce a swelling, the calcar avis (hippocampus minor), in the cavity of the lateral ventricle.[13] The realisation of this fact sheds a curious light upon the heated controversy of the years 1857–1862, to which I referred in my first lecture,[14] for Sir R. Owen wanted to exalt as the chief distinctive character of the human brain and the main objection to the adoption of Darwin's theory this feature which we now find in the lowliest mammals!

---

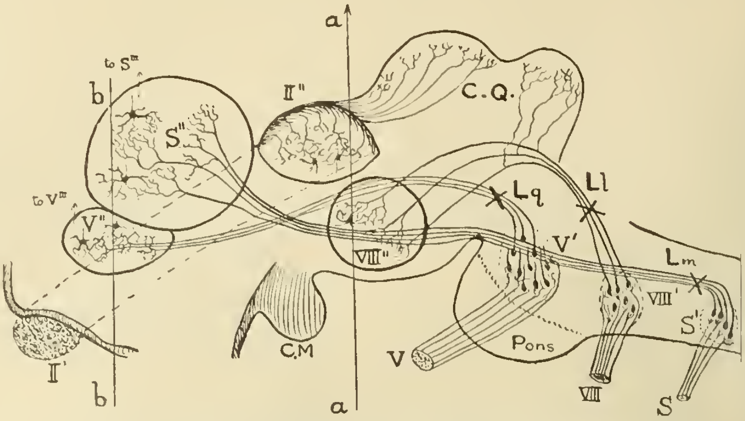
[9] C. and O. Vogt: Zur Kenntnis der electrisch erregbaren Hirnrinden-Gebiete bei den Säugetieren, Journal für Psychologie und Neurologie, 1907.

[10] My friend, Professor J. P. Hill, had come quite independently to the same conclusion.

[11] Eugen Dubois: Sur le Rapport du Poids de l'Encéphale avec la Grandeur du Corps chez les Mammifères, Bulletins de la Société d'Anthropologie, 1897.

[12] Archives of Neurology, 1907.

FIG. 18.

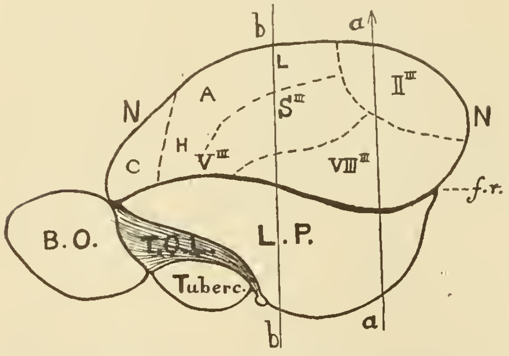


Scheme of the primitive arrangement of the thalamic nuclei in the lowliest mammals and the tracts passing to them; seen from the left lateral aspect. V, Trigeminal nerve. V', Its terminal nucleus in the pons. Lq, The lemniscus quinti, crossing at X and passing to the thalamic nucleus V''. S, The posterior root of a cervical nerve. S', The nucleus cuneatus. Lm, The mesial fillet crossing at X and proceeding to the thalamic nucleus S''. VIII, The cochlear nerve. VIII', The tuberculum acusticum. Ll, The lateral fillet, crossing at X, and passing to the corpus geniculatum internum VIII''. II', The optic tract proceeding to the corpus geniculatum externum II''. C.M, The corpus mammillare. *a a*, The plane of the section shown in Fig. 20. *b b*, The plane of the section shown in Fig. 21.

Contemporaneously with the appearance on the mesial surface of the calcarine sulcus a small furrow (which in the catalogue I have called "orbital") develops on the outer aspect of the front end of the hemisphere (Fig. 22, *s. o.*). It forms the caudal boundary of the area labeled C in Fig. 19, separating it from the motor area (H and A). A large number of lowly marsupials, insectivores, chiroptera, and even the smaller representatives of higher orders, have either no neopallial sulci at all or only calcarine and orbital (or one or other of these).

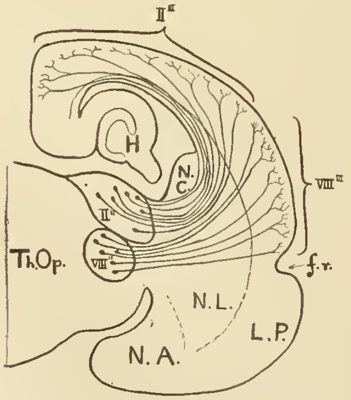
But a third neopallial sulcus soon makes its appearance along the line of separation of the auditory (Fig. 19 VIII''') and sensory (S''') areas. This is

FIG. 19.



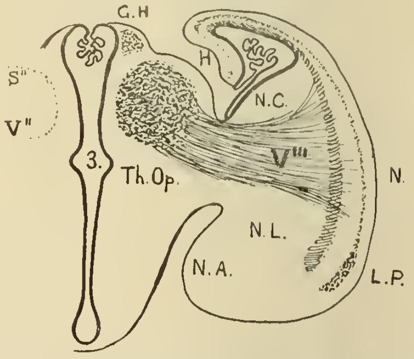
A map of the cortical territories in a primitive mammal (left lateral aspect of hemisphere). II''', The visual area. VIII''', The auditory area. S''', Tactile area. V''', The trigeminal tactile area. H, A, L, The motor area; H, Head; A, Arm; L, Leg. L.P., Lobus pyriformis. T.O.L., Tractus olfactorius lateralis. Tuberc., tuberculum olfactorium. B.O., Bulbus olfactorius.

FIG. 20.



Scheme of primitive arrangement of the cortical visual (II'' to II''') and auditory (VIII'' to VIII''') paths, seen in a hypothetical section cut in the plane *a a* (Figs. 18 and 19). Th.Op., Optic thalamus. H, Hippocampus. N.C., Caudate nucleus. N.L., Lenticular nucleus.

FIG. 21.



A section across the right side of the forebrain of a fœtal platypus—in a plane analogous to that indicated in Figs. 18 and 19 by the lines *b b*. V''', The cortical tactile path, passing from the combined trigeminal and general sensory nucleus (V'' and S') in the thalamus to the neopallium, N. G.H., Ganglion habenulæ; 3, third ventricle.

FIG. 22.

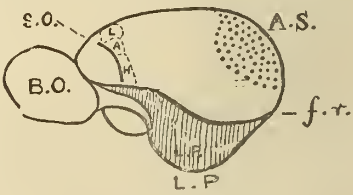
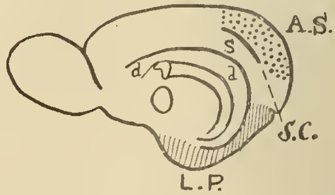


FIG. 23.



FIGS. 22 AND 23.—The lateral aspect of the left and the mesial aspect of the right hemisphere in *Dasyurus*. A.S., Area striata (visual cortex). *s.c.*, Sulcus calcarinus. S., Subiculum hippocampi. H, A, L, Motor area (after Flashman). S.O., Sulcus orbitalis.

---

[13] See Catalogue of the Physiological Series of the Museum, Fig. 49, p. 167.

[14] THE LANCET, Jan. 1st, p. 3.

the most primitive form of the suprasylvian sulcus. Whether or not the "lateral" (or "corono-lateral") sulcus *in its most primitive form* (i.e., *not* the "lateral" as we find it in carnivores, ungulates, and lemurs) is developed as a boundary between the sensory (S''' + V''') and motor (L + A + H) areas is not yet known for certain.

At a somewhat later stage in the evolution of the mammalia (in carnivora, ungulata, and especially primates) a furrow develops along the lateral edge of the visual cortex (Fig. 19, II'''; also Fig. 25, *x*—A.S. being the visual area). It represents the first phase of that peculiar depression which reaches its highest (or most obtrusive) development in the apes, and has been supposed to be so peculiarly distinctive of them that it is commonly known as the "Affenspalte." It is now known to occur in a much wider range of mammals, including man, in whose brain a definite sulcus lunatus, as I have called this furrow, can usually be found in each hemisphere.

FIG. 24.

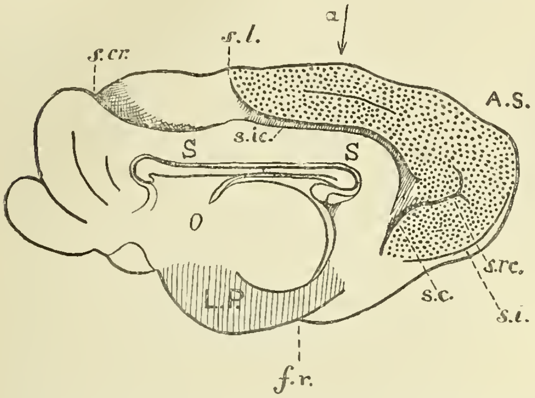
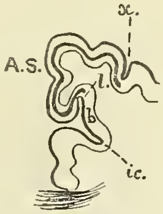


FIG. 25.



FIGS. 24 AND 25.—The mesial aspect of the right hemisphere of an Egyptian "mongoose" (*Herpestes*), and part of a transverse section made at the point *a*. A.S., Area striata.

Another primitive sulcus is that (Figs. 24 and 25, *s.ic.*) which develops along the peripheral boundary of the subiculum (using that term in the peculiar sense defined in the second lecture); this is the sulcus cinguli (calloso-marginalis).

When you recall the facts which I was discussing immediately before we turned to the consideration of the cerebral sulci—namely, that the differentiation of the primitive neopallial districts (Fig. 19) to form "association areas" affects the peripheral parts of these districts most of all—you will realise how important must be the effect of those evolutionary processes on the sulci, which develop originally, as we have just seen, as the peripheral boundaries of these districts—i.e., at the seat of greatest disturbance during the subsequent growth of the cortex. As the edges of the primary sensory areas (Fig. 19) become specialised to form new cortical territories (compare Fig. 27), and these begin to expand, new furrows develop to accommodate the growing neopallium, and the old furrows take on new forms or give place to others produced by new methods of folding. Thus the problem of determining the homologies of sulci becomes one of very great complexity. A specific example will make the nature of these difficulties more intelligible.

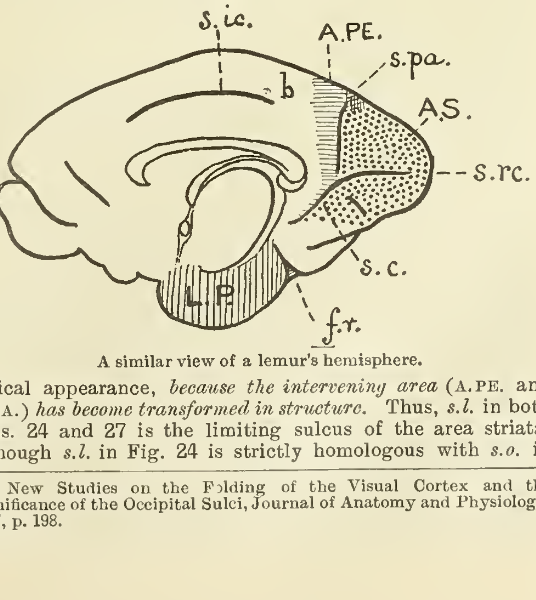
The visual cortex in all mammals has a well-defined structure, for in all except the smallest species a very distinct white line (the stria described by Gennari)[15] plainly visible to the naked eye, serves to distinguish this region, which for convenience of description I have called the area striata. In most mammals a furrow develops at its mesial edge (Figs. 23 and 24, *s.c.*)—the anterior limb of the calcarine sulcus (s. calcarinus proprius); another furrow (Fig. 24, *s.rc.*) is formed in many mammals, and especially in primates, by the axial folding of the area striata itself—the posterior limb of the calcarine sulcus (s. retrocalcarinus). In all primates (Figs. 26 and 27), and occasionally in other orders (Fig. 24), the sulcus calcarinus (*s.c.*) and the s. retrocalcarinus (*s.rc.*) become confluent. In many mammals furrows develop at the other margins of the area striata—above (or in front), sulcus suprastriatus (Figs. 24, *s.l.*, and 26, *s.pa.*); laterally, sulcus lunatus; and below, sulcus infrastriatus (Fig. 24, *s.i.*).

When the periphery of the visual cortex becomes specialised to form an association area (peristriata, Fig. 27, A.PE.), and even when the process is repeated to differentiate the area parastriata (A.PA.) the sulcus calcarinus (*s.c.*) and the sulcus retrocalcarinus (*s.rc.*) are not affected—at any rate, directly—by these events.[16] But the suprastriate, lunate, and infrastriate sulci are situated in the midst of the sites of this specialisation and active growth; what happens to them amidst such disturbances?

After the process of specialisation has been completed (in the human brain) we find dorsal and ventral limiting sulci at the margins of each cortical area (Fig. 27). For example, there is a sulcus limitans dorsalis areæ striatæ (*s.l.*), an s.l.d.a. parastriatæ (s. occipitalis paramarginalis, *s.p.*), and an s.l.d.a. peristriatæ (s. paroccipitalis, the caudal extremity of the intraparietal). The difficulty in determining the homologies of sulci arises in this way. In a mammal in which the parastriate area (A.PA.) has not been differentiated from the striate (A.S.) the limiting sulcus would be termed "striatæ," because it marks the boundary of the region containing Gennari's line: but, when the edge of the latter area becomes altered in structure and becomes parastriate, the same furrow which was called s.l.a. striatæ (in Fig. 27, *s.p.*) becomes s.l.a. parastriatæ, and a fresh furrow (*s.l.*) develops at the *new* edge of the striate area, to which we not unnaturally apply the *old* name s.l.a. striatæ. The same process has already occurred in the case of the limiting furrow of the peristriate area. Thus, for example, the original boundary sulcus of the visual area on its dorsal aspect is the paroccipital (*s.o.*), the second is the paramesial (*s.p.*), and finally it becomes, and remains, the sulcus limitans dorsalis areæ striatæ (*s.l.*).

Stated in these terms the facts become quite clear and the paradox is explained that a sulcus, which lies at the margin of a definite histological formation (*s.l.* in Fig. 24) in one brain, may be strictly homologous with a furrow in another brain (*s.o.* in Fig. 27) which is far removed from the edge of the cortical area presenting the same histological appearance, *because the intervening area* (A.PE. and A.PA.) *has become transformed in structure.* Thus, *s.l.* in both Figs. 24 and 27 is the limiting sulcus of the area striata, although *s.l.* in Fig. 24 is strictly homologous with *s.o.* in

FIG. 26.



A similar view of a lemur's hemisphere.

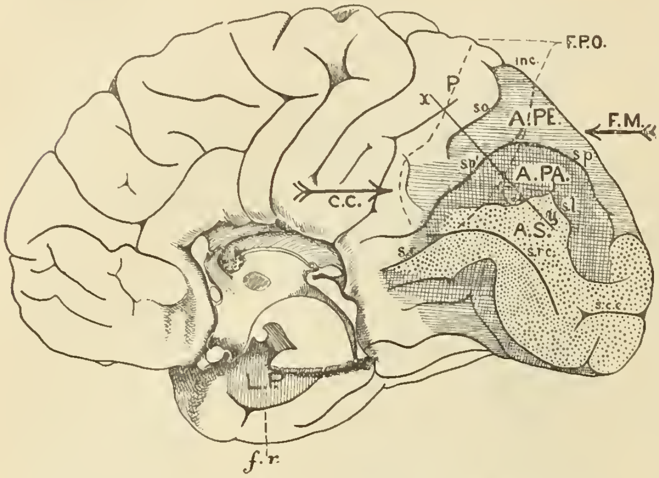
---

[15] De peculiari structura cerebri, Parma, 1782, p. 74—"albidiorem lineolam vidi primum die 2 Februarii, anno 1776."

[16] New Studies on the Folding of the Visual Cortex and the Significance of the Occipital Sulci, Journal of Anatomy and Physiology, 1907, p. 198.

Fig. 27. The failure to understand this essentially simple principle is responsible for most of the hasty and shallow criticisms, which abound in the current literature relating to the interpretation of cerebral sulci.

FIG. 27.



The mesial aspect of the right cerebral hemisphere of the (practically) acallosal brain of an Egyptian fellah woman. A.S., Area striata. A.PA., Area parastriata. A PE., Area peristriata. The three dorsal limiting furrows of these areas: *s.l.*, *s.p.*, and *s.o.* The other features explained in the text.

On analysing the operation of these factors many irregularities occur which add to the confusion. In the first place, when the periphery of a sensory area becomes specialised to form a fringe of a different structure, the newly developed furrow—i.e., the sulcus formed at the *new* edge of the old area—may be deeper than the *old* furrow at the original edge; or the latter may even disappear entirely, so that the new sulcus may be mistaken for the old, which has disappeared. (See, for example, Fig. 26, the old sulcus at the edge of A PE. has disappeared, and the new sulcus, *s.pa.*, is at the new edge of A.S.) The confusion becomes the greater and the more paradoxical when I add that the new sulcus, which may thus simulate the old (in its relationship to the cortical area presenting the structure of the original sensory area) may further resemble it in its topographical position. When the edge of a cortical area (take, for example, the visual or striate) becomes specialised as an association area (peristriate) there is no reason why the sensory part (striate) should be diminished in size; in other words, an equally large sensory or receptive area is just as necessary as it was before; hence the striate area increases in size as it specialises, so that even after budding off the peristriate cortex it may regain its old dimensions, or, perhaps, we can say that the visuo-sensory area remains stationary in size, even though it is extruding elements to form the new association area (A.PE. in Fig. 26). Thus it happens that the *new* boundaries of the striate area may be in the same situation as the *old*, although the actual frontiers of the territory *homologous to the original striate area* may have been pushed far beyond this situation, the outlying part having been specialised to form the peristriate cortex (see Fig. 26).

FIG. 28.

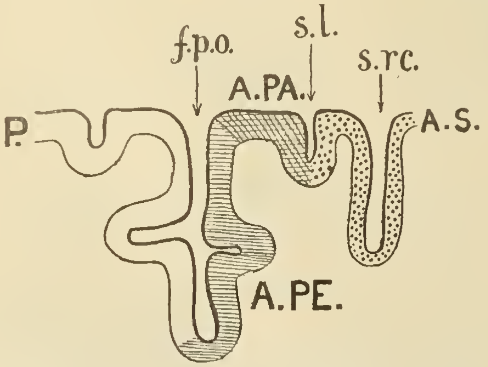


Diagram representing the actual arrangement of areas in a normal brain in a section cut in a plane analogous to *xy* in Fig. 27. *s.rc.*, The calcarine sulcus (its posterior or retro-calcarine part). *f.p.o.*, Fossa parieto-occipitalis. P., Precuneus.

The mode of packing of visual cortex may be used to illustrate several other factors which add to the difficulty of interpreting the homologies of sulci.

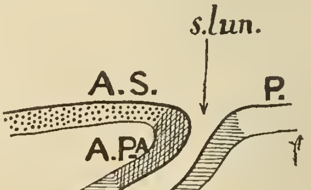
Certain mechanical factors play an important rôle in moulding the form of the brain. For example, in a normally developing human brain the posterior end of the corpus callosum is partly formed of fibres (forceps major) which are attached to the caudal poles of the hemispheres, and, as growth proceeds, the resistance to elongation of these fibres would tend to pull the corpus callosum backwards (Fig. 27, C. C.), or the cortex, to which the forceps major is fixed, forwards (F.M.). The latter cannot happen, but the former does, to some extent—i.e., the corpus callosum becomes elongated backward, and it thrusts its splenium against the rapidly expanding visual cortex. It is this mechanical process which is responsible for the formation of the great parieto-occipital depression. In acallosal human brains (Fig. 27) both the backward thrust of the corpus callosum (C. C.) and the restraining influence of the forceps major (F. M.) are lacking; the visual cortex is free to expand. No parieto-occipital fossa develops. But in its place strips of parastriate (A.PA.) and peristriate (A.PE.) cortex lie exposed upon the surface, bounded by prolongations of their dorsal limiting sulci (*s.p'.* and *s.o.*); in other words, the area (enclosed in Fig. 27 by a broken line F.P.O.) which in the normal brain becomes buckled inwards so as to engulf parts of the area parastriata, area peristriata, and the precuneus (P.)—compare Fig. 28, representing a section cut in the line corresponding to *xy* (Fig. 27) in a normal brain—in the large parieto-occipital fossa (Fig. 28, *f.po.*), here (Fig. 27) lie exposed upon the surface. Other examples might be cited of the influence of mechanical factors in moulding the Sylvian region and determining the arrangement of the furrows around the caudal pole of the hemisphere.

A curious type of furrow formation is seen in the evolution of the sulcus lunatus ("Affenspalte"). In its primitive form (many South American apes and lemurs) it is a simple sulcus (analogous to *x* in Fig. 25), forming the anterior limit of the area striata on the lateral aspect of the hemisphere. But when the affenspalte assumes its most typical form (Fig. 29) the deep fossa (S.LUN.) is composed of the invaginated para- (A.PA.) and peristriate (A.PE.) cortex, the striate area (A.S.) itself forming the surface of the operculum, which overhangs it.

I shall refer only to one other illustration of the factors which determine the form of the neopallium, but it is one which, if properly understood, will dispose of many difficulties in the interpretation of the morphology of sulci.

I have already explained that neopallial sensory areas, which are coterminous in the lowlier mammalia, may become widely separated, the one from the other, in the more highly developed orders by wide stretches of "association" area. The failure to take this fact into consideration has inspired

FIG. 29.



Horizontal section through a well-developed sulcus lunatus (*s.lun.*) in a human brain. References as in Figs. 27 and 28, except P., which is the parietal area.

many plausible but mistaken arguments concerning the homologies of sulci. Certain writers have adversely criticised my reference to the cingular sulcus in the carnivora (Fig. 24, *s.io.*) as the boundary of the gyrus cinguli, S, on the ground that it is a limiting sulcus of the area striata (Fig. 24, A.S.); but in the primitive mammal it may be the limiting sulcus of both—i.e., the line of separation between them. Even when a strip of "association area" develops (as it does in the carnivora, Fig. 25, *b*), to separate the two originally coterminous districts, they may still seem to be separated the one from the other merely by a simple furrow, *when examined superficially* (Fig. 24, *s.io.*), because the "association area" (*b*) and its two limiting sulci (Fig. 25, *l.* and *io.*) may be quite submerged in a fossa. This case is an admirable illustration, not only of one of the pitfalls to which superficial criticism is liable, but also of the manner in which a simple interterritorial boundary-sulcus may be converted into two limiting furrows, when the two territories become separated by an "association area" (*b*), which at first may be submerged, though later (Fig. 26, *b*) it comes to form part of the actual surface.

This brief account of some of the difficulties which complicate the problem of homologising sulci will have made it clear to you that we are still far from a satisfactory interpretation of the configuration of the mammalian neopallium. It will be readily understood that the account of the convolutions of the brain which I wrote for the catalogue of this Museum ten years ago was of a tentative nature, for at that time the complexity of the problems to be solved was not realised: in fact, it was that work which suggested the need for fresh methods of unravelling the complicated network of causal factors, some of which I have laid before you to-day.

I have already explained to you how misleading the inferences as to the homologies of sulci may be when based solely upon the evidence of the structure of the cortex, even when the histological survey is quite accurate and beyond reproach—a description which can be applied to no published work that I am acquainted with, except the excellent series of memoirs by Dr. K. Brodmann, published in the *Journal für Psychologie und Neurologie.* But there are certain factors which almost all those who have devoted themselves to the study of histological localisation have ignored: (1) the variability in the relationship of sulci to the neopallial areas, the growth of which is unquestionably the causal agent in their production; and (2) the rarity of the *exact* topographical coincidence of a sulcus and the edge of an area to which it is genetically related.

If, in a large series of brains, one examines the relationship of a limiting sulcus to the margin of the area which it bounds, it will be discovered that in most cases the distinctive cortical structure does not stop *precisely* at the bottom of the furrow, but in some instances goes a few millimetres beyond, and in others ceases a few millimetres before, it reaches that point. Yet the evidence afforded by the whole series can leave us in no doubt as to the causal relationship between the sulcus and the edge of the cortical area. The histologist, who laboriously reconstructs the topography of a hemisphere from a multitude of serial sections, usually can find time to examine only one or two examples of a particular species of animal; and, if he finds that a particular area extends slightly beyond, or does not quite reach, a particular sulcus, he is apt to deny the causal relationship between the two, quite forgetful of the fact that the growing cortex is a plastic material, and that the forces which mould it are apt to be applied in a diffuse manner, so that the folding does not take place with that mathematical precision which the histologist seems to expect and demand.

Thus, for example, even such a careful and painstaking investigator as Brodmann refuses to admit the identity of the dorsal segment of the sulcus centralis in the lemur's brain (the homology of which has been placed beyond all possibility of doubt by the researches of Dr. Page May, Dr. Gordon Holmes, Dr. W. H. Wilson, and myself) simply because the motor area reaches beyond it to the extent of *one millimetre in a thrice magnified plan* [17] If Dr. Brodmann expects Nature to work to a degree of accuracy within a range of one-third of a millimetre in the operations of neopallial folding, then he must renounce all idea of homologising any sulci whatsoever.

Mr. President, in these three lectures I have done little more than clear from the path some of the obstructions which stand in the way of a fuller comprehension of the mysteries of cerebral architecture; but if, in doing so, I have called attention to the value and importance of the material in one corner of your Museum I have not laboured in vain.

---

[17] K. Brodmann: Beiträge zur histologischen Lokalisation der Grosshirnrinde, Journal für Psychologie und Neurologie, 1908, p. 332 and Fig. 30

FOUR CASES OF CONGENITAL ACHOLURIC (SO-CALLED "HÆMOLYTIC") JAUNDICE IN ONE FAMILY.

By F. PARKES WEBER, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE GERMAN HOSPITAL, LONDON;

AND

G. DORNER, M.D. KÖNIGSBERG,
RESIDENT MEDICAL OFFICER TO THE HOSPITAL.

THE following examples of congenital and familial acholuric jaundice belong obviously to the same class as those recently described in England by H. P. Hawkins and L. S. Dudgeon,[1] R. Hutchison and P. N. Panton,[2] and F. J. Poynton and W. L. Scott.[3] Amongst earlier English cases those of W. Moxon,[4] Claude Wilson,[5] Sir Thomas Barlow and H. Batty Shaw,[6] J. A. Arkwright,[7] W. T. Cocking,[8] and H. A. Mason[9] (Mason's patient was, however, the only jaundiced member of her family) probably belong to the same class. So also do the cases recorded in the German language by O. Minkowski,[10] Bettmann,[11] Alois Pick,[12] H. von Krannhals,[13] Claus and Kalberlah,[14] E. Benjamin and E. Sluka,[15] and R. Pollak.[16] Here likewise belong many of the cases of congenital or family splenomegalic cholæmia described in France by A. Gilbert and his pupil P. Lereboullet,[17] Widal and Ravaut,[18] Lortat-Jacob and Sabaréanu,[19] &c.; possibly also some of the cases without clinically obvious enlargement of the spleen. Since A. Chauffard's[20] well-known work on the subject most French cases have been published under the heading Congenital or Familial "Hæmolytic Icterus."[21]

---

[1] Hawkins and Dudgeon: Quarterly Journal of Medicine, Oxford, 1909, vol. ii., p. 172. Includes many references to the literature of the subject.

[2] Hutchison and Panton: Ibid., vol. ii., p. 432.

[3] Poynton and Scott: Transactions of the Medical Society of London, 1909, vol. xxxii., p. 381. See also Poynton, THE LANCET, Jan. 15th, 1910, p. 153.

[4] Moxon's cases of hereditary jaundice were described by Charles Murchison in his book on Diseases of the Liver (third edition, 1885, p. 481), and by G. Harley (Diseases of the Liver, 1883, p. 300). The later history of the same family (including Moxon's cases) has been quite recently published by R. Hutchison and P. N. Panton (loc. cit.).

[5] Claude Wilson: Transactions of the Clinical Society of London, 1890, vol. xxiii., p. 162, and 1893, vol. xxvi., p. 163.

[6] Ibid., 1902, vol. xxxv., p. 155.

[7] J. A. Arkwright: Edinburgh Medical Journal, 1903, new series, vol. xiii., p. 52.

[8] Quarterly Medical Journal, Sheffield, 1903, vol. xi., p. 40.

[9] Ibid., 1903, vol. xi., p. 104.

[10] Minkowski: Verhandlungen des Congresses für innere Medicin, Wiesbaden, 1900, Band xviii., p. 316.

[11] Bettmann: Münchener Medicinische Wochenschrift, 1900, Band xlvii., p. 791.

[12] Alois Pick: Wiener Klinische Wochenschrift, 1903, Band xvi., p. 493.

[13] Krannhals: Deutsches Archiv für Klinische Medicin, Leipzig, 1904, Band lxxxi., p. 596.

[14] Claus and Kalberlah: Berliner Klinische Wochenschrift, 1906, Band xliii., p. 1471.

[15] Benjamin and Sluka: Ibid., 1907, Band xliv., p. 1065.

[16] Pollak: Wiener Medicinische Wochenschrift, 1908, Band lviii., p. 1489.

[17] See especially the cases collected as examples of Ictère chronique splénomégalique, by P. Lereboullet, Les Cirrhoses Biliaires, Paris, 1902, pp. 447–464.

[18] F. Widal and P. Ravaut: Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, third series, 1902, vol. xix., p. 984.

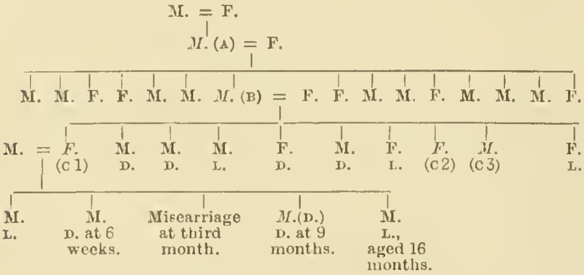
[19] L. Lortat-Jacob and G. Sabaréanu: Revue de Médecine, Paris, 1904, vol. xxiv., p. 310.

[20] See especially A. Chauffard: Pathogénie de l'Ictère Congénital de l'Adulte, Semaine Médicale, Paris, Jan. 16th, 1907, p. 25.

[21] On the whole subject of congenital and acquired hæmolytic jaundice see especially Widal, Abrami, and Brulé, Les Ictères d'Origine Hémolytique, Archives des Maladies du Cœur, &c., Paris, 1908, vol. i., pp. 193–231; Vaquez and Aubertin, Sur l'Anatomie Pathologique de l'Ictère hémolytique, ibid., 1908, vol i., pp. 609–623; Renaux and Verhoogen, Ictère Hémolytique Congénital avec Splénomégalie, Société des [illegible] Médicales et Naturales de Bruxelles, July 5th, 1909 (Presse

Our patients are: (1) a man (B), aged 53 years; (2) his married daughter (C 1), aged 32 years; (3) another daughter (C 2), aged 14 years; and (4) a son (C 3), aged 12 years. Beyond the scabies, for which they all first came under our attention, and the signs and symptoms connected with their peculiar kind of jaundice, there is little that need be said about them. They all appear fairly well nourished and normally developed in body and mind. The father (B) has a pigmented scar on his right leg from ulceration due to an injury. The boy (C 3), the least jaundiced of the four, has slight enlargement of some of his cervical lymphatic glands and a scar on the neck left by an operation on lymphatic glands. The girl (C 2), who was for a considerable time under our observation as an in-patient, occasionally during that period had slight fever (at one time up to 99° or 100° F.). In none of the patients was there any clubbing of the fingers. In all the cases, unless otherwise stated, the various examinations were carried out by Dr. Dorner.

Family history.—The father (B) of the other three patients tells us that he is one of a family of 15 children, eight of whom are still living, and that he is the only jaundiced one out of all the 15. His father (A), however, was jaundiced all his life, sometimes looking very yellow, sometimes less so. He died at the age of 70 years as a result of ulceration of the leg. The paternal grandfather and grandmother of the man (B) are said not to have been jaundiced. Of B's ten children (six living, four dead) only three—namely, our above-mentioned three patients—inherited the jaundice. Of these three, the married daughter (C 1), the eldest of his children, has had herself four children, one of whom is said to have been yellow and to have died ("anæmia") when 9 months old. In the accompanying genealogical table the italic letters indicate the affected members. M. stands for male, F. for female.



We confess that we are not quite satisfied as to the correctness of this family history, and should not be surprised to find that some of the brothers and sisters of B showed slight remittent or intermittent jaundice and a certain degree of splenomegaly.

The jaundice.—This symptom, which appears to have been congenital in the four patients, is as well marked in the skin of the body and the mucous membrane of the mouth as in the ocular conjunctiva. At present it is least noticeable in the boy (C 3), and very distinct, though not very deep, in his two sisters (C 1 and C 2),[22] and in their father (B). The degree of yellowness varies occasionally from time to time, and is apparently deeper when they catch cold. The father (B) says that he is yellower in winter than in summer, and that he feels weak and depressed during the exacerbations of the jaundice. His eldest child (C 1) says that her jaundice was increased during every pregnancy and whenever she caught cold. In none of the four cases has there been icteric pruritus or any xanthomatous change in the skin, such as is so often present in cases of chronic obstructive jaundice.

The spleen and liver.—The spleen can be felt abnormally hard below the costal margin and is decidedly enlarged in all four cases. In the father (B) and the girl (C 2) the lower edge is three fingers' breadth and in the married daughter (C 1) four fingers' breadth below the costal margin, but in the boy (C 3), although the area of the splenic dulness is distinctly in excess of the normal, the organ can only just be palpated below the ribs. The liver is slightly, if at all, enlarged. The lower edge can be felt just below the ribs in the father (B), the girl (C 2), and the boy (C 3), but not in the married daughter (C 1). There was never an attack resembling biliary colic in any of the cases, even during the exacerbations of the jaundice; and altogether there is no evidence pointing to any form of cholelithiasis, although on one occasion in the case of the father (B) during an exacerbation of the jaundice the fæces were said to be temporarily pale.

The fæces.—In the girl (C 2), whilst under observation in the hospital, the fæces were always normally coloured and very rich in urobilin (alcohol extraction, and in fresh fæces the perchloride of mercury test). So they have apparently generally been in the other patients, though on one occasion, as already stated, during an exacerbation of jaundice the father says that his motions became temporarily colourless.

The urine.—This has been examined in all four patients, and the only points to be noted are that in all of them it is of rather high colour, generally free from bilirubin but always containing abundance of urobilin (spectroscope and chemical tests) and urobilinogen. Occasionally, however, a very slight reaction for bilirubin was obtained.

Blood pressure.—The brachial systolic blood pressure in the father (B) was 115 millimetres Hg; in the married daughter (C 1) 115 millimetres Hg; in the girl (C 2) 125 millimetres Hg; and in the boy (C 3) 105 millimetres Hg.

THE BLOOD.

Colour of the blood serum.—In all four cases the blood serum was decidedly of an abnormal yellow colour and contained bile pigment (kindly tested by Mr. L. S. Dudgeon[23]), but in none of the cases could the presence of urobilin be established by spectroscopic and ordinary chemical examination (Dr. Dorner).[24]

The results of ordinary blood counts and differential counts are recorded in the accompanying tables. Microscopic examination of the fresh blood in these cases showed well-formed red cells, which, in a closed chamber, with few exceptions, retained their round contour (that is to say, did not become shrivelled and stellated or crenated in outline) for a long time; a "fresh" preparation from the girl (C 2) examined again after three days was found to show little change in the red cells, only an occasional one here and there having become crenated. For the special characteristics of the red cells, as seen in stained blood films, see the remarks in Dr. A. E. Boycott's report. Dr. Boycott kindly made blood counts (Nov. 30th, 1909) in all four patients and obtained the results expressed in Table II.

Dr. Boycott wrote that besides the details recorded in this table the most important features to note are: (1) abundant punctate basophilia in the red cells; (2) fairly frequent polychromatophilia; and (3) slight variation in shape and great variation in size of the red cells. The cells that are abnormal in size are too small. In the father (B) the ten largest cells averaged only $7 \cdot 2\mu$, the ten smallest $4 \cdot 6\mu$; in the boy (C 3) the corresponding figures were $5 \cdot 8\mu$ and $4 \cdot 1\mu$. Fig. 1 is a drawing to scale showing the outlines of the red cells in the father (B), and Fig. 2, drawn to the same scale, shows the red cell outlines in the boy (C 3). In Fig. 1 some of the cells are dotted to indicate the presence of punctate basophilia. The blood changes are most marked in the man (B), but are clear enough in the other three patients. Dr. Boycott calls attention to the high colour (denseness) of some of the red cells, a feature best marked in the boy (C 3), in whom the smallness of the red cells is specially noticeable.

The viscosity of the blood and blood serum.—This was estimated by Determann's viscosimeter[25] and the results are

---

Médicale, Paris, Sept. 25th, 1909, p. 680), and Renaux, Journal Médical de Bruxelles, 1909, No. 28, p. 440. In regard to acquired cases see also the recent German accounts by H. Strauss, Ueber erworbenen Formen des Chronischen Acholurischen Icterus mit Splenomegalie, Berliner Klinische Wochenschrift, 1906, Band xliii., p. 1590; and S. Möller, Ueber Chronischen Acholurischen Icterus mit Splenomegalie, ibid., 1908, Band xlv., p 1639; see also F. P. Weber, Acquired Chronic Acholuric Jaundice, American Journal of the Medical Sciences, 1909, vol. cxxxviii., p. 24.

[22] When C 2 was seen on Jan. 3rd, 1910, the jaundice had almost completely disappeared.

[23] According to Dudgeon bile pigment is present only in the serum of patients obviously jaundiced or in whom jaundice is just going to appear (see also later on).

[24] Dr. Dorner suggests that special chemical methods with larger quantities of blood serum might perhaps give a positive result in this respect (but see later on).

[25] See Determann, Ein einfaches ...... Blutviskosimeter, Verhandlungen des Kongresses für Innere Medicin, Wiesbaden, 1907, Band xxiv., p. 533.

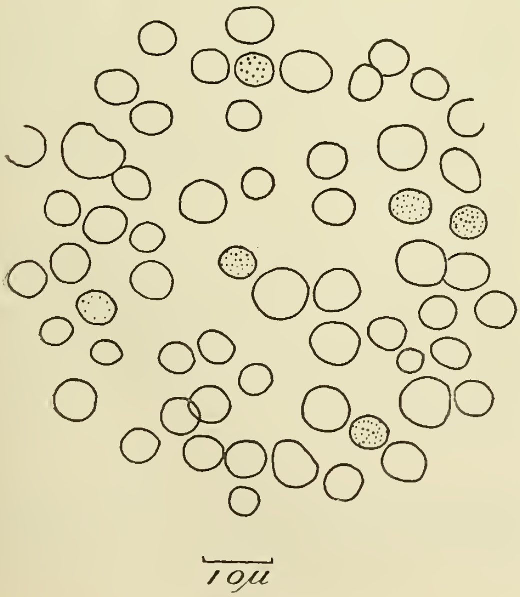
TABLE I.—*Showing the Results of Blood Counts made at the German Hospital.*

—	Red cells per cubic millimetre of blood.	Hæmoglobin per cent. (Sahli's and Haldane's methods).	Colour index.	White cells per cubic millimetre of blood.	Differential count of white cells per cent.						Remarks.
					Neutrophile polymorpho-nuclears.	Small lymphocytes.	Large lymphocytes.	Intermediates.	Eosinophiles.	Mast cells.	
Father (B), (1) Oct. 25th	4,826,660	85	0·88	14,000	70·0	21·0	5·0	—	2·0	1·0	On this occasion the nucleated red cells (normoblasts) were counted amongst the white cells and constituted 1 per cent. of the differential count.
,, (2) Nov. 8th	—	—	—	—	65·6	23·7	5·3	1·8	2·6	0·9	At this count no nucleated red cells were seen.
Married daughter (C 1), Nov. 8th	4,086,660	75	0·94	13,150	80·0	17·0	2·0	1·0	—	—	No nucleated red cells seen.
Girl (C 2), (1) Oct. 19th.	4,453,330	71	0·81	12,600	78·0	15·0	7·0	—	—	—	No nucleated red cells seen.
,, (2), after taking iron, Dec. 18th	—	85	—	—	77·0	16·3	3·3	3·0	0·4	—	Two normoblasts were seen in counting 500 white cells.
Boy (C 3), Oct. 30th	4,700,000	73	0·78	18,520	66·5	29·0	3·5	—	1·0	—	No nucleated red cells seen.

TABLE II.—*Showing the Results of Blood Counts made by Dr. A. E. Boycott on Nov. 30th, 1909.*

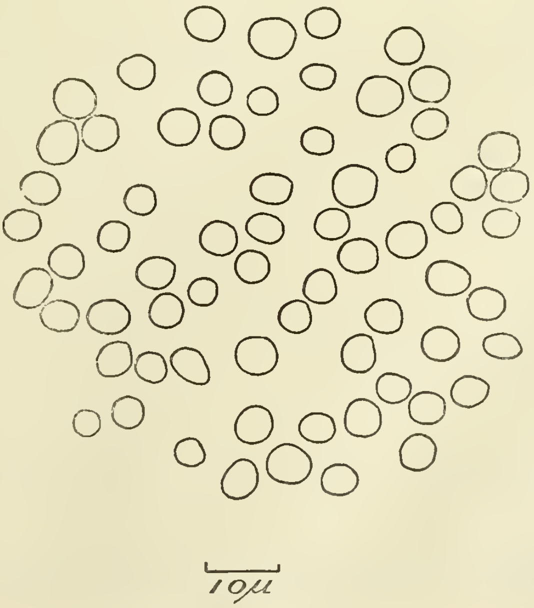
—	Red cells per cubic millimetre of blood.	Hæmoglobin per cent. (Haldane's method).	Colour index.	White cells per cubic millimetre of blood.	Differential count of 500 white cells per cent.						Neutrophile poly-morphonuclears per cubic millimetre.	Remarks.
					Neutrophile polymorpho-nuclears.	Lymphocytes.	Intermediates.	Large hyalines.	Eosinophiles.	Mast cells.		
Father (B)	3,630,000	78	1·1	8,400	70·4	14·0	8·0	3·6	2·0	2·0	5900	Two nucleated red cells seen in counting 500 white cells.
Married daughter (C 1)	3,520,000	70	1·0	4,750	78·2	13·8	2·2	1·6	2·8	1·4	3700	Two nucleated red cells seen in counting 500 white cells.
Girl (C 2)...	3,460,000	77	1·1	3,800	77·6	14·8	3·2	3·4	1·0	0	2950	Two nucleated red cells seen in counting 500 white cells. Mast cells were present, though none were seen during the count.
Boy (C 3)	3,920,000	69	0·9	10,700	65·0	23·0	6·0	3·4	2·4	0·2	6900	One neutrophile myelocyte. 3 nucleated red cells seen whilst counting 500 white cells.

FIG. 1.



Red cell outlines in the father (B).

FIG. 2.



Red cell outlines in the boy (C 3).

shown (reckoned for a temperature of 20° C.) in the following table.

TABLE III.—*Showing the Viscosity of the Blood and Blood Serum.*

—	Father (B).	Married daughter (C 1)	Girl (C 2).	Boy (C 3).
Blood	5·0	4·72	4·86	5·8
Blood serum ...	1·88	1·88	2·0	2·08

The blood viscosity appears, therefore, to be practically within normal limits.

Resistance of the blood (red cells) to hæmolysis and the salt content of the red cells.—This was tested by means of graduated saline solutions, with (*a*) ordinary blood of the patients, and (*b*) their red blood corpuscles washed in normal saline solution. The results are shown in Table IV.

TABLE IV.—*Showing the Effect of Graduated Saline Solutions in regard to Hæmolysis.*

Sodium chloride solutions per cent. in distilled water.	Father (B).		Married daughter (C 1).		Girl (C 2).		Boy (C 3).	
	(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)
0·9	0	0	0	0	0	0	—	0
0·75	0	Trace.	0	0	0	0	—	0
0·64	Trace.	Distinct.	Distinct.	Distinct.	Trace.	0	—	Distinct.
0·56	Distinct.	Almost complete.	Nearly complete.	Nearly complete.	Distinct.	Trace.	—	Nearly complete.
0·5	Almost complete.	Complete.	Complete.	Complete.	Complete.	Complete.	—	Complete.
0·45	Complete.	,,	,,	,,	,,	,,	—	,,
Date of the test	Nov. 14th.	Nov. 14th.	Nov. 14th.	Nov. 14th.	Oct. 19th.	Nov. 3rd.	—	Nov. 12th.

For comparison with these tabulated results Dr. Dorner examined the blood (the washed red cells) (1) of a normal person; (2) of a person suffering from veronal poisoning; and (3) of a person with aortic valvular disease. In all these three cases hæmolysis did not appear until the dilution of 0·45 per cent. sodium chloride was reached. It is interesting to note that the two methods (using blood and using washed red cells) gave exactly the same result in the case of the married daughter (C 1).

In our four jaundice cases Mr. L. S. Dudgeon and Dr. G. G. Butler likewise kindly tested the resistance of the blood (as blood, not the washed red cells) to saline solutions of various strengths. They found that hæmolysis commenced with a solution of 0·625 per cent. sodium chloride in distilled water and was complete with a 0·4 per cent. solution, whereas according to their experience by the method in question normal red blood corpuscles do not show hæmolysis until a solution of 0·375 per cent. sodium chloride is reached, and then very slightly only.[26]

Mr. Dudgeon found in all four cases that the patient's blood serum did not exert any hæmolytic action on the red corpuscles of a healthy individual, or (as Dr. Dorner also found) on the patient's own red corpuscles (that is to say, it had no autohæmolytic action); nor had blood serum from a normal individual any hæmolytic action on the patient's red cells. Furthermore, no hæmagglutinative action was observed on adding the patient's blood serum to a normal person's red cells, the patient's red cells to a normal person's serum, or the patient's serum to his or her own red cells.[27] The same remarks applied when blood plasma was substituted for blood serum.

Wassermann's reaction for syphilis.—This test was kindly tried by Dr. J. Henderson Smith in the case of the father (B) and the girl (C 2), and by Mr. Dudgeon (using both long and short methods) in all four patients. The result was negative in every case.

It may likewise be mentioned here for what it is worth that von Pirquet's "cuti-reaction" for tuberculosis, tried in the case of the girl (C 2), gave a positive result.

REMARKS.

There can be no doubt that our cases are examples of the condition known as congenital and familial chronic acholuric jaundice, congenital familial cholæmia, or congenital familial hæmolytic jaundice. Little is known regarding the average duration of life in affected individuals, but that the disease is not inconsistent with longevity is shown by the case of the father (A) of our patient (B), who evidently suffered from the same affection as his son and lived to the age of 70 years. Syphilis seems (in spite of Hayem's suggestion) to play no part in the etiology of the condition, and it could be practically excluded in the present cases.

The most obvious signs of the disease are chronic jaundice splenomegaly and (generally) a variable degree of anæmia. The jaundice is usually only slight and in some cases may probably be absent at times (see later on). It is never accompanied by icteric pruritus, xanthoma, or clubbing of the fingers. In many of the cases, however, occasional exacerbations occur, during which the patient sometimes complains of feeling weak and depressed. In one of our cases (the married daughter C 1) the jaundice was accentuated during her pregnancies. Cold weather or exposure to cold in some cases appears to intensify the yellow colour. In regard to exciting causes of the exacerbations of jaundice, Bettmann's case[28] was particularly interesting. The patient (a man, aged 29 years) was very decided that the exacerbations could be induced by (1) unusually large meals; (2) mental excitement; (3) excessive walking or dancing; and especially (4) exposure to cold. His jaundice was (as in our patient B) more decided in winter than in summer. Another interesting point in Bettmann's case was that during the exacerbations his blood serum was occasionally coloured with hæmoglobin and he occasionally had temporary hæmoglobinuria. It may here be remarked that in typical cases of paroxysmal hæmoglobinuria true jaundice has very rarely been known to be associated with the hæmoglobinuric attacks.

The fæces are nearly always well coloured and the urine is nearly always free from bilirubin. But occasionally, during exacerbations of the jaundice, the motions become paler than natural and the urine may contain bilirubin in addition to the excess of urobilin which is nearly always present. Except during exacerbations, the patients seem to enjoy fairly good health and can work much like average individuals of their own size and age. They are not stunted in growth like patients affected with Hanot's so-called "biliary cirrhosis" in childhood.

The liver is usually not obviously enlarged, but occasionally can be felt a little below the costal margin. In uncomplicated cases the liver appears not to be cirrhotic. A necropsy on one of Minkowski's cases[29] showed both absence of any cirrhosis of the liver and absence of any mechanical obstruction to the bile-flow. A pigment-stone, which was found in the gall-bladder, could not have caused any obstruction. In one of Claude Wilson's cases the patient died with an exacerbation of jaundice during pregnancy, but no obvious hepatic cirrhosis was discovered at the necropsy.

---

[26] Cf. Hawkins and Dudgeon: Congenital Family Cholæmia, Quarterly Journal of Medicine, loc. cit. Mr. Dudgeon thinks that, strictly speaking, these hæmolysis tests indicate rather the salt contents of the red cells than the degree of resistance of these cells to hæmolytic agents generally.

[27] For Mr. Dudgeon's methods see his preliminary report on the Presence of Hæmagglutinins, Hæmopsonins, and Hæmolysins in the Blood obtained from Infectious and Non-infectious Diseases in Man, Proceedings of the Royal Society, London, 1908, Series B, vol. lxxx., p. 531; see also his paper in vol. lxxxi. of the same series, p. 207, and his paper with Mr. H. A. F. Wilson in vol. lxxxii., p. 67.

[28] Bettmann: Loc. cit.

[29] See O. Minkowski, loc. cit.

The spleen is nearly always considerably enlarged and easily palpated; it generally does not extend downwards much beyond the umbilical level, but sometimes reaches the inguinal region. Neither liver nor spleen is ordinarily at all tender to pressure.

The blood shows characteristic changes. Bilirubin is always present in the blood serum and blood plasma (see later on). There is nearly always some anæmia (oligocythæmia), and the degree of this anæmia may vary considerably from time to time. The red cells are mostly fairly normal in shape—that is to say, there is seldom much poikilocytosis—but in size they usually vary very much more than those of normal individuals, so that there is a condition of decided "anisocytosis" present. The mean diameter of the red cells is somewhat less than that observed in normal persons, whereas in cases of chronic obstructive jaundice the mean diameter of the red cells is generally distinctly above the normal mean for healthy individuals. Polychromatophilia and generally punctate basophilia of red cells are observable to a greater or less extent, and the frequent presence of nucleated red cells (normoblasts) is characteristic. The red cells are found to undergo hæmolysis, when added to graduated weak saline solutions, more readily than do the red cells of ordinary healthy persons, and still more readily than those of individuals suffering from obstructive forms of jaundice (see later on).

In all probability persons affected with congenital acholuric jaundice ought as far as possible to be protected from great cold, especially in early life, and when decidedly anæmic should be treated by iron preparations.

In regard to the pathology of congenital acholuric jaundice (congenital family cholæmia), the disease seems, as supposed by French and other observers, to be due to a peculiar congenital abnormality or imperfect development of the bone marrow, which manifests itself by a kind of inferiority in the quality of the red blood corpuscles. These corpuscles yield more readily than those of normal persons to certain hæmolytic influences. Probably they are destroyed more rapidly than they should be by the action of even physiological hæmolytic influences. Such an abnormal fragility of red cells and the resulting excess of hæmolysis may be supposed to give rise to a chronic enlargement of the spleen, due to the great demands made on the hæmolytic functions of that organ.[30] According to this theory, the excessive hæmolysis must be also regarded as the cause of abnormally great production of bile pigment in the liver, leading to chronic jaundice and urobilinuria. Moreover, owing to the habitual excessive loss of red blood corpuscles the erythroblastic functions of the bone marrow (by a kind of "vicious circle") would be chronically more or less strained, and this would account for the frequent presence of unripe forms of red cells (nucleated red cells) in the circulating blood and likewise for the frequent presence of some anæmia (oligocythæmia) and the other blood features of the disease.

Very decided anæmia is not invariably present—that is to say, is not present at all times in every case. Indeed, by analogy with other chronic affections one is probably justified in expecting that the reaction of the erythroblastic functions of the bone marrow may occasionally be excessive, in which event an actual condition of polycythæmia would be set up in association with the chronic acholuric jaundice. In fact, Guinon, Rist, and Simon[31] have described the case of a girl, aged 10 years, with chronic acholuric jaundice of variable degree, urobilinuria, and chronic splenomegaly; transitory cyanosis and polycythæmia (6,000,000 to 7,600,000 red cells in the cubic millimetre of blood) accompanied an exacerbation of the jaundice. Mosse[32] has likewise described the case of a man, aged 58 years, suffering from acholuric jaundice (if not congenital, at least chronic), with urobilinuria and chronic splenomegaly, whose red blood cells numbered 6,750,000 to 7,825,000 in the cubic millimetre of blood.

Here we may also mention that the anæmia (that is to say, at least in acquired cases of chronic acholuric jaundice with splenomegaly[33]) may occasionally be of a very severe degree and associated with the presence of megaloblasts ("gigantoblasts" with very large nuclei and polychromatophilic cytoplasm) in the circulating blood, so as temporarily to simulate the blood picture of pernicious anæmia; the diagnosis of such cases from pernicious anæmia complicated by splenomegaly and slight jaundice may be very difficult.

It is also highly probable that in some cases of the disease jaundice (at all events, obvious jaundice) may be intermittent instead of remittent—i.e., that (for a time at least) jaundice may be apparently absent, though the splenomegaly and characteristic blood features are present.[34] Such cases might be clinically termed cases of "splenomegalic anæmia" to distinguish them (A) from forms of anæmia with splenomegaly usually classified as "splenic anæmia of adults," and (B) from cases of so-called "infantile splenic anæmia" ("anæmia pseudoleukæmica infantum" of Von Jaksch). In other words, it appears almost certain that a form of "splenomegalic anæmia" without jaundice may occur (though perhaps only temporarily) as an incomplete form (*forme fruste*) of the chronic splenomegalic acholuric jaundice of which the family of the man (B) are complete examples.[35]

The jaundice in cases of chronic acholuric jaundice (whether congenital, as in the present patients, or acquired), besides being usually very slight, differs also, as already stated, from that of chronic obstructive jaundice in not being associated with bilirubinuria, acholic fæces, icteric pruritus, or xanthoma. Chronic obstructive jaundice likewise differs from these cases in regard to hæmolysis, as estimated by the effect on the erythrocytes of graduated saline solutions of various strengths. In chronic acholuric ("hæmolytic") jaundice, hæmolysis, as estimated in this way, occurs abnormally readily; on the other hand, in chronic obstructive jaundice the erythrocytes appear unusually resistant to saline solutions.

In chronic acholuric jaundice it seems as if a little bilirubin (possibly without the other constituents of the bile) passes into the blood, scarcely ever, however, in sufficient quantity to give rise to bilirubinuria. Occasionally, however, during exacerbations of the jaundice, as already mentioned, a trace of bilirubin may be detected in the urine.

According to Gilbert, Lereboullet, and Herscher[36] the blood serum of normal individuals contains on the average 1 gramme of bilirubin in 36 litres; but according to Hawkins and Dudgeon[37] bilirubin is by no means so frequently present. Dudgeon finds it present in the blood serum only of patients obviously jaundiced or in whom obvious jaundice is about to appear. Bilirubin can always be found in the blood serum of patients with acholuric jaundice.[38]

In regard to the apparent absence of urobilin or urobilinogen from the blood serum in our present cases, Dr. Dorner suggests that special tests with larger quantities of blood serum might possibly give a positive result. On the other hand, S. Moeller has published two cases of acquired chronic acholuric jaundice (with splenomegaly) in which, though the urine was rich in urobilin, he was unable to detect the presence of any urobilin in the blood serum,[39] though he employed the method of Friedrich Müller and Gerhardt as modified by Syllaba. On the other hand, bilirubin was, as usual in such cases, present in the blood and absent in the urine.

The subjective symptoms of patients with chronic acholuric jaundice, when not very anæmic, are often very slight, or even apparently absent. Occasionally, however, there may be attacks of abdominal pain or of general depression, lethargy, or drowsiness, accompanied by temporary increase in the degree of the jaundice, sometimes also by moderate fever, and (rarely) by paleness of the fæces. All the symptoms usually tend to be more severe in the acquired cases in adults, such as the patient whom one of us showed at the Medical Society of London on Feb. 8th, 1909,[40] than in congenital and familial cases, like those in the family now more especially under consideration. It seems as if the cause of the symptoms (whatever exactly that cause may be) is more successfully resisted or neutralised in the congenital cases—that is to say, in those of them that survive to adult age—than in patients who acquire the disease in adult life.

---

[30] During attacks of paroxysmal hæmoglobinuria the spleen sometimes, and the liver probably also occasionally, become temporarily enlarged. Vide G. H. K. Macalister, Quarterly Journal of Medicine, Oxford, 1909, vol. ii., p. 387.

[31] Guinon, Rist, and Simon: Bulletins de la Société Médicale des Hôpitaux de Paris, 1904, third series, vol. xxi., p. 786.

[32] M. Mosse: Deutsche Medicinische Wochenschrift, Berlin, 1907, vol. xxxiii., p. 2175.

[33] Cf. F. P. Weber: Acquired Chronic Acholuric Jaundice, with a Blood-picture at one time resembling that of Pernicious Anæmia, American Journal of the Medical Sciences. 1909. vol. cxxxviii., p. 24.

[34] Cf. Armand-Delille and Feuillié: Un Cas d'Anémie splénomégalique avec Fragilité globulaire, Société Médicale des Hôpitaux de Paris, Feb. 2nd, 1909, and the discussion which followed the exhibition of the case. See also Chauffard and Troisier: Des Rapports de certaines Anémies splénomégaliques avec l'Ictère hémolitique congénital, Société Médicale des Hôpitaux de Paris, Feb. 19th, 1909.

[35] Cf. F. P. Weber: International Clinics, Nineteenth Series, 1909, vol. ii., p. 85.

[36] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, séance de 15 Nov., 1907.

[37] Hawkins and Dudgeon: Loc. cit., p. 172.

[38] Cf. also S. Möller, Berliner Klinische Wochenschrift, 1909, vol. xlvi., p. 2303.

[39] See S. Möller, Ueber Chronischen Acholurischen Icterus mit Splenomegalie, Berliner Klinische Wochenschrift, 1908, vol. xlv., p. 1639. Cf. also Möller, Zur Frage der Urobilinentstehung, ibid., 1909, vol. xlvi., p. 2303.

In regard to the diagnosis of congenital acholuric jaundice, the possibility of the presence of the so-called "Gaucher type" of splenomegaly may offer difficulties, as it did in the case of a boy (X), aged 14 years, whom one of us[41] showed before the Clinical Section of the Royal Society of Medicine on Feb. 12th, 1909. In many of the recorded cases of the Gaucher type of splenomegaly more than one member of the same family has been affected; the disease, moreover, is a chronic one, and is not a primary diffuse epithelioma or endothelioma of the spleen, as by some it was formerly supposed to be; in several cases a yellowish colour of the skin during life has been remarked. In the boy (X) the size of the spleen was unusually large for congenital acholuric jaundice. When later on he was kindly examined by Dr. Boycott his anæmia was of a chlorotic type, and his total blood volume, as estimated by Haldane and Lorrain Smith's carbon monoxide method,[42] was found (May, 1909) to exceed the normal for his body weight by 60 per cent.

A chlorotic type of anæmia is, however, probably not rarely associated with the congenital acholuric jaundice now under consideration, though it is, perhaps, a more constant feature in the Gaucher type of splenomegaly. In the boy (X) several points were in favour of the disease being the same as that of our present patients. His blood contained bilirubin and his urine was free from it. His fæces were well coloured. Examination of his red blood corpuscles (the mean diameter of which was rather below than above the normal standard for healthy individuals) showed hardly any poikilocytosis, but very marked anisocytosis, polychromatophilia, punctate basophilia, the presence of normoblasts (on one occasion 20 nucleated red cells were found during a count of 500 white cells), and a greater tendency to hæmolysis than that proper to normal individuals. In this connexion we would remark that a point still requiring special investigation is the condition of the blood with regard to hæmolysis in undoubted cases of the Gaucher type of splenomegaly.[43] There seems to be no abnormality in the differential count of white blood cells by which a case of splenomegaly can be recognised during life as belonging to the "Gaucher type."

We have seen the patient (X) again quite recently. He looks sallow, but at present shows hardly a trace of jaundice. His enlarged spleen reaches almost to his groin. His liver cannot be felt. His urine is pale and clear, but contains urobilin and urobilinogen in excess. The last examination of his blood (Nov. 15th, 1909) gave the following results: hæmoglobin (Sahli's method), 50 per cent.; red cells, 3,533,330 in the cubic millimetre; colour index, 0·7; white cells, 23,000 in the cubic millimetre. Examination of the red cells in stained films showed the presence of much anisocytosis but relatively little poikilocytosis (though several oval and some pear-shaped forms were seen); much polychromatophilia. There were about three normoblasts to every 100 white cells. In about half of the normoblasts the nucleus was irregularly-shaped or split up. The cytoplasm of the normoblasts was generally polychromatophilic and sometimes contained basophilic granules. The differential count of white cells showed nothing special.

---

[40] F. P. Weber: Transactions of the Medical Society of London, 1909, vol. xxxii., p. 362.

[41] F. P. Weber: Congenital Familial Splenomegaly with Chronic Acholuric Jaundice, Proceedings of the Royal Society of Medicine (Clinical Section), 1909, vol. ii., p. 117. See also F. P. Weber: Congenital Familial Splenomegaly, International Clinics, Philadelphia, Nineteenth Series, 1909, vol. ii., pp. 67–85 (regarding diagnosis of the condition, &c.).

[42] See Haldane and Smith, Journal of Physiology, London, 1900, vol. xxv., p. 331; Smith, Transactions of the Pathological Society of London, 1900, vol. li., p. 311; Smith and McKisack, ibid., 1902, vol. liii., p. 136; Douglas, Journal of Physiology, 1906, vol. xxxiii., p. 493; Boycott and Douglas, Journal of Pathology and Bacteriology, Cambridge, 1909, vol. xiii., p. 117 and p. 256, and Guy's Hospital Reports, 1908, vol. lxii., p. 157; Oerum. Deutsches Archiv für Klinische Medicin, Leipzig, 1908, vol. xciii., p. 356.

[43] On the Gaucher type of splenomegaly see especially: E. Gaucher, De l'Épithéliome primitif de la Rate. Thèse de Paris, 1882, and later writing by the same author; N. E. Brill, American Journal of the Medical Sciences, Philadelphia, 1901, vol. cxxi., p. 377; Brill. Mandlebaum, and Libman, ibid., 1905, vol. cxxix., p. 491, and 1909, vol. cxxxvii., p. 849; F. Marchand, Münchener Medicinishe Wochenschrift, 1907, vol. liv., p. 1102; F. Schlagenhaufer, Virchow's Archiv, 1907, vol. clxxxvii., p. 125; J. C. G. Ledingham, in Allbutt and Rolleston's System of Medicine, vol. v., 1909, p. 766; W. Risel, Ziegler's Beiträge zur Pathologischen Anatomie und Allgemeinen Pathologie, 1909, vol. xlvi., p. 241; P. Rettig, Berliner Klinishe Wochenschrift, 1909, Jahrg. xlvi., p. 2046; A. Plehn, Deutsche Medicinische Wochenschrift, 1909, Band xxxv., p. 1749.

NOTE ON A SIMPLE METHOD OF FIXATION OF THE COMPLEMENT IN SYPHILIS.

By J. SABRAZÈS, M.D. Bordeaux,
PROFESSEUR AGRÉGÉ, MÉDECIN DES HÔPITAUX, DIRECTOR OF THE CLINICAL LABORATORY, BORDEAUX;
AND
KENNETH ECKENSTEIN, M.B., B.S. Lond.,
LATE RESIDENT MEDICAL OFFICER TO THE FRENCH HOSPITAL, LONDON.

(From the Clinical Laboratory, Bordeaux.)

THE method of fixation of the complement in syphilis, as indicated by Wassermann, entails too many laborious manipulations ever to come into use outside a laboratory. From time to time modifications have been introduced, but as excellent descriptions have been recently published in THE LANCET (Fleming,[1] M'Intosh[2]) we do not propose to enter into their details but to give an account of the method which we have employed and the results which have been obtained.

Hecht[3] in 1908 made use of the amboceptor and complement which exist in human serum for sheep's blood corpuscles. As antigen he employed an alcoholic extract of guinea-pig's heart. In May, 1909, Fleming[1] published an account of a simple method similar to that of Hecht, with which he has obtained good results. Margarett Stern[1] claims that such methods are superior to the original technique of Wassermann. The method which we have used is practically that of Hecht, and was communicated to us by Dr. Levaditi of the Pasteur Institute, Paris, who was kind enough to send us details of the technique which he employs.

Technique.

The following materials are required: (1) Alcoholic extract of heart muscle (antigen); (2) sheep's blood corpuscles; (3) saline solution (9 per 1000); and (4) serum to be examined.

Preparation of the antigen.—We have always used the human heart, but other observers have employed the hearts of different animals (guinea-pig, rabbit, &c.).[5] The muscle of a heart freed from fat and washed to remove all trace of blood is cut up in a mincing machine. 20 grammes are then well ground up in a mortar with absolute alcohol. The alcohol should be added gradually. When about 30 cubic centimetres have been added the volume of liquid is made up to 100 cubic centimetres, the whole transferred to a flask and well shaken. The flask is then heated on a water bath at 60° C. for two hours, left to stand at the temperature of the room for 24 hours, and the supernatant fluid then decanted.

The alcoholic extract thus prepared should be kept in a well-stoppered bottle away from the light. For use it must be diluted with saline solution; this should be done slowly and the resulting solution should be turbid. But first the proper dilution must be determined. This is done by performing the test with a known syphilitic and non-syphilitic serum. Different dilutions of the extract are used, and that dilution is chosen which will prevent hæmolysis with the syphilitic serum, but which will have no effect on the non-syphilitic one.

In connexion with the preparation of the extract, we believe that the grinding up in a mortar is most important. In two cases in which this precaution was neglected the resulting extract proved to be of little or no value. The extract will retain its fixing properties during several months.

Of four extracts made, one served us for four months and had to be diluted ten times; another, our present antigen, is diluted 25 times, and has now been in use for two months.

We obtained two of the hearts in the course of an ordinary necropsy, which in France may not take place less than 24 hours after death. The first extract was made from the heart of a child who died from pulmonary tuberculosis. The second from an individual who was shot in a street fight; although this heart was obtained within a few hours after death, it furnished an extract which had to be diluted only seven times, and which gave inconstant results. It was therefore abandoned. The third heart came from a man who had stabbed himself in the cardiac region; the fourth from a woman about 60 years of age, who died from apoplexy.

The extracts (first and fourth) which were good were those obtained from hearts extracted more than 24 hours after death; in the other two cases the medico-legal post-mortem examination took place within eight hours after death.

The *sheep's corpuscles* were obtained twice a week from the abattoir. 5 cubic centimetres of defibrinated blood are mixed with 100 cubic centimetres of saline solution and preserved in an ice chest. The flask containing the blood should be exposed to the air, and shaken from time to time in order to renew the oxygen. If any hæmolysis takes place the fluid should be pipetted off, and replaced by a fresh solution.

The *serum* may be obtained as desired, though personally we prefer to withdraw the blood from the ear. About 1 to 2 cubic centimetres will be sufficient. We collect the blood in small glass tubes, which are plugged with cotton-wool, and kept in the ice chest. The serum may be separated from the clot, and will keep longer if this is done. The serum preserves its hæmolytic power for a considerable time, though this varies with different sera. We have kept one which gave a definite reaction at the end of 10 days; on the other hand, several sera have lost their hæmolytic power at the end of two or three days.

The test.—The tubes are arranged in three rows on a stand made of plaster-of-Paris. The unit generally used is 100 cubic millimetres. The following solutions are added.

To Tube 1: 1 unit of serum, 1 unit of saline solution, 1 unit of antigen.
To Tube 2: 1 unit of serum, 2 units of antigen.
To Tube 3: 1 unit of serum, 2 units of salt solution.

The last tube acts as a control. The tubes are incubated at 37° C. for about 1½ hours One unit of sheep's corpuscles is added to each tube, and the whole returned to the incubator until hæmolysis has taken place in the control tubes. This generally occurs within 10 to 30 minutes. The tubes are then placed in the ice-chest until sedimentation of the non-hæmolysed corpuscles has taken place.

A much smaller unit may be employed, provided that the solutions are added in like proportion, but we consider that the result is more striking when the unit is 100 cubic millimetres. There is also another advantage. Should the serum be slightly hæmolysed previous to use, owing to the larger dilution which it undergoes, a result is obtained which can be read without uncertainty.

It would seem that the best time to perform the reaction is from 6 to 12 hours after the blood has been withdrawn, as this interval allows the clot to retract firmly and furnishes a clear serum.

Interpretation of the result.—A positive result is obtained when there is no hæmolysis in the first and second tube, but hæmolysis in the third tube; a negative result when hæmolysis takes place in all three tubes. A trace of hæmolysis in the first tube, provided that the second remains clear, may be taken to indicate a positive result. In cases which have been followed from the commencement of treatment we have noticed that the reaction begins to disappear in this way. Should there be complete hæmolysis in the first tube and no hæmolysis in the second we regard the result as being negative. Twenty cases have given this result. Of these, 13 were controls, 2 were persons married to syphilitics but apparently themselves not affected by the disease, 3 were cases of long-standing syphilis which had been very well treated; the other two were a case of hereditary syphilis and a suspect. Moreover, with a subject certainly non-syphilitic, and whose reaction has been tested on nine different occasions during a period of six months, the above result was obtained twice. Levaditi, however, who was kind enough to give us his opinion on this point, considers this result as doubtful.

In order to find out if digestion had any effect on the hæmolytic power of a serum we have done the reaction with a serum obtained both when fasting and after a heavy meal. Complete hæmolysis was obtained on both occasions.

Should no hæmolysis occur in the first tube but hæmolysis in the second some error has crept in and the test must be repeated. In a certain number of sera no hæmolysis will be found in all three tubes. This is due to the absence of either amboceptor or complement. Out of 338 sera examined for the first time 19 were found lacking in hæmolytic power, that is to say, 5·63 per cent. Three of these sera were over a week old at the time of employment, and if these are deducted the percentage is 4·73. In all these cases in which we have been able to repeat the reaction a definite result has been obtained on adding a fresh normal serum which had been previously tested. In ten cases, for one reason or another, we were unable to obtain a fresh supply of serum, and hence the test could not be repeated.

Results.

	Positive.		Negative.
1. Syphilis treated and untreated ...	118	....	28
2. Para-syphilis	32	....	9
3. Syphilis suspected	10	....	26
4. Supposed non-syphilitics	6*	....	212

* On a second examination two of these cases gave a negative result. A third was proved later to be probably syphilitic.

Below we give a table showing an analysis of the above results. For the sake of comparison we have added a column showing the percentages obtained in 1000 cases by Jesionek and Meirowsky[6] with the original method of Wassermann, which they published in November, 1909. Under the heading, "Secondary syphilis insufficiently treated," we have included cases which, owing to the short time they had been infected, had not yet undergone a prolonged treatment at the time of examination.

—	Positive results.	Negative results.	Percentage positive.	Percentage positive obtained by Wassermann's method.
Primary syphilis	10	5	66·6	66·6
Secondary syphilis:—				
Treated energetically ...	3	3	50·0	
Treated insufficiently ...	22 } 49	2 } 6	91·6 } 89·1	96·7
Untreated	24	1	96·0	
Tertiary or latent syphilis:—				
Well treated	7 } 44	14 } 16	33·3 } 73·3	87·5
Treated insufficiently ...	37	2	94·8	
Congenital syphilis	15	2	88·2	88·8
Tabes	7	7	50·0	52·6
General paralysis	25	2	92 5	85·7
Primary syphilis suspected ...	1	13*	7·1	
Secondary syphilis suspected	4 } 10	6 } 26	40·0 } 27·7	—
Tertiary or latent syphilis suspected	5	7	41·6	

* Under this heading are included seven cases in which the clinical diagnosis was that of "soft sore."

Non-syphilitic cases (result negative).—Enteric fever, 16; leukæmia, 4; leprosy, 1; scarlet fever, 4; Friedreich's ataxia, 1; osteitis deformans; 1; tuberculosis, 12; hydatid cyst, 4; diphtheria, 7; mental diseases, 19; various, 143.

Six observations on patients concerning whom there was no question of syphilis gave a positive reaction.

Two cases of scurvy; cod fishers, aged 45 and 19; reaction positive. The series on that occasion contained six non-syphilitic sera and one syphilitic serum, all of which reacted normally. A week later the boy gave a negative reaction, but his companion remained positive. Their reactions were repeated at the end of a fornight and three weeks, always with the same result. The older man denied all knowledge of ever having had syphilis, but on close examination admitted that on a voyage some years ago he had suffered from a rash which disappeared rapidly under treatment, which from his description was probably mercurial.

A morphinomaniac in whose personal or family history no evidence of syphilis could be obtained.

A girl; gastritis and suspected tuberculosis. No history of syphilis obtainable.

A young woman with enlarged tuberculous glands gave a positive reaction, but on two occasions later the result was negative.

Case of osteomyelitis in a youth treated surgically. His reaction was positive twice. He denied ever having had syphilis, which was not suspected.

With regard to the influence of treatment on the reaction the following cases are of interest:—

A man (hard chancre) was treated with injections of 10 centigrammes of calomel once a week. His serum was tested every week, the blood being obtained before the injection. After the fourth injection partial hæmolysis was noticed in the first tube, and after the sixth injection the reaction was negative in both tubes. Unfortunately, the patient lived in the country and was lost sight of, so that we have been unable to find out after what interval the reaction returned.

In two other cases the reaction was negative after five injections of calomel, but in one of them a positive result was obtained two months later after a suspension of treatment.

A man, with a very severe attack of syphilis. After six injections of *huile bi-iodurée* he twice gave a negative reaction. Two months later, after treatment had been suspended for 28 days, the result was positive.

A man, who began treatment one month after the appearance of the chancre. The reaction was positive. 13 injections, each of 5 centigrammes of calomel, have produced partial hæmolysis in the first tube.

A man, infected a year ago, and who has taken daily three pills each containing 1 centigramme of Hg_2I_2, gave a positive reaction after having thus taken about 450 pills.

In the case of a man infected over 20 years ago, and who recently has had cerebral symptoms, 12 injections of calomel did not succeed in causing the reaction to disappear. Several other patients treated regularly with pills of Hg_2I_2 have given positive results more than 30 years after infection.

A patient who, during 20 years, has undergone a yearly course of treatment with HgI_2 and KI, and who has symptoms of *tabes fruste* (Argyll-Robertson pupil, loss of knee-jerks), has given a negative reaction.

Several observers have published cases where energetic treatment with "grey oil" has abolished the reaction.

In view of such varying results, what conclusions may be drawn as regards treatment? It would seem that an early and energetic treatment will cause the reaction to disappear in primary and secondary syphilis. This does not imply that the disappearance is definite, and with an interruption of treatment it will almost certainly reappear. In long-standing syphilis, with or without symptoms, a positive reaction is often obtainable, especially in those cases which have been inadequately treated, and in such cases it is difficult to modify the reaction by treatment. It would seem, therefore, that if the reaction has any value as a means of regulating treatment, attempts should be made to render a positive reaction negative, and to keep it negative. Treatment with KI and pills of mercury, even when continued over long periods, would appear to be less efficacious than injections of calomel, grey oil, &c. Nevertheless, it would be rash to do more than offer a suggestion so long as the exact meaning and value of a positive or negative reaction remain unknown.

A few other cases may be mentioned.

A woman had her eye removed for a tumour of the orbit which microscopically was a melanoid sarcoma. Three months later she came to hospital on account of a fluctuating swelling of about the size of a half-crown on the forehead, and which presented the clinical aspect of a gumma. The test was done with fluid extracted by puncture of the swelling and mixed with one unit of normal fresh serum. Result positive. Her serum also gave a positive reaction. The patient gave a history of numerous miscarriages.

A man with lingual ulcer diagnosed as syphilitic. A negative result was obtained six times with different dilutions of antigen. Several weeks later the ulcer became characteristic of a neoplasm, with enlarged glands, &c.

A married woman, with enlarged cervical glands, had a deep ulcer on the tongue. Family history of tuberculosis. Syphilis was suspected, as the husband formerly had had a genital erosion. Both gave a negative reaction. A portion of the lingual ulcer after removal was found microscopically to be of a tuberculous nature.

A young woman with a clinical diagnosis of lymphosarcoma of the tonsil twice gave a positive reaction. A few weeks later she returned with marked secondary symptoms.

Cerebro-spinal fluid.

The procedure with cerebro-spinal fluid is the same as with serum, except that a unit of 150 cubic millimetres is employed. A unit (100 cubic millimetres) of fresh normal serum must be added to supply the hæmolytic system.

Results.

	Positive.	Negative.
General paralysis	8	7
Hereditary syphilis	—	5
Syphilis	—	1
Non-syphilitic	—	1
Cerebro-spinal meningitis	1	1

In those cases of general paralysis in which the serum was examined at the same time the following results were obtained. Out of 13 cases:—

In 7 cases serum and cerebro-spinal fluid both positive.
,, 4 ,, serum positive, fluid negative.
,, 1 case serum and fluid both negative.
,, 1 ,, serum negative, fluid positive.

Of the five cases of hereditary syphilis four were congenital idiots, whose parents were syphilitic; in each case the serum gave a positive reaction. The other case was an infant 2½ months old. Spirochætæ were found in the cerebro-spinal fluid.[7] The reaction was negative twice, and unfortunately we were unable to obtain the blood.

The case of syphilis which was negative was a woman suffering from dementia, and who had cutaneous gummata. The serum was positive.

The fluid in the case of cerebro-spinal meningitis, which gave a positive result, was rich in meningococci, and was obtained from a child in whom there was no reason to suspect syphilis.

The above is a *résumé* of the results obtained. Our object has been to try to find out if a simple method would give results which, for practical purposes, can be relied upon.

In conclusion, we desire to offer our thanks to Dr. Levaditi for his kind advice; to Professor W. Dubreuilh, Drs. Anglade, Lauga, and Piouffle; and to the physicians and surgeons of the hospitals in Bordeaux who have been kind enough to place their patients at our disposal.

Bibliography.—1. A Fleming: A Simple Method of Serum Diagnosis of Syphilis, THE LANCET, May 29th, 1909, p. 1512. 2. J. M'Intosh: The Sero-diagnosis of Syphilis, Ibid., p. 1515. 3. Hecht: Eine Vereinfachung der Komplement-Bindungs-Reaktion bei Syphilis, Wiener Klinische Wochenschrift, 1908, No. 50, p. 1742. 4. Margarett Stern: Eine Vereinfachung und Verfeinerung der Serodiagnostischen Syphilisreaktion, Zeitschrift für Immunitätsforschung, Orig., Band I. 10, February, 1909, p. 422. 5. C. Levaditi: Les nouveaux moyens de diagnostic de la Syphilis, Annales de Dermatologie et de Syphiligraphie, février, mai, et avril, 1909. 6. Jesionek und Meirowsky: Die praktische Bedeutung der W- N-B. Reaktion, Münchener Medizinische Wochenschrift, No. 45, 9. November, 1909, p. 2297. 7. Dupérié: Hérédo-syphilis tardive; présence du spirochète dans le liquide céphalo-rachidien, Gazette hebdomadaire des Sciences Médicales de Bordeaux, Nov. 7th, 1909.

Bordeaux.

GLARE, ITS CAUSES AND EFFECTS.[1]

BY J. HERBERT PARSONS, D.Sc. LOND., F.R.C.S. ENG.,
ASSISTANT OPHTHALMIC SURGEON, UNIVERSITY COLLEGE HOSPITAL;
ASSISTANT SURGEON, ROYAL LONDON (MOORFIELDS)
OPHTHALMIC HOSPITAL.

IT is, perhaps, scarcely necessary to define what is meant by "glare." Everyone is familiar with the uncomfortable sensation experienced when a bright light shines directly into the eyes, and we may accept this example as a sufficient indication of the meaning of the term. It is only when we begin to analyse the conditions, physical and physiological, which give rise to the discomfort that we fully realise the complexity of the task we have undertaken.

Before discussing the conditions which give cause to glare in employing artificial methods of illumination it will be well to remind ourselves of familiar examples under natural circumstances. Here the physical data at our command have been firmly established by long and patient investigation, with far greater certainty, indeed, than in the use of the relatively less complicated conditions of up-to-date artificial illumination.

We have all experienced the discomfort of glare off the sea in bright sunlight. Perhaps the discomfort has been enhanced for us by the associated pangs of *mal de mer*. Another striking example is the glare from a wet road when the rain has not long ceased and the sun has broken through the clouds somewhere in the line of vision. Glare is common in southern countries, where the sun is bright, the atmosphere clear, and the ground surface white. It is to be noted that under such circumstances glare may be experienced even when the sun is not shining directly in the line of vision; indeed, it may be actually behind the observer's back. Further, it should be noted that the glare is absent or little marked in tropical countries where the surface of the ground is covered with grass or other vegetation.

I think that these examples may afford us some clue as to the physical conditions underlying glare. Another example will put us on the track of the physiological basis of the phenomenon. If one passes from a dark room suddenly into bright sunlight glare is experienced in a peculiarly acute form. It may be several minutes before objects can be distinguished at all clearly and yet longer ere they can be viewed with comfort.

---

[1] A paper read at the opening of a debate at a meeting of the Illuminating Engineering Society at the Royal Society of Arts on Jan. 11th.

Under artificial conditions glare is experienced in an acute form when a bright light is situated almost in the line of vision between the eye and the object observed.

I will permit myself one more example taken from a pathological or abnormal condition, that of the albinos. Their hair is white or extremely pale in tint, their irides are red owing to the blood circulating in the vessels, and their eyes show rapid oscillations, a condition known as nystagmus. These people suffer much from glare, even under circumstances which cause no discomfort to normally constituted individuals. Much of their distress is alleviated by the use of tinted glasses which modify the intensity of the light which reaches their retinæ.

Since glare is essentially an uncomfortable sensation, it is clear that the fundamental point in the problem before us is physiological. The eye shows a marvellous adaptability to extremes of intensity of illumination. Under favourable conditions small print may be read easily by the feeble light of a farthing dip or in the brilliant blaze of a southern sun. Experiment has shown that the sensitiveness of the retina to impressions is enormously increased by protecting the eye from all light. If the eyes are lightly bandaged so that no pressure is exerted but light is effectually excluded, in the course of about half an hour the retina reaches its maximum sensibility; it is then possible to perceive a glimmer of light which is quite invisible under any other conditions. Exposure to light, on the other hand, causes diminution of retinal sensibility, so that a much greater degree of change of intensity of illumination is necessary to produce a conscious impression than in the former circumstances. This constant variation in the sensitiveness of the retina, which obviously subserves so useful a purpose in everyday life, is called retinal adaptation. We have seen that in dark adaptation, when the retina is extremely sensitive, bright light causes an uncomfortable or even painful sensation—in other words, glare. We must conclude, therefore, that the condition of adaptation of the retina is one of the most important factors, if not *the* most important, in the production of glare. It is not, however, the only cause, for glare may be induced by less rapid and less extreme variations in illumination than those adduced as examples.

It will have been noticed that in most of the examples of the occurrence of glare in natural circumstances it is caused by strong light reflected upwards into the eyes from the surface of the sea or ground. It would appear, therefore, that light entering the eye in such a direction is particularly prone to initiate the symptoms. In most circumstances only relatively feeble diffuse light enters the eye, for the sun or other source of light is high above the observer and the eye is protected from the direct rays by the overhanging brow and lids, to which is often added some form of artificial headgear. Light strongly reflected from below is for the most part worse than useless for visual purposes, as must have often been observed in reading books printed on highly glazed paper. This is detrimental to clear vision for two reasons. To take the example of the printed page. First, it obscures the contrast between the letters and the paper. No ink is so black that no light is reflected from it. By strongly increasing the intensity of the incident light the increase in the reflection of light from the ink is greater in proportion than the increase in the reflection from the paper, and hence the contrast which is so essential to clear vision is diminished. Secondly, many of the reflected rays impinge upon the retina in the immediate neighbourhood of the image, so that the contrast is further diminished here. Sharp definition depends largely upon the contrast between the retinal image and the surrounding area of the retina. By a physiological process which was first pointed out by Hering, and is known as spatial induction, the sensitiveness of the surrounding retina is relatively depressed, particularly at the junction of the reacting surfaces. Flooding the retina with diffuse light must necessarily depress this reciprocal action and diminish the sharpness of definition of the image.

It might be argued that glare is often caused by *excess* of contrast, as in the familiar examples of the intensely bright beams of light from a lighthouse or the acetylene lamp of a motor at night. Analysis of the conditions will, however, show, I think, that the same causes are at work here, augmented by an unusual degree of dark adaptation of the retina.

Owing to the inherent defects of the optical apparatus of the eye no retinal image is absolutely sharp; there is, therefore, a natural tendency to diffuseness of the image, no matter how perfect the eye, and spatial induction is apparently devised specially to counteract this irradiation, as it is called. Anything therefore which interferes with spatial induction must interfere seriously with clear vision.

The eye possesses an automatic protective mechanism against the influence of bright light in the iris. This acts as a diaphragm, which contracts concentrically, thus diminishing the size of the pupillary aperture, when the incident light is increased. By diminishing the aperture it also reduces spherical aberration and tends to eliminate irradiation. The range of the apparatus is not sufficiently great to abolish the evil results of intensely high illumination, as is shown by the cases of serious permanent defects of vision which follow looking at eclipses of the sun and exposure to the bright flash of a short circuit with unprotected eyes. Hence, the very *intensity* of the incident light may cause glare and even worse consequences by producing grosser changes in the retina than those which we have been considering. How these act is not yet satisfactorily explained, largely owing to the rarity of the opportunity for making anatomical examination of the eyes from suitable cases. We may conjecture that profound chemical changes occur in the visual purple and even in the structural elements leading to their destruction and loss of function. It would take me too long and lead me too far to discuss the matter fully, but if the conjecture has any basis we are naturally led on to inquire whether it is the mere *intensity* of the light which is the *causa causans* or whether it is some particular form of energy in the incident rays which brings about the disastrous result.

The incident light is always composite in character. By passing it through a prism it can be broken up into its constituent rays, revealing the coloured spectrum in all its glory. If the prism is made of quartz it may be easily demonstrated by suitable means that there are yet other rays of importance in the ultra-violet region. Since the ultra-violet rays are known to be specially potent in effecting chemical change attention would naturally be directed first to them. The eye, however, has a very efficient protective mechanism against them, at any rate so far as the retina is concerned, for they are absorbed for the most part by the crystalline lens. As you are aware, much attention is being directed to these rays at the present time, and since it is not probable that they are more than a subsidiary element at most in the causation of glare it may be well to neglect them in this connexion. Otherwise the discussion may easily transcend the limits which it would be well to put upon it from utilitarian motives. More to the point is the question whether colour or luminosity is prepotent in causing glare. Instances culled from nature and artifice alike point to the fact that colour is, if anything, beneficial in reducing the tendency to glare. The natural adaptation of the retina to red has, however, to be taken into account. In mathematical phraseology I am inclined to think that so far as the physical side is concerned glare is a function of luminosity rather than of colour. On the physiological side I opine that temporal induction (retinal adaptation) and spatial induction are the prepotent factors, the latter specifically invalidated by the direction of incidence of a superfluity of extraneous rays.

In the milder form of glare the discomfort experienced scarcely amounts to pain. It is difficult or impossible to define where one ends and the other commences. Prolonged discomfort—not in itself painful—will undoubtedly induce pain. Here the psychological factor becomes important. The bombarding of the peripheral mechanism with submaximal stimuli appears to produce an accumulative effect upon the central mechanism or brain, leading to the consciousness of pain, which is so assertive that it drowns the specific characteristics of the sensations which have originated it. In discussing a condition like glare, which leaves no permanent traces in the form of anatomical changes in the parts affected, the psychological factor cannot be neglected with impunity. Apart from the pain induced by mere summation of submaximal stimuli it is also caused in the majority of cases by the prolonged efforts to minimise the discomfort. The discomfort of even moderate glare causes screwing up of the eyes and puckering of the brows, and this prolonged muscular contraction is in itself painful. The puckering of the brow is specially liable to cause pain by squeezing the supra-orbital nerve against the frontal bone

Painful impressions induced by the stimulation of one branch of a nerve are liable to spread and be referred to other branches of the same nerve. Hence it is that pain is referred in these cases to many other areas supplied by the fifth cranial nerve, notably in the production of frontal headache.

In the more acute forms of glare, however, pain is experienced at the outset. Now we have no evidence to show that any stimulus, however powerful, can produce pain through the purely visual nerve tracts. Pain is regarded as invariably due to the stimulation of certain afferent nerves, the nerves of common sensation. The question arises, therefore, whether the pain of glare is not due to stimulation of other nerves than the retina and visual paths. There is an allied condition commonly called "photophobia." When a particle of steel or coal-dust gets into the eye there is an intense spasm of the lids accompanied by a copious flow of tears. The same phenomenon occurs in an inflammatory disease of the conjunctiva, common in children, known as phlyctenular conjunctivitis. Under such circumstances it is difficult to open the eyes at all, and it generally appears to be more difficult in bright light than in the dark, hence the term photophobia or dread of light. As a matter of fact, it is very doubtful if light plays any potent part in the production of the condition, which is therefore better termed reflex blepharospasm (spasm of the lids). Now reflex blepharospasm is undoubtedly due to excitation of the nerve endings of the fifth nerve in the cornea and conjunctiva, and although the excitation is largely if not wholly mechanical in most cases, it cannot be absolutely asserted that light is incapable of stimulating these nerve-endings. Other branches of the fifth nerve supply the iris and ciliary body, as well as the choroid which lies immediately behind the retina. Is it possible that the pain of intense glare is due to over-stimulation of these nerve endings? Although inherently improbable, it cannot be denied that the pain wholly or in part may be due to the irritation of the sensory nerves in the cornea or choroid, in the latter cases specially in the macular region where the retina is thinnest, and in the iris, here brought about perhaps by the intense constriction of the sphincter muscle of the pupil. Further investigation of this interesting problem is needed before any final conclusion can be arrived at.

In the meantime we may leave these rather esoteric conjectures and confine our attention to the more probable explanation already adduced, which at any rate accounts for the visual manifestations of glare and emphasises most clearly the conditions to be avoided.

There are many other points which I might here mention in support of my thesis, notably the penetration of light through the sclerotic, especially in albinos, the entoptic reflection of light, and so on.

With regard to the *effects* of glare they may be roughly divided into two groups—the relatively innocuous and the severe. Mere dazzling, attributable to moderately intense illumination and particularly to widespread diffusion of light over the retina, produces discomfort, which, when prolonged, eventuates in actual pain. The causes of the pain thus experienced have already been considered and are chiefly due to excessive action of an inadequate protective mechanism.

Severe results are due for the most part to the intensity of the stimulus, which may be extremely rapid in its action, as, for example, in the case of short-circuiting of a powerful electric current. Various grades may be met with in the visual defect resulting from exposure to bright light. A blurred spot or negative after image may be regarded as physiological when it is relatively transient, but with greater intensity the blurred spot persists and may even be permanent; it is then called a scotoma. With the greatest degrees of intensity the scotoma is associated at a later date with anatomical changes in the retina—pigmentation in the macular region and so on—a condition seen typically in cases of visual defect after observing eclipses of the sun with unprotected eyes. Prolonged exposure to bright light in the tropics and at sea is not infrequently followed by night blindness. These cases are of peculiar interest, since they show in a marked degree the effects of retinal exhaustion. It was shown long ago that in them if one eye is bandaged and thus protected from light during the day the night blindness is warded off as far as that eye is concerned. It is almost certain that the retinal exhaustion in these cases is due primarily to bleaching of the visual purple, which is not restored with the usual rapidity. In some cases of this kind malnutrition plays a part, but others occur without this factor. Night blindness has been known to follow a long motor drive facing the sun which was near the horizon and consequently shining directly into the driver's eyes.

Now these changes in the retinal purple are chemical in character and might be expected to be induced most readily by the most actinic rays of the spectrum—viz., the ultra-violet rays. These are known to be responsible fc: so-called "snow-blindness," but this is a superficial inflammation of the mucous membrane covering the eye and is of a completely different character.

Time will not permit me to enlarge upon the topic further, but I cannot close without expressing the hope that the consideration of this highly complex subject may result not only in a good debate—that is a foregone conclusion in the presence of so many distinguished authorities on light and its uses—but what is far more important in the stimulation to experimental research.

Queen Anne-street, W.

A CASE OF PYOPNEUMOTHORAX DUE TO AN INHALED TOOTH OR TO A PERFORATION OF A GASTRIC ULCER; DRAINAGE; RECOVERY.

By W. GIFFORD NASH, F.R.C.S. Eng.,
SURGEON TO THE BEDFORD COUNTY HOSPITAL.

THE patient was a married woman, aged 42 years, who since the death of her husband one and a half years previously had not been in good health, but there had been no definite illness. She had suffered from pain after food for some months, which she attributed to flatulence, and for two weeks had felt pain in the left shoulder. She had spent August and part of September in Jersey, and whilst there had all her teeth extracted on Sept. 1st, 1906. She returned to Bedford on Sept. 22nd, and was living on soft spoon diet. On the 27th, immediately after eating her dinner, she was seized with a very violent pain in the left hypochondriac region.

At 2.30 P.M. I saw her and found her in great pain in the region of the stomach. She was breathing very rapidly and like a person with pleurisy. No friction could be heard. The pulse was rapid and the temperature was normal. I gave her some brandy-and-water, and ordered a mixture containing bicarbonate of sodium, sal volatile, and peppermint-water to be given every hour, as I thought the attack of pain was due to acute flatulent dyspepsia. I had to go out of town and could not see her again until 8 P.M., when I found her sitting up in a chair suffering from great pain and dyspnœa; temperature 100° F. and pulse 120. I diagnosed pleuritis and gave an injection of morphia.

On Sept. 28th (second day) the morning temperature was normal, pulse 120, and respirations 40. The lower half of the left chest was tympanitic and splashing could be heard. All the signs of pneumothorax were present. The evening temperature was 101°, pulse 140, and respirations 48. The onset of pneumothorax with the history of dyspepsia made me suspect perforation of a gastric ulcer. I thought the pain in the left shoulder, felt for two weeks, might have been a referred pain of gastric origin. On the 29th the morning temperature was normal, evening temperature 101°, pulse 140, and respirations 48. There were dulness and loss of breath sounds over the lower half of the left chest and signs of air in the pleura over the upper half. On the 30th the morning temperature was normal, evening temperature 101°, pulse 140, and respirations 48. There was complete dulness of the left side of the chest. The heart's apex was displaced to the right. There were loss of vocal fremitus and resonance, and absence of breath sounds except at the extreme apex and along the side of the spine.

On Oct. 1st, the symptoms observed up to this time having shown the sudden onset of a pneumothorax, followed by a gradual effusion of fluid so as to fill up the left pleura, I determined to aspirate and did so at 10 A.M. I drew off about a pint of very offensive straw-coloured fluid with some gas. The character of this fluid showed that free drainage was necessary, so at 3 P.M. the same day I freely drained the left pleura. The fluid which escaped was stinking and yellow, with an odour of rotten eggs. I thought the nature of the fluid confirmed the idea that there was a communication with the stomach. On the 4th irrigation of the cavity twice daily with a solution of iodine was commenced. A considerable quantity of plastic lymph came away with irrigation. The fœtid odour of the wound pervaded the house. The wound progressed very well until the 31st, when the tube was removed on account of cough. It was re-inserted on Nov. 5th. On the 18th she began to expectorate offensive matter which had the same odour as that escaping from the sinus. On Dec. 4th she began to walk about her room. On the 24th there was a fresh rise of temperature, evidently due to retention of pus. On the 25th the pus coughed up had a nasty taste.

It was clear at this time that there was a cavity containing pus which either was discharged through the sinus or expectorated through the lung. If there was little pus from the sinus more was expectorated, and *vice versâ*. At the end of November when pus began to be coughed up I wrote to the medical man who had given the anæsthetic for the extraction of teeth and inquired whether it was possible for a stump to have entered the air passages. He remembered having missed a stump, which he had seen on a sponge in the mouth, but the dentist was certain that he had accounted for every stump. As the abscess continued to discharge, early in January I had the chest X-rayed. A large, dark area at the base of the lung could be seen, but nothing like the shadow of a stump. On Jan. 20th, 1907, the patient went to Jersey, to her parents' home, as we thought that the climatic conditions would be more favourable than in Bedford.

The subsequent history is best told in the following letter from Mr. A. E. Hind of Jersey, dated June 9th, 1907:—

"When the patient arrived there were yet a cavity and a sinus. Under X rays one could see a dark patch rather larger than one's fist. No part of the patch was darker than the rest. A tablespoonful of dilute formalin solution was injected into the sinus and immediately coughed up in a rather alarming manner. Dark pyogenic membrane came from the sinus from time to time and was sometimes coughed up. After keeping the drain-tube in for some time without result I injected about two teaspoonfuls of a 30 per cent. solution of peroxide of hydrogen. This resulted in a lot of pyogenic membrane being coughed up. Again the coughing was accompanied with rather alarming dyspnœa. The injection was, however, repeated daily. The material coughed up became daily whiter, till after about 14 injections only clear white froth without signs of pus or pyogenic membrane came, and the discharge from the tube ceased. The temperature became normal, and the area of dulness almost all vanished. The tube was left out at the beginning of May and the patient's condition seems almost perfect. Occasionally a little purulent matter is coughed up, but the sinus remains closed. There has been no sign of tooth stump, and I think your original diagnosis was the right one."

The patient has remained well up to the present time (January, 1910), and is now in perfect health.

Remarks.—The interest of this case depends on the cause of the pyopneumothorax, and from this point of view it is unfortunate that the cause must remain unexplained. From the patient's point of view it is a matter of congratulation that we did not get the opportunity of verifying our diagnosis.

It is evident that the gas in the pleural cavity must have come either from the air passages of the lungs or from the alimentary canal. In the first case it could be explained by a tooth stump having been inhaled 26 days before the onset of the symptoms, which, having lodged in the left bronchus, had set up an abscess in the lung, which had burst into the pleural cavity. In the second case a gastric ulcer may have perforated the diaphragm and allowed escape of stomach contents into the left pleura, causing pyopneumothorax and a local gangrene of the lung, which subsequently caused a fistulous communication with the bronchus. Both of these causes of pyopneumothorax are of extremely rare occurrence.

In favour of the cause being a tooth stump we have the history of recent tooth extraction and the suspicion of the anæsthetist that a stump was lost. There were, however, none of the usual signs of a foreign body in the bronchus, and the dentist was clear that no stump was missing. There was no dyspnœa, cough, or fœtid expectoration between the date of tooth extraction and the sudden onset of the pyopneumothorax. There was a nasty taste in the mouth, but this might have been due to discharge from the tooth sockets.

It appears from the writings of various authors and from the published cases and discussions on foreign bodies in the bronchi that they very rarely cause pyopneumothorax or empyema. The usual result is bronchiectasis, which goes on until the foreign body is coughed up or the patient dies from phthisis. An exception to this is a case related in Holmes and Hulke's "System of Surgery" (Vol. I., p. 764), where a person inhaled a set of four false teeth, and 13 years later died from acute pleurisy. The right pleural cavity contained 5 pints of pus and the teeth, which had ulcerated through the lung.

A paper on Foreign Bodies in the Bronchi was read by Mr. R. J. Godlee at the Royal Medical and Chirurgical Society on March 24th, 1896, in which he related five cases in which the foreign body had set up bronchiectasis. Again, at a discussion at the Clinical Section of the Royal Society of Medicine in October, 1908, Mr. Godlee stated that a tooth lodged in the bronchus did not get into the lung proper, such an excursion being reserved for bits of grass, corn, &c. In the paper which preceded this discussion Dr. H. Lambert Lack stated that if untreated the prognosis in these cases of foreign bodies in the bronchi is extremely unfavourable, and unless by a happy accident the foreign body is expectorated they are almost always fatal.

In favour of perforation of a gastric ulcer through the diaphragm into the left pleura were:—1. The history of dyspepsia and ill-health extending over several months. 2. Pain in the left shoulder. It is possible, however, that this might have been caused by a local inflammation of the lung around a tooth. 3. The occurrence of pyopneumothorax on the left side. A foreign body would be more likely to fall into the right bronchus. 4. The fact that there was no expectoration of pus until 50 days after the onset of the pneumothorax and 12 weeks after the tooth extraction. This suggests that the trouble arose from without and not from within the lung.

Against gastric ulcer perforating the diaphragm must be placed the extreme rarity of the occurrence. Mayo Robson has only seen it associated with subphrenic or perigastric abscess. Moynihan has never met with a case. Fenwick[1] says that direct perforation of the diaphragm by gastric ulcer is very rare and only once recorded at the London Hospital in 40 years. He quotes Biach, who found that out of 918 cases of pyopneumothorax only two were due to perforation of a gastric ulcer. Fenwick[2] also says that "perforations of the diaphragm almost invariably terminate fatally."

The symptoms of perforation of a gastric ulcer into the pleura as recorded by Fenwick are: Sudden severe pain in the left side of the chest, dyspnœa and collapse, stabbing pain on deep inspiration, friction sounds, dulness on percussion, displacement of the heart, immobility of the lower chest, absence of vocal fremitus, vocal resonance, and vesicular murmur, vomiting, and rise of temperature. If pneumothorax occurs the left side of the chest is distended, the heart is displaced, percussion is hyper-resonant, bruit d'airain is present, and metallic tinkling and succussion sound can be produced. It will be noticed that all these signs, except vomiting, were present in my case.

If the cause was an inhaled tooth it is very remarkable that there were no signs of bronchial irritation and that, when we consider the long history of months or years of cough and expectoration in most cases, in this case the first symptom was due to perforation into the pleural cavity.

Finally, as to treatment, whatever the cause, the only thing to be done was free drainage of the empyema.

Bedford.

---

[1] Ulcer of the Stomach, p. 68.

[2] Loc. cit., pp. 351 and 352.

A CASE OF NEPHROLITHOTOMY, WITH A NOTE ON THE USE OF THE URETER CATHETER.

BY JOHN CLAY, F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE; LECTURER ON REGIONAL ANATOMY, UNIVERSITY OF DURHAM.

BEFORE cutting down on any tumour in the right loin it is necessary to know the condition of the left kidney. For the tumour may prove to be a diseased kidney, for which the best treatment is removal. The following case well illustrates the value of the ureter catheter in obtaining this definite indication of the capacity of the left kidney to perform its function.

A married woman, aged 32 years, a patient of Dr. J. J. French, Waterhouses, was admitted on July 24th, 1909, complaining of a painful swelling in the right loin. She gave the following account of her illness. A month previously, on rising in the morning, she experienced a sudden and severe pain in the right loin. It extended into the right labium. The pain was paroxysmal, and at times its severity made her vomit. Micturition was painful, and at times stopped and then went on. The pain in the right side never completely left her, and was greater when she lay on that side. Walking about caused an increase in the pain.

On admission the patient was delicate in appearance and very weak. The temperature was 102° F. and the pulse 128. The right lumbar region of the abdomen was occupied by a painful and tender swelling of about the size of the fœtal head at birth. The swelling did not move with respiration. On percussion it was dull in the front, at the sides, and behind. The urine contained pus, thick and in large quantities. On July 25th the bladder was examined with Nitze's catheterising cystoscope, and by its aid a ureter catheter was passed along the left ureter and a specimen of urine obtained from the left kidney. The specimen contained a little pus but not so much as the urine from the bladder. The amount of urea was 12½ grains to the ounce.

On July 29th ether was administered by the open method. An oblique incision was made in the right lumbar region, parallel to and an inch below the last rib. The swelling was found to be the kidney, containing in its pelvis some pus and a stone. An incision was made in the pelvis of the kidney and the stone removed. As there was some tension on the pedicle the kidney was returned to its bed in the loin. The space round the kidney was drained by a tube. The patient eventually made a good recovery, but it is of interest to note that after replacing the kidney, during the days after the operation there was considerable rise of temperature from infection of the perinephric tissues. If we had been able to keep the kidney outside the wound the rise of temperature might have been avoided, but the tension on the pedicle seemed rather too great when the kidney was out of its place.

From the information the ureter catheter gave us we were enabled to be certain that the left kidney was present, and, although not perfectly healthy, was capable of secreting urine containing 12½ grains of urea to the ounce. As it was quite possible that the swelling in the loin might be the right kidney, and so much diseased as to necessitate removal, it was of high importance, before undertaking any exploratory operation, to have the above information about the left kidney. The small amount of pus in the urine obtained by the ureter catheter from the left kidney showed that some disease was present there, and that every endeavonr should be made to save the kidney of the opposite side. As the mixed urines from the bladder contained a considerable amount of pus there was a possibility if Luys's separator had been used that one of the tubes might have become blocked by the pus. The possibility of this occurring was one of the reasons which prevented my using that instrument, for when one tube—say the left—is blocked all the urine escapes from the right. This makes it appear that only the right kidney is acting, when it is exactly the reverse which is taking place. This error, which may arise in using Luys's separator, can be avoided by driving a little fluid back into the bladder and noticing when it escapes from the tube of the other side. If this is done with a tube and a funnel the septum within the bladder can be tested at the same time. The uncertainty which arises in using Luys's separator has led me to employ it less and less, but if there is no thick deposit in the urine and if the cystoscope shows the floor of the bladder to be without sacculi or other irregularities, the results obtained by the separator may be relied upon.

It is well to remember that the ureter catheter may cause slight hæmaturia or a wrong conclusion will be drawn from the presence of a little blood in the specimen obtained through its employment. The hæmorrhage is apt to occur if there is any rough surface on the catheter or if the catheter is left in the ureter over-night. For this reason, in cases of hæmaturia it is best at first not to use the ureter catheter but with the cystoscope to watch carefully the ureter openings and see from which the blood is escaping. The ureter of the other side can then be catheterised to ascertain whether the kidney on that side is good enough to do all the work.

Although there must be some danger in passing a foreign body along the ureter, yet since 1904, when I first began to use the ureter catheter, there has been no evidence of renal infection following its use in my cases. Certain precautions, I think, in a measure contributed to this good fortune. 1. Both ureters were very rarely simultaneously catheterised. If the patient and the urine have previously been thoroughly examined a sample of urine from one kidney is generally all that is required as a guide to the proper treatment. 2. The bladder was distended with oxycyanide of mercury (1 in 10,000). This greatly diminishes the possibility of living micro-organisms being carried by the ureter catheter into the ureter. Working on these lines, I am coming gradually to the conclusion that the certainty of the information which the ureter catheter gives more than compensates for the slight risk it entails.

Newcastle-upon-Tyne.

A CASE OF ACUTE CEREBRO-SPINAL MENINGITIS WITH SEVERE CHOREIFORM MOVEMENTS.

BY J. PRATT JOHNSON, M.B., B.S. LOND.,
ASSISTANT HOUSE SURGEON, PROVINCIAL HOSPITAL, PORT ELIZABETH, CAPE COLONY.

THE patient was a coloured boy, aged 15 years, who attended the out-patient department of the hospital on Jan. 20th, 1909. He complained of very severe headache and pains in the back and limbs. On the previous day he felt and looked quite well and went about his usual work as house boy. In the early morning hours of Jan. 20th he woke up crying out with pain in the head. Subsequently he walked to the hospital, a distance of about a mile, and arrived in a rather exhausted condition, looking extremely ill. With the exception of the usual infantile illnesses he had always enjoyed good health. The family history was good.

When the boy was first seen the pulse was rapid and full; the temperature was 103° F., and the tongue was covered with thick white fur. The abdomen appeared slightly distended and was tympanitic, but no tenderness or rigidity was elicited. The examination was rendered difficult on account of the extreme restlessness of the patient. Being at the height of the enteric fever season, a rather "brainy" type of that disease was suspected, although the suddenness of the onset rather contradicted such a diagnosis.

Soon after admission the patient became semi-delirions, throwing himself violently from side to side and giving vent to a peculiar wailing cry. Morphine was quite useless in quieting him, but more success followed the exhibition of bromide and chloral in small doses at frequent intervals. On Jan. 21st his temperature was normal at 10 A.M., but his general condition was decidedly worse. The pulse was almost uncountable and the heart sounds at the apex beat were such that it was impossible clearly to differentiate the first from the second sound without timing by the carotid pulse. The cardiac dulness extended to the right of the sternum. The respirations were forcible and increased in frequency, and coarse râles were audible over the front of the chest. Movement, which on the previous day could only be called restlessness, now became continued with hardly a moment's cessation. These, which can best be described as choreiform, were chiefly confined to the arms and legs. The limbs were constantly flexed and extended and in addition to this the arms were frequently thrown in a purposeless manner across the chest. The movements were so persistent that it was found necessary to bandage the feet and elbows over cotton-wool to prevent ulceration at the heels and elbows. At the same time the half-open eyelids became œdematous and the conjunctivæ injected. The left cornea was dull and slightly opaque. The pupils were fixed and unequal, the right pupil being markedly dilated. The eyes were frequently rolled from side to side and a divergent squint was present. On raising the head the neck muscles were slightly rigid, but there was no retraction. It was impossible to be definite about the knee-jerks, ankle clonus, or plantar reflex, as any attempt to elicit them was met by violent movements of the legs. Kernig's sign was not obtained. The sphincters were relaxed, the patient having incontinence of urine and fæces from the first. The stools were dark-greenish, semi-liquid, and rather offensive. There was no discharge from the nose or ears and no marked pharyngitis. The patient vomited once after a nasal feed.

As his illness occurred during the height of the enteric fever season it was at first suspected to be a case of that disease, but this surmise was soon abandoned, as all the symptoms pointed to an acute meningitis. Lumbar puncture was performed and some faintly turbid fluid which oozed out of the cannula drop by drop was collected in a sterilised test-tube. The patient was totally unconscious of the procedure.

At 10 P.M. on Jan. 21st he had a rigor and his temperature rose from normal to 103·2° F., subsequently falling to 101·8° after careful sponging. At 2 A.M. on Jan. 22nd his temperature was 104·4°, again being reduced by sponging to 100·2°. By this time the pulse had become very feeble, rapid, and irregular, and the breathing was slightly stertorous, rapid, and laboured, the mouth being kept half open. At 2 P.M. his temperature rose to 106° and he died shortly afterwards. Taking as the onset of the illness the time when he first complained of symptoms the duration of the illness was about 60 hours.

Necropsy.—At the post-mortem examination the brain was found to be very soft and was slightly lacerated during removal. The dura mater was bound down by fairly firm adhesions to the underlying cortex over a circular area about four inches in diameter, the centre of which corresponded roughly with the mid-point of the longitudinal fissure. The adhesions, although fairly firm, were quite recent. Pus was found along the larger blood-vessels and in the sulci of the convex surface of the brain. There was no actual pus on the summits of the convolutions, but here the pia mater was very injected and had a dull filmy appearance. The injection and presence of pus were most marked over the area corresponding to the adherent dura mater, which included the upper half of the Rolandic area on both sides. It is thought that this condition explains the severe choreiform movements of the arms and legs which were a remarkable feature in the case.

The cerebral veins were very distended, being about three times their normal size. A small amount of greenish-yellow pus was found at the base of the brain, in the fissures and along the blood-vessels. On opening up the lateral ventricles they were seen to be markedly dilated, but only a small amount of turbid fluid was found, this no doubt being explained by the diffluent state of the brain and injury on removal. No abscesses were found in the brain. Some of the pus was removed on a sterilised platinum needle and a film made. On examination of the spinal cord no actual pus was found, but the posterior spinal veins were extremely engorged and the pia mater was injected. On removal the cord was found bound down by many recent adhesions.

The lungs were partially aerated throughout; there was no tubercle. On section frothy serum oozed out of the cut surface. There were recent pleural adhesions on both sides. The only other pathological changes were softness and flabbiness of the heart, a pulpy condition of the spleen, which, however, was of normal size, and a mottling of the liver due to irregular yellow patches, which were not raised. On section these patches were seen to be clearly marked off and appeared to be areas of fatty degeneration.

In the fluid obtained, as already mentioned, by lumbar puncture the cellular elements consisted of a few lymphocytes and a large number of polymorphonuclears. Several deeply stained diplococci were found for the most part lying in the faintly stained protoplasm of the polynuclears in groups of from one to four pairs of cocci, although diplococci were also found lying free. Immediately on the fluid being collected a sloped agar tube was inoculated with some of it and incubated at 37° C. In 48 hours minute glistening transparent colonies were visible on the surface of the agar. As growth proceeded the colonies remained separate and disc-like, losing somewhat their transparency and becoming of a faint yellow tinge. Stroke and stab subcultures in agar were made but no growth was obtained. On examining films prepared from the culture it was found that the diplococcus was present in pure culture. The organism stained readily with methylene blue and carbol fuchsin, but was definitely Gram-negative. The organism showed in culture the same appearance as in the cerebro-spinal fluid with the exception that in the former tetrad formation was common. Involution forms were also present, some of the cocci appearing swollen, while others were elongated, giving the diplococcus the appearance of a bacillus with a gap in the centre. On special staining for capsules the edges of the cocci appeared quite sharp and distinct and there was no sign of a capsule. The organism present was considered to be Weichselbaum's diplococcus intracellularis meningitidis.

For permission to publish these notes I am indebted to Dr. Tennyson Oates.

Port Elizabeth.

TWELVE SUCCESSIVE CASES OF PERFORATION OF THE STOMACH OR DUODENUM, WITH ELEVEN RECOVERIES.

BY T. CARWARDINE, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE BRISTOL ROYAL INFIRMARY.

IT is less than thirty years since the first operation for perforated gastric ulcer was performed by Mikulicz, and less than twenty years since the first successful operation was done by Kriege. To-day there are many surgeons who can record series of cases with recoveries of 50 per cent. or more. This important advance is largely due to accuracy of diagnosis and early operation, but not entirely so; for with improved technique, and by adopting measures to prevent the more lethal complications, one gets into the habit of regarding the outlook in a hopeful way.

Personally, I attach great importance to rapid operation, the avoidance of irrigation of the peritoneum, and free drainage on lines already laid down,[1] followed by elevation of the patient's body, early feeding by the mouth, and the administration of continuous saline solution per rectum immediately after operation. Inasmuch as subphrenic abscess and empyema are frequent remote causes of death, I would emphasise that it should be the rule to drain the right and left subphrenic regions in every case of perforated gastric or duodenal ulcer with extravasation, as well as the suprapubic region. This matter was dealt with more fully in the paper referred to.

In the light of present experience it is interesting to refer to the opinions of surgeons expressed 15 years ago at the annual meeting of the British Medical Association held in Bristol, when the subject of perforations of the stomach and duodenum was discussed, and up to which time only half a dozen successful cases had been recorded. They were all agreed that: 1. The surgeon should postpone operation until any initial shock had passed off. 2. The abdominal cavity should be freely irrigated, "gone over in a methodical method" with "gallons of water at a temperature of 112°." 3. Feeding by the mouth should be avoided afterwards, even for as long as a week. The necessity for all these stipulations has been falsified, and they may now be regarded as all harmful. Such is the change in opinion, practice, and results within a few years.

---

[1] Brit. Med. Jour., 1907, vol. ii., p. 1565.

Table of Cases.

(All the perforations were sutured, some also reinforced by grafts. Gastro-enterostomy was performed in 4 cases—2 simultaneously, 2 later.)

No.	Sex and age.	Duration in hours.	Position.	Result.	Drainage, &c.
1	M., 27	8	D., a.	R.	Right lumbar.
2	M., 45	4½	C., p.	R.	Multiple.
3	F., 22	12	P., a.	R.	Multiple; gastro-jejunostomy.
4	F., 19	4½	C., a.	R.	Multiple.
5	F., 21	5	P., a.	R.	Pyloroplasty through ulcer.
6	F., 27	6	D.	R.	Multiple.
7	M., 64	5	C., a.	Died.	,,
8	M., 35	4½	P., a.	R.	Multiple; gastro-jejunostomy.
9	M., 32	2	P., a.	R.	Multiple; gastro-jejunostomy six months later.
10	M., 65	Few.	P., a.	R.	No drainage; gastro-jejunostomy.
11	F., 25	18	C., a.	R.	Multiple.
12	F., 44	7½	D., a.	R.	,,

P. = Pylorus. C. = Cardiac end. D. = Duodenum. a. = anterior. p. = posterior.

Clifton, Bristol.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Jan. 14th with Mr. A. PEARCE GOULD in the chair.

Mr. J. E. ADAMS showed a case of Thoracoplasty for very large empyema. The patient was a male, aged 23 years, who was admitted to St. Thomas's Hospital under the care of Dr. T. D. Acland, on May 29th, 1908, with three weeks' history of illness. There were signs of pleural effusion occupying the whole of the left side of the chest and displacing the heart to the right so that its pulsation extended from the right margin of the sternum to the mid-axillary line. Aspiration gave exit to seven pints of greenish-yellow, sweet-smelling pus. A few hours later two inches of the seventh rib were resected, and three pints more of pus escaped, and a quantity of thick fibrin was removed. A rubber drainage-tube was left in the wound. A pure culture of the pneumococcus was obtained from the pus, and the patient was treated with a stock pneumococcic vaccine. Three weeks later the discharge was slight, but there was very little evidence of expansion of the lung. The heart was still displaced far beyond the right border of the sternum. A second operation was performed, the patient being placed on the right side with the left arm drawn across the chest. A long incision parallel to the vertebral border of the scapula and one inch behind it, terminating in the original wound, was made. Large portions of the sixth to the ninth ribs, together with the intercostal muscles and the parietal pleura, were removed. The superficial muscles divided by the primary incision were freed from overlying skin and the lower muscle-flap pulled over the tenth rib and sutured with catgut to the diaphragm and the base of shrunken lung. The scapula was pushed into the pleural cavity and the muscles attached to its vertebral border were secured to the lower part of the lung with catgut stitches. In 10 weeks healing was complete. The lung expanded rapidly, and the heart returned to its normal position. 18 months after operation the left lung was expanded from the apex to the upper border of the ninth rib; the deformity of the chest consisted only in a slight convexity of the spine on the side of the lesion, and the general health was excellent.—Mr. PEARCE GOULD said that an interesting point about thoracoplasty was the varying amount of deformity resulting due to causes which he could not explain.—Mr. C. H. FAGGE believed that the results in the present day of the operation of thoracoplasty were not better than they were 25 years ago.—Professor OSLER said he did not agree with Mr. Fagge. He (Professor Osler) was brought up in the days when cases of empyema did not go to the surgeon, they went to the post-mortem room. Nowadays the physicians diagnosed the cases early and the patients were transferred to the surgeon. One important reason why empyema cases did not do well was that the surgeon was called in, operated, and then did not see the case again.—Mr. A. E. BARKER considered that the good result was due to the operative treatment being carried out early. In the case of children the expansion of the lung in cases of the kind was common after evacuation, whereas in adults there was a very different story.—Mr. ADAMS, replying to a question put by Professor Osler, said that pulmonary gymnastics had not been applied in the case.

Mr. HEATON C. HOWARD showed a case of Stricture of the Rectum treated by injections of Fibrolysin which were given about three times a week. He considered that there had been arrest of the growth of the fibrous tissue and that a certain amount of absorption had taken place with lessening of the pain which had been severe.—Dr. LEONARD WILLIAMS described a case of sciatica which had been successfully treated by fibrolysin, and Mr. A. CARLESS said he had seen a case of Dupuytren's contraction in which he had given iodolysin by the mouth with the result that after six months the fingers were much more moveable.—Mr. HERBERT TILLEY said it had been suggested that fibrolysin should be administered in cases of so-called dry catarrh of the ear, and extraordinary results had been reported to have been obtained in these peculiarly intractable cases, but it must be noted that these great successes occurred in the dark regions of the body not visible to the eye. He asked if, in the case treated by Mr. Carless, there had been any recurrence.—Mr. CARLESS replied that if there had been any recurrence he would most certainly have seen the case.—Mr. BARKER could not say he had seen any advantage in the use of fibrolysin, though he had noticed one or two disadvantages.

Cases were also shown by Mr. TILLEY, Mr. SOMERVILLE HASTINGS, Dr. F. PARKES WEBER, Dr. H. MORLEY FLETCHER, and Dr. W. ESSEX WYNTER.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Jan. 7th, Dr. DUNDAS GRANT, the President, being in the chair.

Dr. G. C. CATHCART showed a case of Occlusion of the Nostril by Deflection of the Septum in a girl aged 7 years.

Dr. ANDREW WYLIE showed a man, aged 32 years, with Ulceration of the Right Tonsil and Pillars of the Fauces; the condition was believed to be tuberculous; the apices of both lungs were affected.

Dr. WATSON WILLIAMS showed a case of Laryngeal New Growth for Diagnosis. The patient, who was a man, aged 63 years, had been complaining of cough, expectoration of phlegm, and hoarseness for two years. Examination of the larynx revealed a pink, irregular, nodulated neoplasm involving the left arytenoid eminence and the left ventricular band of the posterior surface of the left side of the epiglottis, extending to the glosso-epiglottic fold. It projected over the glottis so as completely to conceal the greater part of the left vocal cord. Both cords moved freely on phonation. Two small, hard, moveable glands were felt behind and above the angle of the jaw on the left side of the neck. The condition had not altered much, nor had the man's general health suffered, since the first observation two years ago. The opinion of the meeting was in favour of slow-forming malignant disease not calling for operation.

Mr. CHICHELE NOURSE showed a case of Endothelioma of the Ethmoid in a woman aged 29 years. The right nostril was blocked by a smooth red swelling, which seemed to be the much enlarged inferior turbinal body. At an operation performed on Dec. 16th, 1909, the antrum was found to contain polypi, and had a thick degenerated lining which was easily detached from the bone, leaving a roughened surface. A pedunculated growth of the size of a small walnut projected downwards into the nasal cavity from the anterior part of the ethmoid. Microscopic sections of this growth showed typical endothelioma. The upper part of the nasal cavity was healthy.

Dr. E. A. PETERS showed a case of Bands between the Eustachian Tube and the Pharynx in a woman aged 29 years. Chronic otitis media existed on both sides. An operation for adenoids had been carried out at the Evelina Hospital 18 years ago. It was undecided to what extent the bands were natural or post-operative.

Dr. DAN MACKENZIE showed a case of General Infiltration of the Larynx, probably syphilitic, in a woman aged 44 years. Hoarseness and occasional loss of voice had existed for the last 19 months, with paroxysms of dyspnœa. She had improved under iodide of potassium.

The PRESIDENT showed a case of Destructive Ulceration of the Hard and Soft Palate in a young male adult, with exfoliation of a large mesial sequestrum, apparently of specific origin, in a tuberculous subject.

The PRESIDENT also showed a case of Growth in the Nasopharynx in an elderly female. It was like very pale "adenoids," but much more dense in consistence, and suggestive of malignancy. Microscopical examination revealed the structure of a granuloma.

Mr. SECCOMBE HETT showed a case of Extrinsic Carcinoma of the Larynx in a man aged 65 years. He had been admitted into University College Hospital in June, 1909, having had dysphagia for six weeks. Examination made by Mr. Herbert Tilley showed a large rounded greyish-white mass immediately behind the free portion of the epiglottis and completely filling the entrance to the larynx. The larynx proper was free from disease and the growth probably sprang from the region of the aryepiglottic fold or the base of the epiglottis. The whole appearance was that of an epithelioma. On June 14th, 1909, Mr. Wilfred Trotter performed an operation which consisted in laryngotomy, dissection of the anterior and posterior triangles on the right side, longitudinal pharyngotomy after resection of the ala of the thyroid and the cornu of the hyoid, and excision of the growth.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Jan. 14th, Dr. H. Cooper Pattin, the President, being in the chair, when Mrs. Sidney Webb read a paper on the Minority Report of the Royal Commission on the Poor-laws in its Relation to Public Health and the Medical Profession. At the preceding meeting of the society Dr. Major Greenwood had addressed the members upon the Reports of the Commissioners as they were viewed by Poor-law medical officers, and on April 8th Mr. C. S. Loch will deal with the Majority Report.—Mrs. Webb said that the Minority Report proposed so far as the provision for the sick was concerned to put an end to the present duplication and overlapping between the Poor-law medical service and the Public Health service; to merge both in a unified medical organisation for each county and county borough, and to place this unified service under the supervision, not of the Poor-law division of the Local Government Board, but of a newly constituted Public Health department, acting not through any Poor-law or Public Assistance authorities, but through the Public Health committees of the directly elected town or county councils. She pointed out that what the Poor-law medical service was instituted for, what it still aimed at, and what it secured, was the diminution of individual suffering. It did nothing, and by its very nature could do nothing, to prevent the occurrence of disease. The Public Health medical officer, on the other hand, could deal with the case in its incipient stage irrespective of whether the patient was or was not too ill to go to work. Above all, there was an important difference between the Poor-law and Public Health departments in the psychological reaction. The irony of the Poor-law medical service was that the better it became the more harm it did to the character of those whom it sought to benefit. For every increase in its efficiency was a standing temptation to men and women to become destitute, or to pretend to do so, in order to qualify for the treatment which the State provided only for the most thriftless or the most unfortunate of the working classes. The Poor-law medical service could do nothing to induce a person who was just beginning to go down in health to adopt those habits of personal hygiene which alone would prevent him from becoming ill, and therefore becoming destitute. It was known from actual experience that the Public Health service in its relation to sickness, instead of having a pauperising effect positively promoted physical self-control, stimulated self-maintenance, and increased the consciousness of parental responsibility. The Minority Report proposed that the whole responsibility for enforcing parental obligations, preventing neglect, and ensuring the necessary minimum of provision for maternity and infant nurture up to school age should be placed upon the local health authority, which would combine for this purpose the present scattered services of birth notification, infant visitation, midwifery supervision, the milk depôt and school for mothers, and the control over abortifacients. It proposed to take the sick person altogether out of the Poor-law and to make the Public Health department exactly as responsible for the treatment of all cases of tuberculosis, cancer, and rheumatism that would otherwise go untreated as it was to-day for small-pox and typhoid fever. The recommendation of the Minority Report was for the establishment of a unified medical service in each county or borough of sufficient size under the direction of the public health committee of the council, having the necessary staff of whole-time salaried medical officers, including clinicians as well as sanitarians, institution superintendents as well as domiciliary practitioners, empowered to give domiciliary treatment and to make the necessary provision for home aliment and nursing wherever domiciliary treatment was judged expedient, the whole work being under the national supervision of a separate Public Health department in London, administering a grant in aid of public health expenditure and in substitution of the existing grants in aid to the boards of guardians of not less than five millions sterling. —In the discussion which followed there was a very general agreement with the main principles laid down by Mrs. Webb. Dr. J. H. H. Manley feared that Mrs. Webb thought that medical officers of health were capable of doing more than they were able, and he would view with concern their return to curative medicine.—Dr. George Reid pointed out that this was not intended, but that they should supervise the work of the clinicians.—Mr. F. E. Fremantle could not imagine county councils taking over the new work as they were at present constituted, and he thought that there should be a new body formed analogous to the education committee.—Dr. John Robertson considered that the initiative of the Poor-law medical officers had been crippled in every direction and the reason that the Public Health service was superior to the Poor-law service was because the latter had been sapped of its vitality by the central authority.—Dr. H. Meredith Richards pointed out that many cases of sickness were not considered serious by the individual though they might be very serious indeed from the point of view of the State.—Dr. William Butler urged that many persons were deterred from seeking medical aid owing to the dread of having to pay for the treatment offered; for this reason any treatment to be successful must be compulsory.—Dr. Sidney Davies considered that an actual economy would result in the early treatment of disease.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 14th, Mr. C. Gordon Watson, the President, being in the chair.—Mr. W. Girling Ball read a paper on the Use of Vaccines in Acute Streptococcal Infections. He said that a correct clinical diagnosis was the first point of importance in all cases of acute streptococcal infection. The next point was the bacteriological diagnosis, for bacteria were the initial cause of by far the larger proportion of diseases. Streptococci were responsible for the diffuse and spreading inflammatory processes which affected the skin, for the diffuse variety of cellulitis, for the larger proportion of cases of puerperal sepsis, for lateral sinus thrombosis, for general peritonitis due to a perforation of the appendix, and for acute tonsillitis. In laboratory diagnosis cultivations in all cases should be made from three situations—namely, (1) from the initial lesion of the infection; (2) from any secondary foci that might be found; and (3) from the circulating blood stream. In all cases film and cultural preparations should be made, and if a mixture of micro-organisms was found these should be separated from each other, for it was only from pure cultures that vaccines should be prepared. Stock vaccines, except in very few circumstances, should never be used in acute streptococcal infections. As regards dose, in order to produce a good effect in a case in which it was possible that the resistance of the tissues might be so diminished as to give rise to a general infection, it was desirable to introduce so small a dose of vaccine as would be sufficient to produce a reaction with a minimum of negative phase—in fact, no negative phase at all, but rather a positive phase, and to stimulate a summation of these without an intermediate lowering of the immunising powers. Mr. Ball then described in detail the results which had followed the inoculation of vaccines into the tissues of patients suffering from various acute streptococcal infections. As the result of extended investigation he had arrived at the following conclusions: 1. Vaccine-therapy was a useful adjuvant to surgical methods in cases of streptococcal bacteriæmia. 2. In cases where no further surgical methods could be used to relieve the condition of the patient a vaccine might prove of considerable value. 3. Vaccines might do good in conditions in which antistreptococcus serum had failed. 4. Autogenous vaccines were the ideal agents for treatment, but where such could not be obtained a vaccine prepared from a stock micro-organism, or a mixture of the same, could be used with advantage. Such a vaccine should be prepared from a micro-organism which was commonly known to be the cause of the particular lesion to be dealt with. 5. The more acute and the more severe the lesion and the condition of the patient the smaller should the dose of vaccine introduced be, and *vice versâ.* 6. Small doses of vaccine given frequently were more advantageous than large doses given at longer intervals. 7. The guides as to the lines of treatment varied with each case, the variations in the temperature and the general condition of the patient being the most important tests.

Reviews and Notices of Books.

Manual of Surgery. By ALEXIS THOMSON, F.R.C.S. Edin., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to the Deaconess Hospital, Edinburgh; and ALEXANDER MILES, F.R.C.S. Edin., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to Leith Hospital. Third edition, revised and enlarged, with 339 illustrations. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1909. Two volumes. Vol. I., pp. 886; Vol. II., pp. 861. Price 10*s.* 6*d.*

AT one time it was possible to speak of the surgery of the different schools of medicine: the teaching of London was not that of Edinburgh, and both of these differed from what was met with in Paris or Vienna. Though that time has gone by and the teaching of the various schools has become much more uniform, yet even in the present day differences may be detected, and therefore it is always of interest to examine the text-books which emanate from other centres of medicine than our own. This hand-book of surgery has now reached its third edition, and the authors have evidently expended much time and trouble in reducing into so small a compass all the great bulk of surgical knowledge of the present day. We have not been able to detect any important omission; even such a little used contrivance as Sauerbruch's pneumatic chamber for operations on the thorax is mentioned. The wealth of illustrations adds greatly to the value of the work, for the objects depicted have been carefully chosen, and for the most part they are peculiar to this work and have not done duty previously in any other volume. The employment of a fair-sized type necessarily has enlarged the size of the book, but its issue in two volumes to some extent makes the work more convenient, general surgery being treated in one volume and special surgery in the other.

We have nothing but praise to give to this work; and though there are many points on which difference of opinion may occur, the points are comparatively unimportant and their existence does not detract from the value of the book. We hope that the authors will permit the book to resist the very natural tendency to grow which is exhibited by all successful works. The enlargement is doubtless in part due to an increase in the extent of our knowledge, but in part it results from a wish to treat more fully some subject which has become prominent. Many a book is spoiled by being allowed to get too big, and especially in books intended for students the old proverb is more than occasionally true that a great book is a great evil. By all means let the work be kept up to date, but judicious excision of that which is no longer of importance or value might accompany with equal step the addition of that which is new. We are glad to see the appearance of a third edition and hope that in the future the work will continue to attain that success which it deserves.

The Principles of Clinical Pathology. A Text-book for Students and Physicians. By Dr. LUDOLF KREHL, Ordinary Professor and Director of the Medical Clinic in Strassburg. Authorised translation from the fourth German edition. By ALBION WALTER HEWLETT, M.D., Assistant Professor of the Principles and Practice of Medicine at the Cooper Medical College, San Francisco, California. With an introduction by WILLIAM OSLER, M.D., Regius Professor of Medicine at the University of Oxford. Second edition. London: J. B. Lippincott Company. 1909. Pp. 520. Price 21*s.* net.

Professor Krehl's book in the later German editions has been published under the title of "Pathological Physiology," but the translator has retained the title of the first edition, which is given above, because he is of opinion that the term "pathological physiology" is unfamiliar to English and American practitioners, and because it seemed desirable to emphasise that the book deals with problems which come under the notice of the clinician. In this country, however, the term "clinical pathology" has come to be used in the somewhat restricted sense of the application of laboratory and experimental methods to diagnosis. Professor Krehl's book is something more than this: it is a study of the functions of the body and of its organs under pathological conditions, so that strictly the title of pathological physiology more accurately defines its scope. Professor Osler, in a brief commendatory introduction, expresses its general character by describing it as an attempt to fill the gap between empirical and scientific medicine, disease being studied as a perversion of physiological function. To the thoughtful student and practitioner it should appeal strongly, since it endeavours to explain the phenomena of disease on scientific principles, takes nothing for granted, and points out in critical fashion where our knowledge is incomplete. Although speculation and hypothesis must of necessity be considered in regard to such complex processes as vital functions these are always presented as such and are usually critically discussed.

The first three chapters are devoted to the heart, the blood-vessels, and the blood; the fourth to a consideration of the problems of infection and immunity, the account given being readable and critical, but not prolix or lumbered with unnecessary technicalities. The problems presented in connexion with respiration and digestion are then considered in separate chapters. Nutrition and metabolism and the effect of their derangements are next dealt with. The subject of diabetes receives consideration at some length in a special chapter, in which the various forms are carefully differentiated. Gout and disturbances of purin metabolism are next discussed. In an interesting chapter on fever, its general phenomena are carefully studied and its significance is considered. The problems involved in diseases of the kidney and of the nervous system are also dealt with.

The editor states that he has not attempted a literal translation, but that he has endeavoured to maintain the spirit of the original work. He has added notes on some subjects which are enclosed in parentheses, notably in regard to blood pressure, arrhythmia, surgical shock, and hæmorrhagic pancreatitis. These notes help to increase the value of the book, and the editor is to be congratulated on the manner in which he has carried out his task. We can heartily commend the book as an interesting and suggestive work.

Text-book of Gynecological Diagnosis. By Dr. GEORG WINTER, with the collaboration of Dr. CARL RUGE. Edited by JOHN G. CLARK, M.D., Professor of Gynecology, University of Pennsylvania. After the third revised German edition. Illustrated by four full-page plates and 346 text illustrations in black and colours. London and Philadelphia: J. B. Lippincott Co. Pp. 670. Price 25*s.* net.

THIS text-book by Professor Winter and Professor Carl Ruge has a well-established reputation on the continent, and the appreciation which it has met with is shown by the fact that it has passed through three editions. Dr. Clark has therefore done English and American students a good service by translating it, and has also added to its value by his editorial notes. The book consists of three parts: the first is devoted to general diagnosis, and includes a description of all the various methods which may be employed in forming a diagnosis of a gynæcological case; the second part is concerned with the special diagnosis of the various affections of the pelvic organs, including the diagnosis of pregnancy; and the third part treats of the special causes of such general conditions as hæmorrhage, amenorrhœa, and dysmenorrhœa under the heading of analytical diagnosis.

Under the head of general diagnosis the portion dealing with the importance of the microscope in the determination of the nature of many gynæcological affections is particularly good, as is also the description given by Hunner, and quoted by the editor, of the use of Kelly's endoscope in the diagnosis and treatment of bladder affections. The normal anatomy, both macroscopic and microscopic, of the female genital organs is exceedingly detailed, and is illustrated by many excellent drawings. A good example of the manner in which the book is written is furnished by the chapter dealing with the differential diagnosis of an extra-uterine gestation. The authors where necessary quote illustrative cases to emphasise the various points laid down. A discussion on the microscopic diagnosis of pregnancy occupies some 35 pages, and is of the utmost value. The many sources of fallacy and error are shown, and the pathologist, no matter what his experience, could not fail to derive considerable help from a study of this section. In the diagnosis of prolapse of the uterus the assistance to be obtained by the use of the cystoscope is well illustrated by some coloured pictures of the appearance of the bladder in such cases. There are some good cystoscopic pictures in the sections dealing with the diagnosis of the spread of carcinoma of the cervix, and of inflammations of the bladder, with the effect upon this organ of inflammatory exudates in its neighbourhood. At the present day there is a growing tendency on the part of gynæcologists to dispense with the use of the sound, and no doubt such a tendency is a step in the right direction. At the same time it must be remembered that in the case of many pelvic affections the sound is a most important aid in coming to a correct diagnosis, and that its use, when carried out with proper antiseptic precautions, is attended with the minimum of risk. For example, in the diagnosis of some forms of fibromyomata of the uterus a positive diagnosis cannot be made without its aid.

An interesting case is recorded in which a cystic fibroid tumour of the uterus showed that very rare condition, intermittent contractions simulating pregnancy. The frequency with which the pain in cases of fibromyomata is in reality associated with inflammatory lesions is brought out in the figures quoted of 57 such cases, of which in 19 there was some inflammatory condition of a neighbouring organ. The great difficulty which may attend the diagnosis when carcinoma of the body is associated with fibromyomata of the uterus is well known. Of 11 cases quoted in only one-third did the diagnosis rest on a secure basis before operation. The difficulty in diagnosing sarcomatous changes in uterine polypi or in interstitial fibroids is still greater and naturally so, and in only one of ten cases of this degeneration was a correct diagnosis made by the authors. There is a valuable diagram on p. 324 demonstrating the changes produced in the folds of Douglas by retro-uterine and intraligamentary tumours of the ovary. Unfortunately, the folds cannot always be felt, but when they can this sign is of value. If the fold is in front of the tumour the latter occupies Douglas's pouch, while in the case of intraligamentary tumours the fold is pushed backwards and towards the median line. Considerable stress is laid on a mode of examination which we fear is still to a large extent neglected by many gynæcologists—namely, the cystoscopic examination of the bladder to determine whether it is invaded by cancer or not. In the early stages of involvement of the bladder mucosa the mucous membrane swells and forms thick parallel folds which gradually increase in height, leaving deep depressions between them, while in a more advanced stage the mucous membrane becomes œdematous and covered with vesicles, producing the appearance of a bullous œdema.

When we recollect that the chapter dealing with the microscopic diagnosis of malignant disease of the uterus, vagina, and vulva is written by Professor Carl Ruge, the creator and assiduous promoter of this method of examination, we are not surprised at its excellence. The pitfalls in the way of a correct diagnosis of cancer of the uterus from microscopic examination are very numerous and need a long and special training to avoid. How grave may be the result of such an error is apparent, and it is not sufficiently borne in mind that special experience must be needed in many cases, and that, further, the clinical findings must be carefully correlated to those obtained by microscopic examination. Although, no doubt, but little help is to be expected in the advancement of our knowledge of the ultimate causes of cancer from the histological examination of cancerous tumours, yet such examinations have lost none of their importance for the clinician; and at the present day, when the great importance of an early diagnosis of this disease is universally recognised, careful microscopic examination of small portions of tissue or of scrapings removed by an expert is of greater necessity than ever if mistakes are to be avoided.

We have indicated a few of the many good features of this work, and the translator has done good service in placing it within the reach of those English and American students who are unfamiliar with the German language. The translation on the whole has been well done, but we could wish that such words as "percutory," "vaginism," and "myxoid" had not been employed, or rather invented, by the translator. Not one of them is to be found even in the "Century Dictionary," although that work is published under the superintendence of an American professor of philology. But the original book is one of great merit and this translation should prove of value to many.

Untersuchungen über die pathologische Anatomie der Beri-Beri: Ein Beitrag zur normalen und pathologischen Anatomie des peripherischen Nervensystems. (Researches on the Pathological Anatomy of Beri-Beri: A Study of the Normal and Pathological Anatomy of the Peripheral Nervous System.) By Professor HERMANN DÜRCK, of the Pathological Institute of the University of Munich. With 58 chromolithographs, 20 photographic prints, and 4 illustrations in photo-lithography on 41 plates after the original drawings by Karl Dirr. Jena: Gustav Fischer. Pp. 176. Price 25 marks.

Professor Dürck is already well known by his writings as a careful and painstaking scientific worker in the field of pathology and anatomy. The present volume, which is remarkable for the number, beauty, and precision of its coloured illustrations, forms the eighth supplement to the "Studies of Pathological Anatomy and General Pathology," edited by L. Aschoff of Freiburg i.B., and F. Marchand of Leipsic. In the preface Professor Dürck sets out the circumstances which gave rise to his undertaking these researches on beri-beri and which led him to spend some six months or more in the East Indian Archipelago and the Malay Peninsula studying the disease clinically and collecting pathological material from fatal cases for detailed histological investigation. At the beginning of the book the author discusses shortly the etymology of the word "beri-beri," the pathological anatomy of the disease, and its etiology, passing in review the many various causes which have been at one or another time suggested as the origin of this malady. His own view is that there is no specific causative agent, but that the symptoms may arise from more than one cause.

The normal histology of the peripheral nervous system is then fully described, after which the pathological anatomy of nerve degeneration and neuritis is considered, including traumatic degeneration and regeneration, neuritis and multiple neuritis not of traumatic origin, and lastly the involvement of the spinal cord in cases of multiple neuritis. The author comes to the conclusion that the degenerations which are brought about by beri-beri in the peripheral nervous system are not specially characteristic of that disease alone, but rather that they are common to various forms of multiple neuritis arising from different causes. Professor Dürck's careful researches have resulted in a very valuable contribution to our knowledge of the histology of the peripheral nervous system in health as well as in disease. One special result of his investigations to which the author gives some prominence is that altered and degenerated nerve tissue may under certain conditions become regenerated. He contends that "so long as the organism is able with its reduced nerve filaments to maintain a *minima vita*, so long will it, if the injurious influences which gave rise to the changes be removed, be capable of complete *restitutio ad integrum*," and the whole nerve can again become conductive ; so that if a beri-beri patient be freed from the noxious cause or causes which give rise to the disease, the nervous structures can regain their normal condition and resume the exercise of their function as before. The newly formed tissue which results from the degenerative process in beri-beri is not, as was formerly supposed, connective tissue, but is in reality nervous tissue which has lost some of its differential characters. One small mistake we observed in Professor Dürck's introduction is a reference made to Dr. C. W. Daniels, whom he met in Selangor, and who is described as "now of the Liverpool School of Tropical Medicine." It is, as our readers know, the London School which claims Dr. Daniels as its present director.

LIBRARY TABLE.

Wanderings Among South Sea Savages. By H. WILFRED WALKER. London: Witherby and Co. 1909. Pp. 254. Price 7*s.* 6*d.* net.—Mr. Walker's wanderings comprised journeys in Fiji, New Guinea, the Philippines, British North Borneo, and Sarawak, so that he has gained experience of some very little known portions of the globe. His book is written in an easy pleasant style and he gives his readers much interesting information upon the manners and customs of the various tribes among whom he journeyed and dwelt. Incidentally the medical reader will come across items more particularly concerning his own subjects. Thus on p. 19 he says that he saw in Taviuni a heart of a wild pig, "which when killed was found to have lived with a broken point of a wooden spear, fully four inches in length, buried in the very centre of its heart. It had evidently lived for many years afterwards and a curious kind of growth had formed round the point." In 1902 he accompanied a punitive expedition against the Doboduras, a cannibal tribe who had been raiding another tribe, the Notus, who were nominal allies of the British Government. The former are a simple people with a preference for fresh meat. So when they take a prisoner they tie him to a post and cut pieces off as they are wanted. Hæmorrhage is prevented by a special preparation of their own manufacture. Finally, when he is nearly dead they make a large hole in the side of his head and feed on the warm raw brains. Readers of Kipling will remember Challong, the webby-footed "Orange Lord," who is mentioned in the story entitled "The Disturber of Traffic." Mr. Walker heard rumours of such a race and set out on an expedition to see them. They are called the Agai Ambu and live in a swamp up the Barigi river, and, like the founders of Venice, they appear to have taken to the swamp as a refuge from their enemies. Mr. Walker describes them as having singularly thin, flat feet, with the toes more webbed than normal, and he quotes a detailed account of them from a report made by Sir Francis Winter, the acting governor of British New Guinea. The legs of the people, says Sir Francis Winter, are disproportionately short and thin. They are very expert swimmers and "can glide through beds of reeds or rushes, or over masses of floating vegetable matter with ease." We are grateful to Mr. Walker for a very readable and instructive book.

Monthly Gleanings in a Scottish Garden. By L. H. SOUTAR. London: T. Fisher Unwin. 1909. Pp. 192. Price 6*s.* net.—*The Gardener's Companion.* By SELINA RANDOLPH. London: Mills and Boon, Limited. Pp. 156. Price 2*s.* net.—Gardening is, as we have said before now, a restful occupation, for both expectation and fulfilment are soothing. The above two books deal with gardens from different points of view. Miss Soutar takes the year month by month and gives her readers a charming series of word pictures as to the flowers and birds which inhabit her garden, a garden, by the way, which makes us envious as we read. We are rather surprised to note that she makes no mention of one flower which is the glory of many a Scottish garden, although it can only be grown with difficulty in the south-east of England—namely, the Tropæolum speciosum, with its wealth of brilliant scarlet flowers. Miss Randolph's book is severely practical and easy to follow. Should anyone wish to have a garden we recommend him to read Miss Soutar's book to see the kind of garden which is desirable, and then to study Miss Randolph's book to learn how to get it. Those of our profession who may remember the gardens of the late distinguished physicians, Dr. Vivian Poore and Dr. Lionel Beale, know well what pleasure a garden may be to a medical man.

An A B C of Nursing in Accidents and Illnesses. By E. M. CLARKE, C.O.M. Revised and corrected by P. BARNETT-BENTLIF, M.R.C.S. Eng. London: The Scientific Press, Limited. Pp. 62. Price 1*s.* net.—This little work is a curious mixture of sense and nonsense. Some of the instructions are good, but in some instances they are foolish if not harmful. As an example of the good we may instance the remarks on vaccination and hygiene. As an example of the foolish we quote the following from the account of croup: "At the first sound of the croupy cough, give the child hippo (*sic*) wine and squills, half a teaspoonful of each every half-hour till he vomits. If he gets worse, call a doctor, and put the child in a hot bath in front of the fire for five minutes; then wrap him in a warm blanket; give the hippo wine and squills every ten minutes till the doctor comes." Apart from the administration of such an extraordinary drug as "hippo wine," what is meant by half a teaspoonful of squills? The official dose of powdered squills is from one to three grains. Again, it might very well be that at least an hour might elapse before the medical man could arrive, so that the unfortunate child would have received three drachms of squill in some form or other, a presumably fatal dose in the form of the powder and highly depressing in any other form. Of the effects of "hippo wine" we confess our ignorance, but in regard to the squill Mr. Barnett-Bentlif should not have allowed such directions to pass muster.

Christian Healing. By T. FARMER HALL. London: Robert Culley. Pp. 72. Price 6*d.*—In this pamphlet Mr. Hall gives "the words and facts of the New Testament on the subject and some arguments and conclusions to be drawn from them." His main conclusion is that the gifts of healing granted to the primitive Church were only given temporarily, and of those who have studied the matter as given in the Gospel as to the words and works of our Lord he says, "While faithfully availing themselves of such means of healing as He has placed at their disposal in the knowledge and skill of their fellow men, they will confidently and trustfully leave the issues to Him." As a set off against the absurdities of so-called "Christian Science" Mr. Hall's pamphlet deserves study.

The Science Year Book, 1910. London: King, Sell, and Olding. Pp. 112 and diary. Price 5*s.*—Several alterations have been made in this, the sixth, issue of the "Science Year Book," which enhance its value as a book of reference, though it is doubtful whether the omission of the short biographical directory which formed a useful feature of previous editions can be considered an improvement. The additions to the book include a map of coming solar eclipses, details of airships and aeroplanes, and a chart of the track of Halley's comet. The usual notes, tables, and diagrams relating to astronomy, biology, chemistry, physics, meteorology, and so forth, are given, together with a short summary of the progress of science during 1909, and a glossary of recently introduced scientific terms. The diary portion of the publication, which provides a blank page for every day, has been slightly enlarged by the transference to what is called a "monthly ephemeris" of the astronomical and meteorological details which formerly were placed at the top of each page of the diary. A useful feature is a square opening in the front cover of the book which allows a monthly calendar to be seen through it. A reproduction of a photograph of Sir Archibald Geikie, President of the Royal Society, forms a frontispiece to the diary.

JOURNALS AND MAGAZINES.

Proceedings of the Royal Society of Medicine. Vol. III., No. 2. December, 1909. London: Longmans, Green, and Co. —This number opens with the Section of Anæsthetics, in which Dr. V. B. Orr contributes an interesting note, with a bibliography, on Heart Massage in Heart Failure during Anæsthesia, and is unfortunately obliged to sum up with the remark that a careful search through the recorded cases has failed to discover any instance, save one of Mr. Charles Stonham's, where massage has been successful in a case of primary anæsthetic heart failure, uncomplicated by any possible reflex shock or inhibition, although the procedure has apparently saved life when syncope has been threatened from such a cause as reflex inhibition from traction on the mesentery. The Clinical Section has a sad interest in that it contains the text of the resolution of sympathy to Mrs. Clutton passed by the members of the section on the death of the late Mr. H. H. Clutton, and also the late Dr. T. D. Savill's last contribution to clinical medicine—a note on a case of Sclerodermia of the Extremities associated with a previous and family history of Angioneurotic Œdema. Other cases are recorded by Mr. A. Carless, Mr. A. Pearce Gould, Dr. H. D. Rolleston and Dr. G. H. D. Carpenter, Dr. A. S. MacNalty, Mr. T. H. Openshaw, Mr. W. Gifford Nash, Mr. Arthur Evans, and a case of Pneumococcic Colitis with Hyperpyrexia and Severe Hæmorrhage treated by Appendicostomy, with local improvement, although the patient died from cardiac failure. The chief contribution to the Electro-Therapeutical Section is the paper by Dr. E. R. Morton on the Treatment of Nævi by Electricity, Cautery, and Refrigeration by Solid Carbon Dioxide, which has appeared in full in THE LANCET. Mr. H. G. Armstrong contributes to the Epidemiological Section a communication on the Case-incidence in Nine Epidemics of Measles at a Public School, with notes on the Pre-eruptive Symptoms. The Medical and Neurological Sections contain papers by Dr. F. Craven Moore, in association with Dr. R. L. Ferguson, on the Rôle of Fats in the Treatment of Disorders of the Stomach, and Sir William Gowers's recent Hughlings Jackson lecture on Special Sense Discharges from Organic Disease respectively. In the Obstetrical and Gynæcological Section Dr. Comyns Berkeley and Dr. Victor Bonney discuss Leucoplakic Vulvitis and its Relation to Kraurosis Vulvæ and Carcinoma Vulvæ. The Odontological Section publishes Dr. J. W. Eyre's and Dr. J. Lewin Payne's paper on the Bacteriology of Pyorrhœa Alveolaris and the Treatment of the Disease by Bacterial Vaccines. The Pathological Section is occupied by two papers, one by Mr. Raymond Johnson and Mr. T. W. P. Lawrence on a Rare Case of Retroperitoneal Teratoma connected with the Spinal Cord, and the other by Professor S. G. Shattock on the Result of Double Oöphorectomy upon the Growth of the Uterus in the Rabbit. The Therapeutical Section is devoted to a paper by Dr. D. B. Lees, of considerable practical interest, on the Physical Signs of Incipient Pulmonary Tuberculosis and its Treatment by Continuous Antiseptic Inhalations, with the Results in Thirty Cases; and a communication by Dr. H. H. Dale and Mr. G. P. Laidlaw on the Action of Apocynamarin (an active principle of Apocynum Cannabinum, an American Rhizome), and of Extract of the Infundibular Lobe of Pituitary Body as Diuretics. The Sections for the Study of Disease in Children and for Laryngology contain, as usual, a number of reports of cases exhibited at their meetings.

Edinburgh Medical Journal.—In the January number is published a paper by Dr. J. Mackie Whyte on the Study of Psychiatry in Munich, in which, among other things, he notes the attention now being paid to Wassermann's test in the diagnosis of nervous troubles, and records that "a negative blood reaction does not necessarily exclude brain syphilis, but is believed to exclude general paralysis"—a view which would seem to contradict a direct specific relation between the reaction and the causal agent of syphilis. Dr. H. M. Church records two cases of Rheumatoid Arthritis, presumably of puerperal origin; and Dr. G. A. Gordon writes on the value of accurate estimations of blood pressure. Dr. James Dundas deals with certain aspects of medical inspection of school children, and Dr. W. Brown contributes some notes on the use of curdled milk, and quotes cases illustrative of its value.

The Bristol Medico-Chirurgical Journal.—In the issue of this magazine for December is published an interesting address by Mr. James Swain on the History and Practice of Surgery in Ancient and Mediæval Times, and one by Mr. G. Munro Smith on "Vis Medicatrix Naturæ." Dr. Maurice Faure writes on the mercurial treatment of tabes dorsalis, which is now gaining ground in France; the method of choice is by injection of soluble salts of mercury. He emphasises the need for early diagnosis, and the comparatively favourable prognosis of cases thus seen and treated. Dr. Arthur Fells records three cases of pneumonia which showed such unusual complications as arthritis, nephritis, and thrombosis of the femoral vein.

The Dublin Journal of Medical Science.—In the December number Dr. Walter G. Smith deals in a presidential address with Some Relations of Physic to Physics, referring briefly to the principle of mass action and to recent discoveries in the field of rays and radiation. He notes that we now have to recognise two forms of rays—viz., streams of actual particles and electro-magnetic vibrations of the ether. Professor A. E. Mettam deals with Diseases of Animals Communicable to Man, and Dr. Henry Jellett with the Teaching of Practical Midwifery, expressing the fear that "the efforts of the General Medical Council to produce a 'levelling-up' of the teaching in England and Scotland may result in producing a 'levelling-down' in Ireland."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 13th, Mr. BUTLIN, the President, being in the chair.

Mr. H. F. WATERHOUSE was introduced and made a declaration in the terms of the oath prescribed by the Charter of 1800, and was admitted a member of the Court of Examiners.

The PRESIDENT reported the death on Dec. 25th of Professor Julius Nicolaysen of Christiania, an honorary Fellow of the College, and stated that he had written to his son, Professor Johan Nicolaysen, to express the sympathy and condolence of the Council.

The Council decided to remove from the roll of Members the name of a Member of the College who had previously been removed from the Medical Register.

The PRESIDENT reported that he had chosen Mr. A. Pearce Gould as Bradshaw Lecturer for the ensuing collegiate year, and he declared Mr. Edmund Owen to be appointed Hunterian orator for 1911.

On the motion of Mr. CLEMENT LUCAS, a committee was appointed to consider and report on the proposals for legislation on the subject of anæsthetics.

The PRESIDENT reported that Mr. Bilton Pollard's period of office on the Court of Examiners would expire on Feb. 9th, and that the vacancy thus occasioned would be filled at the ordinary meeting of the Council on Feb. 10th, Mr. Pollard being eligible for re-election.

The PRESIDENT reported that the vacancy on the Board of Examiners in Dental Surgery, occasioned by the retirement of Mr. Bernard Pitts from the Court of Examiners, would be filled at the meeting of the Council in February.

The SECRETARY reported that Mr. Edgar Jones of Great Burstead, near Brentwood, admitted a Member of the College in 1834, had recently attained the age of 100 years. The President was requested to write and congratulate him.

A letter was read from the Registrar of the General Medical Council forwarding a revised copy of the Council's recommendations in regard to dental education and examination, and calling attention to the Council's resolution of Nov. 27th, 1909, that every candidate for a Licence in Dentistry or Dental Surgery shall be required to produce a certificate that he has attended a course of instruction in the "administration of the anæsthetics usually employed in dental surgery."

It was resolved—

> That the General Medical Council be informed that the Council of this College on June 10th, 1909, adopted a regulation requiring that all candidates for the Licence in Dental Surgery of the College entering at a recognised dental hospital or school after October 1st, 1909, should be required to produce a certificate "of having attended at a recognised dental hospital and school a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery."

Two letters were read, one written by the President, after consultation with the Vice-Presidents, to the Lord President of the Privy Council, on the subject of the working of the Midwives Act, and the other received in reply.

[PRESIDENT'S LETTER TO PRIVY COUNCIL.]

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C.
15th December, 1909.

SIR,—In July, 1906, the Council of this College drew the attention of the Lord President of the Privy Council to the fact that no adequate provision had been made in the Midwives Act for the "Remuneration of Medical Men summoned on the advice of Midwives," and they contended that the Act would not work efficiently until such provision had been made. The uncertainty as to the payment of medical men under these circumstances has thus far been attended with grave injustice to the medical men who have been summoned; with great anxiety to the midwives who have summoned them, lest they should fail to obtain assistance when it was most needed; and with consequent danger to the poor women for whom assistance was required.

The Council of the Royal College of Surgeons therefore view with great satisfaction the recommendations (with the exception of No. 7) on this subject (*b*), which are contained in the "Report of the Departmental Committee appointed by the Lord President of the Privy Council to consider the working of the Midwives Act, 1902," and earnestly trust that the Report will lead to the introduction of an Amending Act early in the course of the next session.

With regard to No. 7 of the Recommendations, the Council would point out that the onus of obtaining the fee would be thrown upon the medical man who had been summoned by the midwife, and that he might even be compelled, in accordance with the Recommendations, to attempt to recover his fee in court before he could claim it from the local authority.

The Council of the Royal College of Surgeons also desire to express their satisfaction with the Recommendations in the Report which deal with Prematurely-born Children (*d.* 6) and with those which refer to Ophthalmia Neonatorum (*d.* 7). The number of cases of blindness which are due to that form of Ophthalmia is very large, and many of the individuals who thus become blind are a permanent burden to the State.

I am, Sir, your obedient servant,
HENRY T. BUTLIN, President.

Sir Almeric FitzRoy, K.C.V.O.,
Clerk of the Privy Council.

[REPLY FROM PRIVY COUNCIL.]

Privy Council Office, London, S.W.
17th December, 1909.

SIR,—Referring to your letter of the 15th instant, I am directed by the Lord President of the Council to say that His Lordship notes with satisfaction that the recommendations of the Midwives Act Committee on the subject of the "remuneration of medical men summoned on the advice of midwives" (with one exception) commend themselves to the Council of the Royal College of Surgeons.

With regard to the recommendation to which exception is taken (see paragraph 80 of the report), I am to request you to be good enough to call the attention of the Council to the evidence of Mr. J. Smith Whitaker, who was a witness on behalf of the British Medical Association (Nos. 5605–8, 5718–9), Dr. Woods (Nos. 1692–5), and Dr. Hope (3034–8). A perusal of that evidence will probably satisfy your Council that the interpretation they have placed upon the recommendation in question (which is described by Mr. J. Smith Whitaker as "a desirable and reasonable arrangement") is a somewhat strained one, and that the intention of the recommendation was not to cast on the medical man "the onus of obtaining the fee," but merely to secure that he shall at least test the patient's willingness to pay before applying to the Poor-law authority for payment of his fee.

I am, Sir, your obedient servant,
ALMERIC FITZROY.

The President of the Royal College of
Surgeons of England, Lincoln's
Inn Fields, W.C.

THE JOHN HERBERT WELLS FUND.

THE following is the eleventh list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	*s.*	*d.*
A Friend	20	0	0
Her Grace the Duchess of Westminster	5	0	0
Mr. H. Warren Crowe	1	1	0
Some of Dr. Wells's out-patients at the Inoculation Department, St. Mary's Hospital (per Miss F. E. Longstaffe)	5	0	0

ADAMS *v.* POMEROY.

Dr. L. Garrett Anderson, the honorary secretary of the fund (114A, Harley-street, London, W.), has already received £64 1*s.* 6*d.*, and will have much pleasure in acknowledging further help towards the completion of the fund. About £100 are required.

	£	*s.*	*d.*
Miss Lila Greig	0	9	0
Mr. F. C. Poynder	2	2	0
Dr. M. W. Manuk	0	10	6

THE LANCET.

LONDON: SATURDAY, JANUARY 22, 1910.

Medicine and Education.

THE first annual report of Dr. G. NEWMAN, the chief medical officer of the Board of Education, just issued to the public, is a document which fully confirms the expectation that great national benefits will be derived from the systematic medical inspection of schools and scholars, and affords ample demonstration that the control of this inspection, and its application to purposes of practical utility, have been committed to an eminently judicious and capable official. Dr. NEWMAN commences his work by a historical sketch of the circumstances which gradually called public attention to the sanitary aspects of schools and teaching, as well as to the fact that the necessary assembling together of children for the purposes of instruction afforded exceptional opportunities of studying the rising generation in the mass, and of considering how far the children composing it were likely to surpass, to equal, or to fall short of the physical and intellectual standards of their parents or more remote ancestors. In this connexion he does full justice to the admirable work of Sir JAMES CRICHTON BROWNE in calling attention to the evil consequences of the mental over-pressure which he believed to exist in the public elementary schools of London, as well as to the inspections of Dr. FRANCIS WARNER and to the evidence collected by Sir SHIRLEY MURPHY and other medical officers of health concerning the occurrence of infectious disease in relation to school attendance. The first practical step in the direction of dealing with the questions hence arising was taken by the appointment of a medical officer, Dr. W. R. SMITH, by the School Board for London in 1890, an example which was followed in 1893 by the Bradford school board, who appointed Dr. JAMES KERR to a similar office, "and thus initiated a medical administration which has been of marked and continuous excellence." In 1902 Dr. KERR succeeded Dr. SMITH in London; and his annual reports to the County Council may be taken to represent the high-water mark of medical influence upon the course and conduct of education. The reports of the Scottish Royal Commission upon Physical Training, and of the Inter-departmental Committee on Physical Deterioration, served forcibly to direct public attention to the state of the children of the nation, and revealed the existence in many classes of a marked degree of physical unfitness, if not of actual and progressive deterioration. The Committee recommended that a systematised medical inspection of school children should be imposed as a public duty on every school authority, and this recommendation was accepted by the Government. By the Education Act of 1907 the duty was laid upon the authority "to provide for the medical inspection of children immediately before or at the time of their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools." Dr. NEWMAN points out that this clause involved the adoption of two principles: in the first place, that the most important features in the physical condition of the child should be systematically ascertained; and, in the second place, that authorities should at least have the power of attempting to make the health of the child such that he could profit by the instruction provided for him. While, however, the medical inspection of children was imposed as a duty on the local education authority, the further treatment of those suffering from any ailment was left as a power which the authority might exercise under certain conditions.

By this arrangement, the organisation of inspection was placed upon an entirely different basis from the organisation of treatment, and there were great and manifest advantages in bringing the former into intimate relation with the machinery and with the purposes of the public health service, which was already in being, and which had been built up as the fruit of a long period of legislation and administration. It was manifest, in fact, that the school medical officer must either work as an official of the general sanitary service or independently of it, and that, in the latter case, overlapping and waste of effort, even if not actual opposition, were practically certain to occur, more especially in relation to the temporary closure of schools during epidemics. The recommendations of the Board of Education with regard to this matter have almost universally been followed by the local education authorities, who have in one of two ways made arrangements in accordance with the advice of the Board. Either the authority has appointed the medical officer of health of its area to be the school medical officer, and in this way has secured the unification of the two medical services, or it has arranged for the work of the school medical officer to be intimately coördinated with that of the public health service. The former arrangement has been made in 224 of the 307 areas for which a school medical officer has been recognised by the Board, and in 76 of the remaining 83 the school medical officer is appointed either to be under the supervision of the medical officer of health or directly to coöperate with him. Even in the remaining seven some degree of effective coördination, either personal or administrative, is the rule, and the Board has continued to lay stress upon the necessity of obtaining it; a necessity which is daily confirmed by experience. School hygiene cannot be divorced either from home hygiene or from the general health conditions of the community; and many matters which arise in the work of the school medical officer fall by statute within the province of the medical officer of health. The intimate relation between the two branches of sanitary administration can only be ignored or neglected at the cost of inefficiency or failure, and hence the Board has felt itself responsible for securing that the necessary coördination shall obtain. Its action in this respect has received increasing support from local authorities as these have more and more appreciated its importance. It has, of course, been found necessary largely to strengthen the public health service for the performance of the new duties cast upon it; and in the 307 areas referred to there were, at the date of the report, a total of 1084 medical officers in the whole school service of England and Wales.

The grave remaining question, that of the treatment of the many ailments disclosed by medical inspection, is still surrounded by difficulties from which a way of escape has to be discovered. We have more than once laid down the principle that schooling being compulsory it is the duty of the public to secure that it shall not be actively injurious to those who are compelled to submit to it. There can be no doubt, of course, that the "over-pressure" described by many observers, and not always in strictly moderate terms, was injurious to a proportion of the children subjected to it; and, especially in the presence of common ocular conditions, much of the reading, writing, and needlework done in schools was open to similar condemnation. The community has no right to inflict injury under the guise of benefit. There can be no doubt that such injury has been inflicted, or that the enthusiastic "educators" of the nineteenth century, who believed in "schooling" as a panacea for all national evils, were as unconscious as NEWTON's dog Diamond of the amount of mischief which their good intentions might be instrumental in accomplishing. At present the great difficulty is to combine the proper treatment of the maladies disclosed by inspection with a due preservation of a sense of parental responsibility and independence. The report gives much reason to hope that some of the most prevailing maladies, such as caries of the teeth and the morbid conditions produced by the presence of vermin, will be greatly diminished by the influence of the instruction concerning the importance of cleanliness which is even now being given to the children, and as to the practical effects of which the statements of both medical men and teachers are distinctly encouraging. The remaining maladies are chiefly ocular and aural troubles, favus, ringworm, adenoids, and tuberculous affections, and for all these it would seem necessary that some provision should be made by public authorities. In London, as is well known, temporary arrangements have been made with certain hospitals, but it remains to be seen whether these will stand the test of experience. They are likely to involve payments to the institutions which, sooner or later, may give rise to claims to interference in the management of the institutions; they will probably require the addition to the ordinary staff of officers appointed for the special purpose and not likely to attain permanent positions, and the distances between the schools and the hospitals must usually be considerable and often prohibitory. The establishment of school clinics, largely officered by the school medical officers themselves, to the expenses of which the parents should be made to contribute according to their means, remains as the alternative. To enforce contributions where they should be forthcoming ought not to be difficult, since the ailing child might be refused admission to the school, and the parent proceeded against for not taking the necessary means to bring it into a position to attend.

The Mechanism of Labour.

THERE are some great questions in medicine which are always before us; their importance is so obvious and the occurrence of clinical emergencies affected by them is so frequent that debate is persistent. One such question is the mechanism of labour.[1] The history of the mechanism of labour begins about the middle of the eighteenth century with the discussion as to the manner in which the head of the fœtus enters the pelvic brim. At this period the old theory of DEVENTER, that before the onset of labour or in its early stages the child, up to this time presenting by the breech, underwent a complete rotation so that the head entered the pelvis with the occiput looking directly forwards, a view which was based upon the position which the head assumed on its exit from the pelvic cavity, was held still by some writers, including LEVRET and RÖDERER. Sir FIELDING OULD in the year 1742 was the first obstetrician to point out that the head entered the pelvis in the transverse diameter, and that while the chest of the child was apposed to the sacrum of the mother its face was turned so as to have the chin directly on one or other of the shoulders. OULD did not describe the passage of the head through the pelvis, but his advice, when the birth of the head was delayed on the perineum, to exert pressure on the chin through the rectum showed that he recognised a change in the position of the head at the moment of its birth. It was left for SMELLIE to describe in further detail, and in many respects most accurately, the mechanism of labour. SMELLIE was well acquainted with the variety of unreduced occipito-posterior presentations and with the manner in which their reduction normally occurred. In his writings, too, we meet for the first time with a correct conception of the effect of the general intra-uterine pressure on the expulsion of the fœtus, while he also described the method of carrying out manual rotation of the head when it presented transversely at the outlet of the pelvis.

About the year 1764 MATTHIAS SAXTORPH published a work on the mechanism of labour, in which he pointed out that the head entered the pelvic brim most commonly in one of the oblique diameters and not, as SMELLIE thought, in the transverse. He and his master, BERGER, had not only observed this fact clinically but had confirmed their observations by the dissection of the dead bodies of pregnant women. It is, indeed, probable that the name of Solayrés' obliquity usually given to this position of the fœtal head should rather be Berger's obliquity, since there can be little doubt that he was its original describer. SAXTORPH, like SMELLIE, attributed the forward rotation of the occiput to the influence of the bony pelvis and mainly to the action exerted upon the descending head by the ischial spines. It is interesting to note that ROBERT WALLACE JOHNSON, a pupil of SMELLIE, also described the entrance of the head into the pelvic brim with "the face a little towards the sacrum." SOLAYRÉS DE RENHAC in 1771 was the first writer accurately to define the various presentations of the head, as he was the first to point out the influence exerted by the position of the occipito-atlantal articulation in producing flexion of the head of the fœtus, and the manner in which the propulsive force exerted by the uterine contractions was communicated through the spine of the fœtus. He also was the first to describe the external rotation of the head in conformity with the internal rotation of the shoulders. JANUS BANG, a pupil of BERGER, described in 1774 the entrance of the shoulders into the pelvis in the opposite diameter to that of the head, and the external rotation of the latter with the internal rotation of the shoulders. In 1819 appeared the important work of Fr. C. NAEGELE, in which the mechanism of labour was described fully and the relative frequency of the various presentations pointed out. NAEGELE, like his predecessors, attributed the forward rotation of the occiput to the influence of the bony pelvis, a view which held its own for many years, and which undoubtedly holds true even at the present time as an explanation of the mechanism of labour in some conditions. NAEGELE'S views obtained recognition not only among his own countrymen but also influenced obstetric thought and writers in many countries. The presence or absence in normal labour of the obliquity called by his name is, indeed, still a matter of discussion and one which is likely so to remain.

---

[1] A Critical Inquiry into the Causes of the Internal Rotation of the Fœtal Head, by R. H. Paramore, M.D. Lond., Journal of Obstetrics and Gynæcology of the British Empire, No. 4, 1909.

In any description of the mechanism of labour the question about which a difference of opinion is most likely to arise is the causation of the internal rotation of the head in its passage through the pelvis. The study of frozen sections of pregnant women has rendered the primary movement of so-called flexion clear, and there is little doubt as to the causation of the movement of extension by which the head emerges from the pelvic cavity or of the movement of external rotation which it undergoes after its escape. Of late years, however, the conditions found in some frozen sections have tended to throw doubt upon the usual explanation given of this external rotation of the head. It is, however, principally with regard to the movement of internal rotation and its causes that writers have differed, and, indeed, even at the present day the matter is far from being settled. We have seen that the earlier obstetricians held that it was determined by the shape of the bony pelvis, and, indeed, there can be no question that this has some influence. The shape of the bony pelvis will not, however, explain the rotation forwards of the occiput in an occipito-posterior presentation, and for this reason, among others, VARNIER in 1888 pointed out the inadequacy of this hypothesis to explain entirely the mechanism of labour. In seeking an explanation for these cases VARNIER, and more especially VEIT, laid great stress upon the part played by the soft structures of the pelvic floor. For them and for their followers the internal rotation of the head is determined by the action of the inclined plane of the pelvic floor and the shape of the opening in that floor. And, indeed, the classical experiments of DUBOIS and of others lend great support to this view—a view which is accepted by a great many obstetricians at the present day as sufficient and correct. To meet the difficulty of explaining the fact that rotation of the occiput forwards in occipito-posterior presentations occurs when it might be expected that the action of the pelvic floor would as readily cause a rotation of the forehead forwards, the action of the contractions of the uterus in causing rotation of the trunk has been called into play to assist, and indeed, according to some writers, to initiate the rotation of the head. Thus the uterine contractions are held to cause flattening of the uterine cavity from before back, and so to cause a rotation forwards of the fœtus placed obliquely in that cavity. The rotation of the back of the fœtus forwards is held further to be favoured by the projection of the spine of the mother, tending to prevent its rotation backwards. The objections to this view are furnished mainly by a study of frozen sections, which undoubtedly show, at any rate in the majority of instances, that the rotation of the fœtal head precedes and does not follow the rotation of the trunk.

In an attempt to overcome the objections which may be urged both to the view that the pelvic floor plays the main part in causing rotation, and to the further view that the action of the pelvic floor in producing this movement is assisted, if indeed the movement is not initiated, by the contractions of the uterus, SELLHEIM has advanced another theory based upon the conception of the adjustment of the fœtus as a whole to the parturient canal. In this view the internal rotation of the head is attributed to the unequal flexibility of the fœtal axis in various directions, so that in its passage through the curved pelvic canal the fœtal body bends itself in conformity to the curves of the birth canal. By means of a number of very ingenious models SELLHEIM has attempted to prove his contention that the fœtal head can be bent backwards to a greater extent than in any other direction and that this is due to the tone of the large group of extensor muscles on the back and neck. He also regards the position of the fœtal head before the onset of labour as one not of extreme flexion but as one midway between flexion and extension. In the early stages of the passage of the head through the pelvic canal as a result of the flexion of the head which occurs the tension of these extensor muscles is increased. As the fœtal cylinder therefore passes down through the bent birth canal the occiput rotates forwards in conformity with the bend of the canal in this direction, and because the extensor muscles of the neck are tending to undo the position of flexion of the head which is present during the descent of the head into the pelvic brim. In an inquiry into the causes of the internal rotation of the fœtal head PARAMORE criticises SELLHEIM'S views and brings forward the objection that the conditions of the experiments are not analogous to those obtaining in the living woman. He argues that this hypothesis is disproved by the fact that in cases where it is certain that the bony pelvis exercises no influence upon the position assumed by the fœtal head—namely, where the head is unduly small or the pelvis unduly large—this rotation of the occiput often does not occur, that is, in the very cases in which, according to SELLHEIM'S view, it should occur most frequently. OLSHAUSEN, too, has raised the objection that the rotation of the trunk precedes that of the head, but in this he is not supported by most writers. It is impossible, he writes, to believe that the fœtal trunk, closely embraced as it is by the soft parts, can be caused to rotate by the movements of the head. If it does not do so then it must rotate independently, and if it does this then it may well influence the rotation of the head and even possibly initiate it. On the other hand, AHLFELD brings forward the objection to OLSHAUSEN'S view that rotation of the head occurs in the first of twins when the uterine cavity is not flattened, and occurs also in the mechanism of labour with the after-coming head.

It seems to us reasonable to suppose that the rotation of the head and the trunk may both be due to the same causes and may take place independently of one another. As Dr. PARAMORE points out, it is difficult to believe, in view of the large degree to which rotation of the head on the trunk can occur normally, amounting as it does to about 90°, that any torsion of the body can influence or cause a rotation of the head. He further maintains there is no satisfactory proof that in occipito-posterior presentations the forehead is on a lower level than the occiput or that it meets the pelvic floor first. When rotation forwards of the occiput fails to occur he regards it as due, not to rotation of the forehead forwards, but to a failure of the normal mechanism which should cause rotation of the occiput forwards. He appears to us to attribute the rotation of the head in occipito-posterior presentations to rotation of the forehead backwards rather than to rotation of the occiput forwards, and lays stress, as did FRITSCH, on the action of the anterior lateral wall of the pelvis in causing rotation backwards of the forehead which is lying in apposition to it and pressed on to it by the uterine contractions. It must be remembered that the anterior rotation of the occiput may occur quite early even before the head reaches the pelvic floor, and therefore any theory which takes into account the action of the pelvic floor alone is not sufficient to explain all cases. It seems necessary to invoke more than one factor to explain the internal rotation of the fœtal head, and the most probable explanation would appear to be that it is in reality due not only to the action of the pelvic floor, but that the shape and varying degree of flexibility of the fœtal head and the action of the uterine contractions in producing rotation of the body of the fœtus must all play a part in different circumstances and may all, indeed, participate in the production of the rotation in a normal case of labour. No doubt when we are in a position to reconstruct all the phases of the movements of the fœtus in its passage through the birth canal from a study of frozen sections we shall be able to give an accurate description of the mechanism of labour, and be better able to demonstrate the accuracy or inaccuracy of the various hypotheses which have been brought forward to explain its causation.

The Position and Method of Science Teaching in Secondary Schools.

THERE exists a considerable body of opinion that the solution of the difficulty of the medical students' curriculum will be found to lie, not in the extension of its time, but in the relegation of the preliminary science subjects to what we may call the ante-natal days of the medical student—that is, to his schooldays. If this plan be generally adopted, as it has already been in a small number of schools, it is obvious that the nature of the elementary science training given to schoolboys will be of great interest to the medical profession, falling as it must under the scrutiny of the General Medical Council. Few medical men will deny the importance attaching to the amount and kind of scientific teaching available at the secondary schools at the present time, for surely a man who is daily occupied in the observation and study of the highest of all natural forms and forces must appreciate more than most the number of "well-educated" men and women who are allowed to grow up without acquiring the slightest knowledge of the physical world, who have no clear conception concerning the structure of the universe, or of the nature of the simplest physiological processes—to whom, for example, "salt" suggests only a condiment of the table, while the word "gas" is limited to the household illuminant or is a reminder of an unpleasant interview with the dentist. Whatever be the intellectual weapons with which the coming generations are to be equipped for the business of life, few will be found to deny that the purely classical education based upon the traditions of Tudor days, and developed by the headmasters of the seventeenth and eighteenth centuries, is destined to be merged into a system of instruction which advancing knowledge has made more truly liberal.

Amongst the first principles of a liberal education we reckon an intelligent, even if elementary, knowledge of natural science, for not only is a conception of "what things are made of"—be those things animate or inanimate—of enormous practical use in nearly every human occupation, but the lifting of the veil which hides the mysteries of force and matter so completely from the ignorant that they do not even perceive them to be mysteries opens to the child's expanding mind a region of interest, of wonder, and in some cases of reverence, which, under wise guidance, cannot fail to broaden his vision and to equip him with such knowledge as is the foundation of true wisdom. Indeed, Professor H. E. ARMSTRONG, the President of the Association of Public School Science Masters, at the annual meeting held last week at Westminster School, advanced so large an estimate of the future part of the science master in our public schools that his audience might have been tempted to believe him guilty of a ponderous compliment, had it not been for his subsequent denunciation of their present methods of teaching and of their unpreparedness to take up the honourable burden which is to fall upon their shoulders until they have undergone a thorough revision upon some such lines as Professor ARMSTRONG proceeded to indicate. The first aim of education, he said, should be to teach youth to see something; at present we are content with teaching it to say something. Science is a recognition of truth, and the expounders of natural truth must prevail over the expounders of words, who merely hold their pride of place in our schools by inheritance from a long line of literary and often anti-scientific headmasters. He continued to speak with asperity about the narrowing effect of the classical education, and quoted this somewhat remarkable passage from a discourse delivered by the late Dean FARRAR at the Royal Institution over forty years ago: "The question then is, not whether the education is to be literary or scientific, but whether it is to be scientific or nil: the struggle is not between science and literature, but between something and nothing, between science and no science, between intellectual culture and its almost total absence." These are hard words and we do not think they are fair words. For a certain type of boy they may be absolutely true, and the grinding of a refractory mind in the old classical mill is indeed nothing less than tragic in the cruelty it entails on the boy, the disappointment it brings to his parents, and the heartburnings which at least it should cause to a conscientious schoolmaster. But to condemn the whole classical system root and branch even because of a large number of failures is illogical, though we agree that the schooling of the average boy of the middle or upper classes should be remodelled so as to include a respectable training in natural science, though this may mean the abandonment of the study of Greek. But we are entirely hostile to those who would abolish Latin as another dead language, for not only has it a value as a scientific *lingua franca*, but the mere acquisition of many medical terms would become without it a meaningless and laborious task, and, what is also important, it would snap irrevocably the last link which binds our profession to the scholarly traditions of THOMAS LINACRE and Sir THOMAS BROWNE. We do not, indeed, suggest that the mental pabulum that nourished those worthy scholars is desirable for the medical cadet of to-day, for science has so much to teach him that he must be content with but a grounding in the proudly-called "humanities," but *pace* Professor ARMSTRONG, we can see no opposition between a scientific and a "literary" secondary education, and we hope that the preliminary training of boys destined for medicine will in the future be in the best sense of the world literary, or else may medicine cease to hold herself a liberal profession. The shades of SMOLLETT, of GOLDSMITH, of WENDELL HOLMES, and of many others who have gone before us would surely rise up to protest against the exclusion of "letters" from the schoolboy's curriculum, and, in our opinion, those "letters," if he is to follow medicine, should continue to include at least a modicum of Latin, which will always be of use to him and may in his riper years become a source of real pleasure and solace unattainable to the pure scientific specialist.

A considerable portion of Professor ARMSTRONG'S address was occupied by a comparison of the expressed opinions of certain distinguished headmasters on the value or otherwise of a classical staple of education; and, having dismissed their convictions with some contumely and called evidence on the other side, he proceeded to hold up as a pattern the system adopted by our naval training colleges whereby the study of classics is replaced by compulsory manual exercises in the workshops to the fostering, he said, of the spirit of self-help, courage, and alertness, and the development of all the faculties. Turning to consider the actual method of teaching the science which he claims as alone imparting true breadth of mind, this severe schoolmaster of the schoolmasters proceeded to rate them soundly for their present exposition of the experimental method. He charged them with drawing no distinction between demonstrations or practical exercises and experiments, and remarked that "to show an experiment is a contradiction in terms." An experiment is something which a person must try for himself, and the results of which he must record for himself in full and at the time of its performance, and not subsequently, more or less correctly, by an act of memory. Professor ARMSTRONG'S scheme is drastic. The experimental method is to be fostered early, and instruction in chemistry is to form the basis of all scientific teaching, while instruction in physics is to form the next step, for these two are essential to every other branch of science. Geology and a little biology and physiology should be taught, and all these subjects are to be grouped under the general heading of "Experimental Science." Professor ARMSTRONG railed against the so-called nature-study, which he found a "rank and pretentious hybrid" and destitute of any right to its title, but in the syllabus of instruction which he proceeded to unfold, beginning with the contemplation of a pebble and passing on to a piece of rusty iron, there seemed to be a considerable resemblance to the methods adopted by "nature-study" teachers. We need not follow him into this syllabus as it was the same as he gave in outline in a paper which he contributed to the annual meeting of the British Medical Association in 1908, but we may say that it contains many admirable points which could all be adopted and yet leave the schoolboy time to lay the foundations of a good literary education. One of Professor ARMSTRONG'S suggestions was that the teaching of mathematics should be made more practical. In this connexion we may mention a report on the Correlation of Mathematical and Scientific Teaching presented to the meeting by a joint committee of the Mathematical Association and the Association of Public School Science Masters, in which several sensible recommendations are made. For instance, it is suggested that mathematical masters should set problems requiring physical data and expressed in metric units, and practical tests of measurement, weight, and the like bearing on these questions could then be made under the direction of the science masters. This would, we feel sure, make the study of mathematics more attractive to a certain number of boys and more profitable to nearly all. Another excellent suggestion is that in the early teaching of physics the use of formulæ should not be allowed. For instance, when learning about the expansion of solids "the boy should be made to understand that the coefficient of linear expansion is the amount by which unit length expands when heated through unit temperature, and should then make the calculation by the ordinary (unitary) methods." This is shrewd advice, for we have known students a good deal beyond their school days who were content to rely upon formulæ as magical symbols that would solve problems without having any true conception of the principles underlying them. Science studies must always proceed little by little and line upon line; for unless the foundations of a man's knowledge of natural events and sequences are laid secure, he must infallibly come to grief when he seeks to apply his accomplishments. And knowledge can have no application more important to the human race than the modern practice of medicine.

Annotations.

"Ne quid nimis."

A LAY VIEW OF MEDICAL RESEARCH.

THERE is a class of persons, the members of which, not uneducated in other ways, are fond of depreciating scientific research having apparently no practical result. This fallacy and its refutation formed the major part of the text of an address delivered on the sixty-third anniversary of "Ether Day"—i.e.. Oct. 16th, 1909—at the Massachusetts General Hospital, by Dr. Charles W. Eliot, the learned Emeritus President of Harvard University. As might have been expected from the occasion, Dr. Eliot considered research in a limited aspect, referring only to medical experiment in connexion with anæsthesia and asepticism. He reminded his audience that those who doubted the value of medical research as connected with experimentation on animals put forward three doubts. Firstly, Has biological research really contributed to the success of the medical art? Secondly, Is the search for truth through experiments on animals justifiable when it is not known that the scientific results, though true, or sound as knowledge, can have any effect on human well-being? Thirdly, Is truth-seeking in biology commendable, even with the help of anæsthesia and asepticism, if the search be conducted at the expense of the comfort, joy, or life of animals? Dr. Eliot answered the first question by bringing forward the advances in knowledge which have accrued to medicine in the cases of vaccination, and serum therapy as used in the treatment of diphtheria, tetanus, and meningitis. As regards the second question he pointed out that many a scientific discovery which seemed at first to have no connexion with medicine has turned out to be of the greatest possible value, and that this holds good quite as much in biological work as in physical. He gave as instances the invention of the compound microscope and the immersion lens which together with the use of aniline dyes have enabled bacteriologists to study the infinitely minute organisms which are the primary causes, so far as we know at present, of disease. Hence, he argues, experimentation on animals is justifiable even although it may not appear at first that the results obtained will have any immediate application to medical and surgical practice. In regard to question 3, he naturally pointed out that animals are killed, and their liberty interfered with in every possible way, by hundreds of people daily, merely for man's personal convenience or pleasure; that, therefore, experimentation upon animals, through which, within the last 60 years, medicine, surgery, and sanitary science have given the largest benefits to men, is at least to be considered equally justifiable. Anæsthesia and asepticism have not only been of service to the animals experimented upon, but their aid has made it possible for results to be obtained which are not vitiated by pain or the failure of an operation. Dr. Eliot's remarks are truisms to his medical brethren, but as it is likely that a portion of his audience were laymen, we congratulate him upon a sound and simple exposition both of the position of scientific workers and of the benefits which have accrued to science from their labours.

LAYING THE DUST BY OIL.

THE introduction of the motor-car has rendered the problem of laying the dust of the streets more pressing, and every medical man regards dust as one of the great foes to health. In America a method has been in use for some years of which little is known in this country—the application of oil to the streets. Like most supposed novelties, this method appears to be very old and to have been employed by the ancient Egyptians. In the *Canadian Journal of Medicine and Surgery* for November, 1909, Dr. C. Sheard, medical officer of health of Toronto, has reported very satisfactory results from its use. The method was forced upon him in combating the dust nuisance on roads in the outskirts of the city distant from the water mains. He used crude petroleum there with such satisfactory results that he extended its use to the macadam roads throughout the city generally. The oil is applied in several relays at intervals of a few days. The number of applications required varies according to the character of the road. If the road is good and free from ruts and not subject to heavy traffic three applications, which are regarded as one oiling, should last from one to three months. But if the road is bad and traversed by heavy drays and wagons the oiling will probably not last longer than one month. The better the road the smaller the dose required. If the road has a high gradient, and is much exposed to the sun, the oil will dry up sooner than if the road is more or less shaded by trees. The oil is lightly sprinkled from a watering cart driven at a fairly rapid rate, so that the drops will be to a great extent separate, and puddles of oil will not be left in depressions. Should these occur they should be swept away with a broom, so that they will not be splashed by the traffic on the clothes of pedestrians. After three or four days a second application is made, and after a week a third. It is an advantage to prepare the road beforehand by cleaning out channels and filling up ruts, but this may not be practicable and is not necessary. Rain does not affect disadvantageously an oiled road; such a road dries more rapidly after a shower. The surface water runs speedily into the channels and the road is improved rather than injured. When the sun comes out the last traces of water are removed and the surface of the road is oily again. Dr. Sheard finds that 1500 gallons of petroleum per mile is sufficient for one oiling (three applications) of an ordinary road; 2000 gallons may be required for a road in bad repair. At 4 cents a gallon for the oil and from 10 to 15 dollars for its application the cost is from 70 to 75 dollars per mile, and in Toronto this is 20 per cent. less than the cost of watering. Oiling has many advantages over water. A watered road dries quickly and in three hours is as bad as ever. Moreover, after traffic it is more damaged and its general appearance is inferior to that of an oiled road. The objection may be raised that the oil has an odour. Dr. Sheard finds that this is little complained of and that it generally passes off in three or four hours.

CHYLOTHORAX.

THE number of recorded cases of chylothorax is so small that every new case is of interest. In the *Yale Medical Journal* for December, 1909, Dr. F. C. Hyde has reported the following case. A man, aged 52 years, was admitted into hospital on May 11th, 1908, for shortness of breath and cough. At the age of 28 years he became addicted to alcohol. Nine years before he came under observation he noticed enlarged glands in the left axilla and in both groins, and later swellings in the neck on both sides. Five years before, whilst singing a high note he felt as if something ruptured in the right supraclavicular fossa and a swelling in this locality suddenly increased in size. Since that time it had slowly grown. In March, 1908, he had a syncopal attack, followed by dyspnœa with severe coughing and general malaise. On admission the temperature was 100° F., the pulse was 100 and of poor quality, and the respirations were 26. The chest was barrel-shaped with a wide intercostal angle and the right half was more prominent than the left, its intercostal spaces bulged, and it moved little in respiration. In the supraclavicular fossa on both sides were large irregular swellings. The larger, on the right side, was 3½ inches in diameter; the mass in the right axilla was 1 inch in diameter, in the left 1½ inches, and in each inguinal region ½ inch. The whole of the right chest was dull, while the left was hyper-resonant, and the cardiac dulness was obliterated by the emphysematous lung. Vocal fremitus was faint on the right side. At the apex of the right lung the breathing was broncho-vesicular; over the rest of the lung the breathing was faintly heard. Over the upper lobe of the left lung fine râles were heard, and over the rest of the lung expiration was prolonged. There was no sputum. The quantity of urine passed in the 24 hours amounted to only 660 cubic centimetres; it was of specific gravity 1020, and contained neither albumin nor sugar, but indican in large amount. Paracentesis of the right chest yielded 700 cubic centimetres of opaque, milky, faintly pink fluid. As the patient showed signs of collapse the aspiration had to be stopped. The sediment of a centrifugalised specimen consisted of fine fat granules and a few leucocytes and erythrocytes. Filaria could not be found either in the fluid or in the blood. From May 14th to June 19th the patient was tapped six times, and 8275 cubic centimetres in all of milky fluid were obtained. The right chest remained dull and the breathing over it was rough vesicular. From June 19th to August 19th paracentesis was performed 13 times, and 39,420 cubic centimetres of fluid were removed. The patient improved and was able to leave hospital and do light gardening.

CLIMATIC IRRITABILITY.

CERTAIN places are said to be "bracing," while others enjoy an unenviable reputation of being enervating, though the latter quality is sometimes described as "soothing." The very antithesis of soothing is the climate too often met with in many resorts on the Mediterranean littoral during winter, where a blend of hot and cold that is disagreeable to the healthy and very trying to the invalid may frequently be experienced. It is common in midwinter in these places for the landscape to be quivering in the hot sun while a piercing wind from the north-east seizes every opportunity—the shade of a palm tree or a wall—to grip the unwary traveller in its fierce embrace to the detriment of his comfort, possibly of his health. The inexperienced laugh at the cautious resident who dons his overcoat in spite of what looks and feels like summer sunshine, but the wages of ignorance is often disease. There is one curious effect of these bitter-sweet climates—namely, a certain irritability of temper that attacks people after a few weeks spent in these surroundings. Ask anyone who has passed three months at Helouan or Algiers, Nice or Mentone, and although he may not admit it as regards himself he will readily concede the truth of this observation on behalf of his friends. Now this irritability is no doubt an outward and visible manifestation of a disturbance of nervous equilibrium consequent on nervous exhaustion. The effect of these rapidly recurring alternations of heat and cold on the nervous system is strictly comparable with that of quick alternations of light and dark on the eye. The bewildered vaso-motor system does its best to respond to the kaleidoscopic indications, but fails and ultimately reacts on the nervous system as a whole. When this symptom declares itself it is time to move on, either further south where the variations of temperature are less marked, or to a higher altitude where the temperature, being low, is more uniform. The latter is the better choice of the two, because no matter how far south one goes, starting from the Mediterranean, much the same difference obtains between the temperature in the sun and that of the wind. The only advantage attending the desert air is that, being absolutely dry, the alternations are less trying than near the coast, where the relative humidity is high.

THE ENGAGEMENT OF MATERNITY NURSES.

NOT for the first time a case has been tried which is of great importance to all maternity nurses, and should prove instructive to general practitioners who are asked to forecast the time of arrival of an expected infant with a view to arrangements being made by the mother. At Kingston county court on Jan. 14th Miss Helen Sneddon, a maternity nurse, sued a gentleman at Wimbledon Park, by whom she had been engaged to attend his wife from Oct. 5th, upon which she of course refused other engagements for the ensuing weeks. She went into residence at his house at the appointed time, but as the baby had not been born by the end of a fortnight she left, after being accused by the expectant mother of having made a miscalculation as to the date of birth. She was, however, able to prove that she had made no error on the data supplied to her, using the ordinary obstetrical tables. The medical man in attendance admitted that the mistake was his, but the defendant tried to lay an equal share of the responsibility on the nurse, who sued for 7 guineas, the agreed fee for her services for the month. The defendant's husband had offered to pay her 2 guineas for the fortnight which she had spent in his house, and to engage her again for 7 guineas when the confinement actually should take place, but she would not accept these terms. The judge held that the plaintiff was entitled to recover, as she had been quite correct in her anticipation of the date of confinement on the facts supplied to her, and as she was in possession of a written agreement. Judgment was accordingly entered for her for 7 guineas and costs. We think that nobody will object to the justice of this judgment. It was certainly a hard case for the defendant, who seems to have behaved in a quite reasonable manner, but no one can blame the nurse for asking what was clearly due to her. It illustrates the great importance of all maternity nurses obtaining a written agreement when undertaking maternity cases. Of course, it is open for the expectant mother not to tie herself down to a definite date, but when this has been done, and the nurse has thereby been precluded from making other engagements, it is clearly right that the contract should be fulfilled on the other side.

THE TREATMENT OF SYRINGOMYELIA BY RADIUM.

IF there is a branch of medicine in which any novel method of treatment ought to be welcomed and generously tested it is that of neurology. The number of cases of a chronic nature with which the practising neurologist is confronted is so considerable that they constitute a reproach. He is powerless to arrest the insidious progress of myopathy or to check the nuclear degeneration of bulbar palsy. Syringomyelia is an excellent instance of a chronic nervous disease of which the chapter on treatment is as yet unwritten. Nevertheless, we owe to our French *confrères* an advance in the therapeutics of that malady that is deserving of serious consideration. Two years ago M. Beaujard and M. Lhermitte published an article on the radiotherapy of syringomyelia in which they announced that exposure of a syringomyelic patient to the action of the X rays had been followed by a recession of the symptoms. Similar results in one or two cases have been obtained by, among others, Professor Raymond. In the *Progrès Médical* of Dec. 18th, 1909, Mlle. Fabre and M. Paul Touchard, of the Salpêtrière, report a series of five cases of syringomyelia handled in an analogous fashion by exposure to radium, with surprising effect. As our readers may remember, the emanations of radium are known as α, β, and γ rays respectively, the penetrating power of which increases in this order. The α rays are arrested by the skin, whereas the β rays penetrate deeper, and the γ rays will pass through bone itself. For their purpose the investigators employed a flat tray, the surface of application of which was 6 centimetres square, containing 1½ centigrammes of pure radium bromide, and a nickel screen, three-tenths of a millimetre thick, sufficient to allow only β and γ rays to filter through. The applications were made daily to the vertebral column, at various levels, alternately to the right and the left of the spinous processes. At first the duration of the exposure was restricted to 10 minutes, but evidence of the innocuousness of the applications led to their being extended to as long as an hour and a half. The record is certainly an encouraging one. All five cases improved, three of them to a remarkable degree. All showed increased mobility of the limbs, with diminution of stiffness. One patient's hands had been quite helpless, in a *main-en-griffe* position, but after radium treatment she was able to flex, to extend, and to separate the fingers; a second was enabled to resume his work as a draughtsman after six months' disuse of pencil and compasses. Another remarkable fact was the disappearance in one case of the trophic disturbances characteristic of Morvan's disease after exposnre to the action of radium during several *séances*. The effect of the metal on the muscular atrophy so frequently noted in syringomyelia was less obvious, as it was also on the variable anæsthesias and analgesias of the disease. The rapidity with which improvement set in is striking. After three or four exposures the "succulent hand" of one case had altered for the better very appreciably and muscular force had returned. Amelioration, in at least two cases, has continued and persisted long after the cessation of radium treatment. From the theoretical standpoint there is reason to snppose that the action of radium on the syringomyelic cord is analogous to its accepted action on neoplastic tissue. By some mechanism unknown to us the rays check the proliferating tendency of the cellular elements of new growths, and on this analogy it is perhaps only in developing cases of syringomyelia that they are likely to be of service.

THE TERRITORIAL ARMY AND ITS SANITARY CORPS.

Dr. H. Peck, the medical officer of health of Chesterfield, who is also an officer in the recently established Sanitary Corps of the Territorial Force, has drawn attention in *Public Health* for December, 1909, to some points in its organisation which deserve notice. Dr. Peck considers that each officer should be attached to a particular unit and should know the extent of the country in which he might be called upon to act if mobilised. This appears to us to be essential. The chief reason for securing the aid of local medical officers of health would seem to be that they are the people who have an intimate knowledge of the sanitary circumstances of some particular locality or area; they should, and would, "know the exact situation of every water-main, public sewer, hospital, and building suitable for a temporary hospital." These should be marked on a map, kept up to date, of which there should be a copy at the local headquarters. These medical officers also would be acquainted with the physical geography and surface geology of the district, matters of great importance in regard to the selection of camp sites. But if the medical officer of Chesterfield is called upon to mobilise in Norfolk or any other part of the country distant from the area with which he is acquainted his special knowledge and experience would be to a great extent wasted. It will not do to say that such a contingency is unlikely. Square pegs have often been put into round holes in the War Office as elsewhere; the arrangements should be made beforehand so that everything and everybody may be prepared before mobilisation takes place and the special experience that is available applied where it will be of the greatest value. The need for camp training is also urged. Many most valuable sanitary officers have not up to the present time had opportunities of gaining practical experience in the management and sanitation of camps; this could readily be afforded. Apparently the provision of uniform for these officers—that is, the issue of an ontfit grant—is deferred until mobilisation is actually ordered, but if they are called upon to do any practical work with troops by way of training uniform would appear to be a necessity, in which case the outfit allowance should be authorised. It comes to this, that if the work is meant to be done at all it must be practised beforehand; and if this training is to be military it should be carried out in a soldier-like fashion, which implies the spirit of discipline (not only in issuing but also in obeying orders) that is signified by the wearing of uniform. Dr. Peck rightly considers it an important part of the sanitary officer's duty to give lectures both to officers and men on the main principles of field sanitation; and we presume also that he would give special hints and instructions on the local health conditions of the district—e.g., local water-supplies. In conclusion, Dr. Peck makes a recommendation that the services of inspectors of nuisances should be utilised in connexion with the Territorial Force. Most of them, especially those of the larger rural districts, would make most excellent guides, knowing as they do the short cuts and footpaths; this is a very good suggestion, and we hope the authorities will secure their services.

CONGENITAL ACHOLURIC JAUNDICE.

WE publish on p. 227 of this week's issue of THE LANCET a paper by Dr. F. Parkes Weber and Dr. G. Dorner in which four cases of congenital acholuric jaundice or congenital family cholæmia occurring in one family are recorded. The cases are of the same nature as those described by Dr. F. J. Poynton in a lecture which we published last week and discussed in a leading article. Both series of cases have been investigated by modern methods of clinical research, more especially in regard to the morphology and chemical properties of the blood, and both lend support to the view that the condition is due to a primary defect in the blood-forming organs leading to the production of an inferior quality of red blood corpuscles, which prove more vulnerable to hæmolytic agencies, the jaundice being regarded as a secondary consequence and due to changes in the pigment of the broken-down corpuscles produced in the liver. On this view the chronic enlargement of the spleen which is a feature of the disease is due to the great demands made upon the hæmolytic functions of that organ. The general features of the disease are well described in both papers, and Dr. Weber and Dr. Dorner give useful references to other recorded cases of the condition. There are still some points about which further information is required in order to clear up certain matters upon which there is not as yet general agreement. The morphological characters of the blood appear to be a certain degree of anæmia, with poikilocytosis, anisocytosis, polychromatophilia, and punctate basophilia. The red corpuscles are unusually fragile when tested *in vitro* with salt solutions of various strengths. In both series of cases the serum was not found to possess any hæmolytic properties either on red corpuscles from a normal individnal or on those of the patients themselves. Moreover, no hæmagglutinative action was obtainable, although this has been observed in some other cases. Bile pigment was found in the serum in Dr. Weber and Dr. Dorner's cases but not in Dr. Poynton's. In explanation it may be stated, however, that Dr. Poynton's cases were not examined for this substance when actual jaundice was present. The condition of the urine is also apparently not constant in these cases. Bile pigments are apparently frequently absent, as in Dr. Weber's cases, and hence the name "acholuric" sometimes applied to this variety of jaundice, their place being apparently taken by urobilin and urobilinogen, but this is not invariable, since bile pigments were found in the urine in one at least of Dr. Poynton's cases. In regard to the jaundice occurring in this condition, it is often remittent, usually mild in degree, and, according to Dr. Weber, is never accompanied by icteric pruritus, xanthoma, or clubbing of the fingers. It is probable that more extended investigation of such cases will tend to throw further light on some of the disputed points in the pathology of jaundice, and, as Dr. Poynton has remarked: "It is, indeed, almost impossible not to observe some interesting fact if you have a family of this kind under your care for any length of time."

THE VALUE OF WOMEN INSPECTORS IN THE WORK OF PUBLIC ASSISTANCE.

THE announcement that the President of the Local Government Board has appointed three women inspectors—Mrs. Andrews, Miss Lea, and Miss Todd—to undertake the duty of inspecting maternity wards, nurseries, infirmaries, and the nursing arrangements in Poor-law institutions will come as no surprise to those who have followed the drift of the evidence given before the Royal Commission on Poor-law and the reports of that Commission. It has been for a long time fully recognised that in all the institutions referred to the inspectorial duties involved were not of a kind which could be well undertaken or properly discharged by male inspectors, and there are distinct advantages in the employment of persons who have had practical experience of nursing and of the relation of nurses to one another and to the patients. As regards infirmaries, it is obvious that their rôle in relation to the public is gradually passing from the exclusively Poor-law atmosphere to a condition which approaches that of the general hospitals, and this being so, there is the more need that the level of nursing in these institutions should be raised, and modern methods, so far as practicable, adopted. The better supervision of pauper children, whether in the workhouse, in cottage homes, in schools, or in the cottages of the poor, is a matter upon which the Royal Commission laid great stress, and the appointment of these three women inspectors may, we infer, be taken as a desire on the part of the Board to carry into effect the more practicable of the Commission's recommendations. In this connexion the Local Government Board has recently issued an Order relative to pauper children boarded out within the limits of the union to which they are chargeable. Up to the present time the inspection of children in their homes has been largely an optional, and consequently somewhat perfunctory, matter. By the provisions of the new Order the guardians have either to make arrangements with a boarding-out committee which will have to consist of persons other than members of their own body and of whom one-third must be women to supervise the children boarded out in the union, or else to appoint a committee of their own members. Curiously enough, although children who have been sent to cottage homes and similar institutions may be well looked after, the guardians have not considered it necessary to ascertain how the children whose parents were being subsidised by the rates were being cared for, and it is to be hoped that the women inspectors will possess some supervising powers with regard to these children as well as in relation to those who are "boarded out." It is well, too, to bear in mind that although children under the Poor-law are being cared for in increasing degree in separate institutions, there are still many who are in the workhouses. For example, in 1908, of the 234,792 children in receipt of Poor-law relief, only 62,426 were in institutions, and of this number 16,221 were in workhouses. It was one of the aims of the Royal Commission to reduce the number of these children in workhouses, and this was put in the forefront of the recommendations. "We are strongly of opinion that effective steps should be taken to secure that the maintenance of children in the workhouses be no longer recognised as a legitimate way of dealing with them." The whole time of three women inspectors will be taken up in their immediate routine work, and before long an augmentation in their number may be necessary.

THE SAD CASE OF MR. H. W. COX.

AN appeal which has recently appeared in our daily contemporaries from Sir William Treloar, and to which Mr. F. W. Alexander refers in another column, shows Mr. H. W. Cox, one of the pioneer makers of X ray apparatus in England, to be in a very piteous state and in urgent need of financial relief. As is generally known, his hands were attacked some years ago with X ray dermatitis, but he continued to work with the rays, to which he exposed himself constantly whilst he was testing the apparatus destined for use in the South African war in conjunction with Mr. Hall-Edwards, who has also suffered in the same manner. During the past six years the disease has progressed steadily, and in turn he has been obliged to submit to partial amputation of his left hand, which is now atrophied, to the same operation in his right hand, and in November last to amputation of his right arm. He is now confined to his house in constant pain, and with the disease spreading on his face and in his mouth. To make his position more distressing the rearrangement of his firm's business consequent upon his illness has left him without adequate provision for his wife, who nurses him, and his three sons, the oldest of whom is 16. The £200 which was granted him from the Royal Bounty Fund was a lump gift and not a Civil List Pension as was supposed by some people. Sir William Treloar makes an urgent appeal for subscriptions for his relief, and will gratefully acknowledge any sums that may be sent to the "Cox Fund," 69, Ludgate-hill, London, E.C. The appeal is one that needs no endorsement from us, so rightly is it made, and we feel that Mr. Cox has a strong claim on the administrators of the Civil List.

THE CONTROL OF DISINFECTANTS BY THE BELGIAN GOVERNMENT.

THE *Bulletin de l'Administration du Service de Santé et de l'Hygiène de Belgique* publishes the text of a circular issued by the Royal Ministry of the Interior and of Agriculture of Belgium to the manufacturers of disinfectants concerning the control of their products. This official circular explains that it is necessary to ensure efficacy of the disinfectants employed to prevent the spread of transmissible diseases. In consequence of a report received from the Superior Council of Public Hygiene, the Minister has determined to organise a permanent control of those products which the manufacturers or merchants might desire to submit to this surveillance. Thus it will be seen that the measure is not obligatory, but it is to be presumed that in practice the manufacturers will be driven by self-interest to seek this guarantee, for those manufacturers who carry out the prescribed conditions will likewise be able to put on their goods a label indicating that the disinfectant has been submitted to the control of the Government. A service already exists in Belgium to verify the fertilizing qualities of artificial manures and the nutritious value of patent and other foods for cattle, and henceforth when buying a disinfectant in Belgium the purchaser must be careful to see that the parcel or bottle bears the inscription "*Désinfectant soumis au contrôle du Gouvernement.*" To be admitted to this control the samples must be forwarded accompanied by an explanation describing the composition and germicidal power of the disinfectant. First an examination will be made to see if the samples correspond with the description attached. Then the Superior Council of Hygiene has been consulted; and if the decision is favourable the manufacturer should hold himself ready to show his books to the persons delegated for that purpose by the Minister. As all advertisements and labels are to be submitted at the same time as the disinfectant itself, there will be a Government guarantee that no statement is made that is not justified by the analyses and experiments. Further, the Government itself will send every year a report concerning its examinations of disinfectants to all medical committees, authorities, and public medical functionaries, and to all public administrations. By his agreement with the Government the manufacturer undertakes to sell disinfectants similar in every respect to the samples submitted for analysis, and to affix labels explaining clearly how they are to be diluted and employed. The products must be numbered and the date of their manufacture given. A purchaser buying more than £16 worth of disinfectant may have an analysis made specially for him, in which case three samples must be taken in the event of dispute. If the disinfectants do not continue to correspond with the descriptions given of them on the labels and the analyses that were made in the first instance, the Government may at once rescind the contract and seize and withdraw from circulation all bottles or packets bearing the label stating that the article had been submitted to analysis by the Government. These measures should largely contribute to clear the market of spurious products.

THE King has given Mr. John Warnock, M.D., B.Sc. Edin., M.R.C.S., Director of the Government Hospital for the Insane at Abbassia, His Majesty's Royal licence and authority to accept and wear the Insignia of the Third Class of the Imperial Ottoman Order of the Osmanieh, conferred upon him by His Highness the Khedive of Egypt, in recognition of valuable services rendered by him.

THE report for 1908–09 of the medical officer of the Local Government Board has just been issued and proves yet again the abundance of work that is discharged by the department in this section of its duties. We shall review the report in detail as usual.

WE regret to announce the sudden death on Jan. 18th of Dr. Stanley Bean Atkinson, well known both as a practitioner and as a medical jurist. We hope to publish a note of his career in a subsequent issue.

Sir William J. Sinclair, M.A., M.D., professor of obstetrics and gynæcology, has been appointed Pro-Vice-Chancellor of the University of Manchester in place of Professor William Stirling, whose term of office has expired.

THE NORTH DEVON INFIRMARY, BARNSTAPLE.—At the quarterly meeting of the governors of the North Devon Infirmary it was decided, on the recommendation of the committee, to establish a dental department in connexion with the infirmary. It was stated that the initial expense of the scheme had been guaranteed.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

IV.[1]

Cardio-vascular Resistance.

THE blood as it traverses its conduits meets with resistance. Part, quite a small part, of the energy communicated to the blood by the heart is manifested as forward movement (kinetic energy); the rest appears as tension energy, or blood pressure, which may be defined as the pressure which the blood exerts laterally against the vessel walls. This latter is spent in overcoming the resistance offered to the onward movement of the blood, being thereby converted into heat. Thus it is that the fall of the blood pressure in different parts of the vascular system is an accurate measure of the resistance overcome.

In order to understand the nature of the resistance offered to the circulating blood it will be well first to consider briefly some of the laws governing the flow of liquids through tubes. Setting aside the resistance due to the obliteration of a vessel from external pressure, practically the whole of the resistance which the circulating blood normally encounters is due to the friction of the blood particles (plasma molecules and, to a less extent, blood corpuscles) against one another. The blood particles are separated from the vessel wall by a layer of plasma, and the outer film of this being stationary there is no actual friction between the blood and the cardio-vascular walls.[2]

Now, the degree of friction produced by the rubbing together of two bodies depends upon: 1. The facility with which the two bodies can be made to move on one another: a sleigh generates more friction on rough ice than on smooth ice. 2. The force with which the two bodies are pressed against one another: a heavy sleigh generates more friction than a light one. 3. The extent to which the one body travels over the other in a given time: a rapidly moving sleigh generates more friction in a given time than one moving slowly. Applying these principles to the circulation we find that blood friction varies with: (1) viscosity; (2) blood pressure; and (3) the extent to which adjacent particles of blood move against one another in a given time.

1. *Viscosity.*—Friction increases with viscosity. It needs four and a half times as much force to drive blood as it does to drive the same quantity of water through a tube. As showing how viscosity influences resistance, it may be mentioned that when blood is driven through fine tubes the resistance increases as the contained oxygen is diminished, and also that it may be modified by the addition of various drugs to the blood. These effects can only be produced by a modification of blood viscosity. Similar modifications in blood viscosity and resistance have been obtained by injecting drugs into the circulation, after removing, as far as possible, the influence of the vaso-motor system by nerve division.

There has been much discussion as to how far modifications in blood viscosity influence resistance in the living subject. Though there can be no doubt that resistance varies directly with the degree of viscosity (the calibre of the blood-vessels remaining the same), we must not forget that modifications in viscosity may be met by compensatory modifications in vascular bore. We might expect, e.g., an increase of resistance brought about by an increase of viscosity, to be met by a corresponding fall in resistance through arteriolar dilatation.

I much doubt the influence of viscosity in appreciably modifying resistance in the living subject. I believe we may accept it as a fundamental principle that modifications of resistance are essentially determined by modifications in the degree of arteriolar contraction. Certain it is that the latter are capable of neutralising the influence of viscosity on resistance: were the blood to become as little viscous as water, blood pressure might yet be raised to dangerous heights by a generalised arteriolar spasm; and, on the other hand, it is very doubtful whether the blood ever acquires such a degree of viscosity as to prevent an extensive opening of the arteriolar floodgates from allowing it to rush with fatal facility into the veins. This consideration makes it at least doubtful whether there is any constant relation between blood viscosity and blood pressure.

---

[1] Nos. I., II., and III. were published in THE LANCET of Jan. 1st (p. 48), 8th (p. 121), and 15th (p. 193) respectively.

[2] Blood corpuscles may occasionally adhere to the walls of the capillaries, but the resistance thus caused is so small as to be practically negligible.

2. *Blood pressure.*—The higher the blood pressure the more are the blood particles pressed against one another and the greater (*ceteris paribus*) the friction between them. Hence it is that the increased resistance resulting from arteriolar contraction is not solely due to the influence of the narrowed arteriolar lumen on resistance, but partly also to the resulting increment of blood pressure. This factor, which, so far as I know, has been neglected by physiologists, is probably inconsiderable.

3. *The extent to which the blood particles move over one another in a given time.*—This depends upon three factors: (*a*) size of lumen; (*b*) rate of flow; and (*c*) the occurrence of eddies at the cardiac and vascular orifices.

Before dealing with these factors let us consider the case of blood flowing through the unbranched portion of an artery. The blood particles in such a cylindrical tube travel in lines ("stream lines" they are termed in hydro-dynamics) which run parallel to one another; and this happens also in moderately curved or tortuous vessels.[3] The stream lines do not, however, all travel at the same rate. The nearer they are to the axis of the vessel the more rapidly do they flow. We may, in fact, regard the column of blood as consisting of a number of tubes ("stream tubes") placed one within the other, the innermost cylinder enclosing no more than a single file of blood corpuscles with intervening plasma. The rate of flow is greatest in the central file, each successive tube outside this moving with diminishing velocity until finally the outermost layer of stationary plasma is reached.

Hence if we imagine a disc of circulating blood occupying the transverse section of a blood-vessel at A B (see Fig. 5) its particles will soon lose their relative position to one another, the successive rings of blood from without inwards after a time bearing the relative positions represented by 1, 2, 3, 4. Or if, instead of a single disc, we imagine a column of blood of which the disc at A B (see Fig. 6) is the front part, then by the time the central file has reached X each successive cylinder will have lagged behind the one it envelopes, so as to produce the appearance of an extended telescope. Inasmuch as the outer film of blood is stationary, it will thus be seen that (as already stated) the resistance which the moving blood encounters in the vessel is due to the friction of its particles against one another.

FIG. 5.

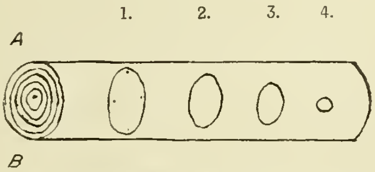
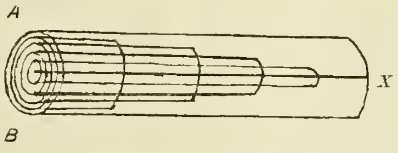


FIG. 6.



We are now in a position to consider the influence of size of lumen and rate of flow on resistance.

(*a*) *Size of lumen.*—The influence of this factor on resistance may be expressed thus: the resistance to the flow of a fluid along a small tube, such as a blood-vessel, is inversely as the fourth power of its diameter—i.e., halving the diameter increases the resistance sixteen-fold. In order to understand why resistance increases with diminution of bore two facts have to be borne in mind: the fact that the resistance is due to friction of the stream tubes gliding within one another, and the fact that the rate at which each moves within the other becomes less and less from without inwards.[4] It follows from this that friction diminishes from without inwards, and such being the case it is manifest that the total mean friction must diminish with every *increment* in the bore of the vessel.

It is on account of the influence of vascular bore on resistance that vaso-motor dilatation diminishes resistance and vaso-constriction increases it. It should be mentioned in this connexion that it is only when the lumen of a blood-vessel is quite small that it opposes marked resistance. Even so comparatively narrow an artery as the radial offers but little resistance: this is shown by the smallness of the fall of blood pressure which takes place within it. Hence it is that vascular resistance is essentially controlled by the arterioles.

It is chiefly on account of the influence of bore on resistance that a yielding vessel offers less resistance to the blood than a rigid one: a yielding vessel tends to give before the blood pressure, and thus to suffer an increase in its lumen. It has to be remembered in this connexion that the bore of the arteries is much greater when distended by the blood than when undistended.

The capillaries, consisting as they do of simple endothelial plates, are capable of considerable dilatation under the pressure of the blood within them, and this dilatation tends to keep down the resistance which they offer to the blood current.

(*b*) *Rate of flow.*—Blood friction increases with the rate of flow. This is to be explained by the fact that the extent to which successive tube streams glide within one another increases with the rate of flow. Manifestly, the more rapid the axial stream the greater is the difference between its rate and that of the outermost tube stream—i.e., the most slowly moving one—and therefore the greater the difference in the rate of adjacent tube streams.

A word now as to the extent to which the two factors in resistance, size of lumen and rate of flow, operate in different parts of the vascular system. If a tube divides and subdivides so that the total sectional area, or "bed," remains the same throughout (as would seem to be the case with the arterial system until the region of the arterioles is reached), the rate of flow, and consequently the resistance from this cause, will remain the same throughout, while the resistance, depending on size of bore, will increase with every subdivision, owing to the progressive narrowing of the vascular bore. If, however, with each division the bed steadily increases, while the bore of the tubes continues to diminish (as was once thought to be the case with the arterial system) the rate of flow will steadily diminish, and thus the increase of resistance due to the increasing narrowing of the tubes will be more or less counteracted by the diminution of resistance caused by the progressive slackening of the flow. Indeed, I believe it to be possible to construct a system of continually narrowing tubes in which the former is more than compensated by the latter, so that with the progressively widening bed resistance becomes progressively less. If, finally, the bore of the tubes remains the same with every subdivision, the great increase in the width of the bed thus produced will lead to a marked slackening of the flow and a corresponding diminution of resistance. This is what actually occurs in the region of the capillaries, which differ from most other blood-vessels in that their bore remains the same with each division and subdivision.

Comparing now the influence of smallness of bore and quickness of flow on resistance, it is to be observed that neither by itself is capable of opposing great resistance. Thus, the narrow capillaries offer but little resistance, because the blood flows slowly through them, and, on the other hand, the rapid current of blood in the large vessels gives rise to little resistance[5] on account of the largeness of their lumen. It is when the two factors—smallness of lumen and high rate of flow—coöperate, as in the case of a hypertonic arteriole, that resistance reaches its maximum. Nothing better shows the small effect of high rate of flow alone in opposing resistance than the comparatively small resistance (equivalent to about 20 mm. Hg) offered by the pulmonary circuit, in spite of the fact that the mean rate of flow through this circuit is considerably greater than that through the systemic circuit.

---

[3] It should be mentioned that these statements only apply to viscous fluids, like the blood, travelling with moderate rapidity through narrow tubes. In the case of less viscous fluids such as water travelling at great speed through comparatively large tubes, the stream towards the centre of the tube is broken up into eddies, becoming turbulent.

[4] The truth of this principle may be studied by observing the flow of water in open channels—e.g., rivers. The more the centre of the stream is approached, the more do the adjacent stream lines tend to flow at the same rate.

[5] This is shown by the fact long ago pointed out by H. Jacobson that "the pressure in the principal arterial trunks remains very nearly identical with that of the bulbus aortæ." Even so narrow an artery as the radial offers comparatively little resistance to the blood flow.

(*c*) *Eddies.*—Hitherto we have considered the flow of blood in a portion of vessel devoid of branches. In such a case the particles of blood flow, as we have seen, in parallel stream tubes. This is true whether the vessel is straight or moderately curved. In the former case the stream tubes are straight; in the latter (as in a moderately tortuous vessel) they are curved, blood friction in each case being caused simply and solely by a sliding of the parallel stream tubes one within the other.

The particles constituting the moving column of blood do not, however, always flow in this regular manner. In certain cases, as when a sharp twist of a vessel occurs (as in the arch of the aorta), or when the blood stream is diverted from the main trunk of an artery into a branch, or, again, when two branches of a vein meet in a common trunk, the blood particles no longer advance in parallel lines, but tend to cross one another at varying angles, thereby forming eddies, and this leads to an augmentation of resistance. We shall see, however, that in the engineering of the vascular system special precautions have been taken to reduce this source of resistance to a minimum.

Influence of length of vessel on resistance.—Though resistance increases directly with length of vessel, it is important to note that great length of vessel does not necessarily imply great resistance. Many considerations prove this. Consider how small is the fall of blood pressure in the larger systemic arteries, and in the entire pulmonary circuit; how easily the blood flows into the systemic veins when the systemic arterioles relax; and again, how small is the amount of pressure needful, even in the larger mammalia, to drive the blood from the systemic capillaries through the entire venous system into the right heart. The comparative independence of resistance on mere length of tubing is further shown by the fact that although the systemic circuit is made up of a number of individual circuits of varying lengths (compare the length of the coronary circuit, e.g., with that of the femoral) they all offer much the same resistance. It is only when the bore of the vessel is small, while at the same time the contained blood is flowing rapidly, as in the case of the spermatic arteries, that length of vessel has marked influence on resistance.[6]

It should be observed that in so far as tortuosity increases resistance it is by an increase in length of vessel and not by virtue of the tortuosity as such, inasmuch as the tube streams in a tortuous vessel (unless, perhaps, the tortuosity is extreme) remain parallel, eddies being thus absent. It is, indeed, easy to show that the flow of fluid through a flexible tube is practically unaffected by rendering it tortuous. It has to be remembered, however, that in the case of the blood-vessels tortuosity implies increase of length and may in this way lead to increase of resistance, and it is conceivable that the tortuosity of certain vessels, such as the coronary arteries and the spermatic arteries (in certain animals—e.g., the ram and the bull), may be for the purpose of offering increased resistance, though I am doubtful of this. In other arteries, such as the facial and vertebral, the object of tortuosity is apparently to allow the vessels to adapt themselves to the movements of surrounding parts.

In pathologically tortuous arteries there is always loss of elasticity, and there may be irregularities of the interior from degenerative changes, both of which conditions make for increased resistance. On the other hand, pathological tortuosity of blood-vessels is always accompanied by a dilatation of them, and this tends to diminish resistance.

By far the shortest vessels in the body are the capillaries, which are probably not more than 1-2000th part the length of the entire systemic segment, a fact which helps to explain why these vessels offer so little resistance to the blood flow.

(*To be continued.*)

ANNUAL REPORT FOR 1908 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

II.[1]

CONTINUING our review of Part I. of this report we note the reproduction from previous reports of the standard tables of mortality as well as of the usual diagrams showing the incidence of the common infectious maladies and of other prevalent diseases in the several metropolitan areas.

It will be known to most of our readers that useful summaries of these facts are contributed by the county medical officer of health to the weekly and quarterly returns of the Registrar-General, but in the present report they are presented in greater detail, the facts being grouped according to age and sex, and in some cases corrected for errors in diagnosis.

Principal Epidemic Diseases.

Among diseases of the epidemic class the notification of which is not at present compulsory measles has recently attracted much attention from the district health officers, who derive their information as to occurrence of cases mainly from the teachers in elementary schools. Most of the annual reports show the number of cases thus coming to official knowledge, but the figures are obviously incomplete and do not correspond to the number of deaths from measles registered in the respective districts. As a result of recent changes in the birth-rate, the proportion of the population now living at the earlier ages has diminished to such an extent that Sir Shirley Murphy has found it necessary to calculate the mortality from this and other children's diseases in terms of the numbers living at ages under five years. From the results of this process for 1908 it appears that in the sanitary area of Hampstead the deaths from measles did not exceed 30 in each 100,000 living at this age, whereas the proportion rose to 558 in the same number living in Bethnal Green, 608 in Bermondsey, and 621 in Stepney. Social condition is found to determine very largely the mortality from this disease, the death-rate rising steadily with the increase of overcrowding, as measured by the proportion of the population living more than two in a room in tenements of less than five rooms. For example, in those sanitary areas where the proportion of overcrowding did not exceed 7·5 per cent. the measles death-rate averaged 212 per 100,000 living at ages under five years, whilst in those areas where 27·5 per cent. of overcrowding existed the rate amounted to 457 in the same number living. Among preventive measures, account is given of Dr. Kerr's method for the limitation of measles infection with the least disturbance of education. When measles appears in a school the practice adopted is to make closure of class-rooms depend on the number of children who are not known to have already had measles, and who are presumably susceptible to infection. The exclusion of susceptible children in preference to class-room closure has often been found the most profitable course. It has further been observed that in order to be useful closure of schoolrooms must take place at the first manifestation of disease and before the whole class has become infected from the earliest cases.

Very similar to the behaviour of measles was that of whooping-cough. In the year 1908 it was less destructive than in any previous year. The deaths in London at ages under five years were at the rate of 184 per 100,000 living, as compared with 421 in the decennium last completed. When the London sanitary districts are grouped according to the proportions of the population living more than two in a room the mortality from whooping-cough varies almost exactly as does that of measles—i.e., it increases *pari passu* with the increase of overcrowding. Thus, according to the experience of the last eight years, whooping-cough was fatal to children under five years old at the rate of 229 per 100,000 living in the least crowded metropolitan areas, whilst it amounted to 331 per 100,000 in the most crowded areas.

---

[6] The question here arises whether the great length of the spermatic arteries may serve a physiological purpose by sheltering the capillaries of the testes from the great pressure of the aortic blood, and whether we have here a clue to the extra-abdominal position of these organs in the mammalia. Among other arguments against this view is the fact that the ovaries are intra-abdominal.

[1] A previous notice of this report appeared in THE LANCET of Jan. 15th, p. 196.

Compulsory Notification of Infectious Disease.

The administrative advantages of compulsory notification are growing steadily apparent each successive year, and nowhere more so than in the cases of scarlet fever and diphtheria, which diseases in their relation to elementary education tax quite exceptionally both the skill and the patience of medical officers of health. Under the Notification Act statistics of scarlet fever and of diphtheria prevalence in London are now available for every year since 1890. And in the present report diagrams are given showing the ratio of cases to population, as well as the percentage fatality among the cases occurring in each month of the last 17 years. The tables showing the distribution of scarlet fever attacks at various ages are exceedingly valuable, for the facts are now sufficiently numerous to eliminate error due to paucity of data. In both sexes the year of life in which the greatest proportion of scarlet fever attacks occur is the fourth. and this is true for each of the periods from 1893–95 to 1906–08 inclusive. In this connexion, however, Sir Shirley Murphy has drawn attention to the fact that in consequence of the declining birth-rate the age constitution of the child population has considerably changed, and it is certain that this change will affect the figures in these tables when the data of the next census are available. With the object of indicating recent changes in the age incidence of scarlet fever, tables are appended which show that the general decline observed at most other ages has not been experienced at ages 3, 4, and 5 years among males, or at ages 4, 5, and 20 years among females. According to the experience of 1908 the first and second years of life are the most fatal to infants suffering from scarlet fever. The usual table is inserted showing the relation of holiday influence to scarlet fever prevalence in London during 1908. From this it appears that during the four weeks of summer holiday influence there was a decrease equal to 11 per cent. in the notified attacks of scarlet fever amongst children of school age—i.e., from 3 to 13 years—whilst in the four weeks following the weeks of holiday influence there was an increase of 45 per cent. in the notified attacks. Interesting excerpts are quoted from the reports of district medical officers of health, giving particulars of the spread of scarlet fever by means of mild and unrecognised cases, and with respect to these Sir Shirley Murphy remarks that "the ability to limit the spread of this disease depends on the opportunity for prompt detection of first cases. The absence of a child from school is often the first indication that the child may be ill. Any arrangements which can be made to secure earlier knowledge of the cause of this absence promise to lessen the opportunity for infection of other members of the family if the school child is suffering from an infective malady. In the same way such improved arrangements would lessen the probability that a child suffering from a mild attack of scarlet fever would return to school after a few days' absence and before it had ceased to be infectious." It is satisfactory to learn that the proportion of notified cases of scarlet fever admitted to the hospitals of the Metropolitan Asylums Board continues to be very large, averaging between 85 and 90 per cent. in the last five years.

Diphtheria prevalence in the metropolis has not varied greatly in the course of the last five years, the cases notified having ranged from 1·4 to 1·8 in each 1000 of the population, and the case mortality from 8·4 to 10 per cent. of the attacks. It is desirable, however, to point out that both these rates may be affected by the degree in which bacteriological methods are employed for diagnostic purposes, for it is certain that their systematic use leads to the detection of clinically mild cases of diphtheria which otherwise would probably have escaped notice. Sir Shirley Murphy reports that the use of bacteriological methods for administrative purposes continues to increase in London. In the year under notice more than 8000 bacteriological examinations were made, one-fifth part of which gave positive results. Particulars are given of the procedure adopted in various districts for limiting the spread of diphtheria. For example, in Bermondsey whenever a case is reported other members of the family are invited to submit to bacteriological examination, which is repeated after the patient's return home from hospital. Of 315 persons thus examined, 13 were found harbouring diphtheria bacilli, and of these 4 subsequently developed that disease. In Wandsworth, on the occurrence of diphtheria in the schools, the throats of all contacts are swabbed. The houses of absentees are visited and all children with sore throats are treated similarly. No child is allowed to return to school until found to be free from diphtheria bacilli. Again, in Camberwell all children who have been treated at home are examined bacteriologically before return to school. In the quinquennial period 1903–07 diphtheria was most destructive in the sanitary area of Poplar, and least so in the City of Westminster and in Hampstead. In London generally the incidence of attack was greatest upon both males and females of the age of three years, whilst the incidence of death was greatest among males of one year and among females of three years old. In both sexes the fatality was greatest among infants under the age of one year. The usual table is repeated showing the influence of the summer holidays on diphtheria prevalence among children of school age. From this we note that in the four weeks of holiday influence there was a decrease of 1 per cent. in the notified cases of diphtheria at ages 3–13, whilst in the four weeks following the weeks of holiday influence the notified cases showed an increase of 21 per cent. From an instructive table showing the fluctuations of diphtheria prevalence at the various ages, it appears that when the corrected rates of 1906–08 are compared with those of 1893–95, the ages under five have not shared equally with the older ages in the decline of diphtheria incidence recorded in the table.

Enteric fever prevalence in London has shown little change during the last four years, the notified cases in each year having been in the proportion of 3 per 10,000 of the population at all ages—a rate which compares favourably with that of the decennium 1891–1900, which was 8 in the same number living. Among metropolitan districts in the period 1898–1907 enteric fever was most prevalent in Poplar and in Shoreditch, where the reported cases were equal to a rate of 9 per 10,000 living; it was least prevalent in Lewisham, where the rate did not exceed 3 in the same population. During the year 1908 the case-rate, the death-rate, and the percentage fatality among the notified cases of enteric fever were higher among males than among females. The greatest incidence of attack was upon males at ages from 15 to 20, and upon females at ages from 10 to 15. The greatest incidence of death was upon males from 35 to 45, and upon females from 25 to 45. The proportional fatality among the notified cases was highest among males of 55 years and upwards, and among females between the ages of 45 and 55. The behaviour of enteric fever in recent years has been peculiar in this respect, that several local prevalences of the disease have occurred in poor populations, and lasting often for a considerable period. In the year under notice two such prevalences are reported, one in Bethnal Green, the other in Shoreditch. By the courtesy of Dr. G. P. Bate, Dr. Hamer was allowed the opportunity of investigating the former outbreak, whilst Dr. L. T. F. Bryett supplied him with the means of investigating the latter. It would appear that both Dr. Bate and Dr. Bryett consider the prevalences in these respective districts to be due to infection from person to person, whilst Dr. Hamer, on the contrary, sees reason for thinking them to have been caused by an infected food-supply. In both districts the locality implicated was occupied by very poor persons living under squalid conditions. In Shoreditch it was found that in numerous instances two or three, or even more, cases had occurred in a single house. The epidemic in Bethnal Green occurred in the months of September and October, whilst that in Shoreditch extended over a much longer period.

Tuberculous Phthisis in London.

In his remarks on the behaviour of mortality from pulmonary tuberculosis or tuberculous phthisis in the metropolis Sir Shirley Murphy is able to report a further continuance of the decline which has been observed in recent years, the death-rate from that disease having been equal to 1·32 per 1000 living at all ages, which is the lowest metropolitan rate on record, but is higher than the rate in England and Wales by 0·21 per 1000. If the London rates for the periods 1901–04 and 1905–08 be compared we find that the mortality has declined by 13·2 per cent. By studying the distribution of fatal phthisis in its relation to age and sex Sir Shirley Murphy arrives at the conclusion that with the decline of phthisis mortality in London alteration is taking place in the age incidence of death. Comparing the mortality in 1901–07 with that of the five decennial periods immediately preceding he tells us that, broadly speaking, the decline in phthisis mortality among persons above the age of 15 years has been most marked among females, while among persons below that age the decline has been more nearly the same in both sexes. This behaviour of the figures he regards as consistent with the hypothesis that improvement in the conditions of home life has been a material factor in the decline, inasmuch as home conditions would probably affect males above the age of 15 in a less degree than females, while both sexes under that age would probably be more evenly affected. A well-known table of former reports is repeated here, showing the close relation which exists between social conditions as measured by "overcrowding" and excessive phthisis mortality. The table relates to the period 1901–08, and from it we learn that whereas in the least overcrowded metropolitan districts the death-rate from phthisis is equal to 1·062 per 1000, in the most overcrowded districts it is nearly double that amount, or 2·080 per 1000. Sir Shirley Murphy gives an account of the various administrative measures either existing or in contemplation for the control of phthisis prevalence in the metropolis, and to them we purpose to refer on a future occasion.

(To be continued.)

MEDICINE IN SOCIETY IN THE FOURTH CENTURY A.D.

MEDICINE and kindred studies have always possessed a charm for non-medical persons, and this for various reasons. There is one class the members of which are always glad to have the opportunity of meeting "dear Doctor ," in the hope that they may obtain some information of value without the necessity of paying a fee. Others discuss medical matters which they do not understand, but which they fancy they would like to, probably on the principle of "omne ignotum pro magnifico"; and others, again, put forward medical or physiological problems from a genuine wish to obtain knowledge about their bodies. All these classes are much in evidence at the present day, and every medical man who mixes much in general society must be aware how frequently medical matters are discussed at social gatherings. Appendicitis has had its day, and the fashionable lady of the hour instead of asking her neighbour as to the health of her children, languidly inquires, "And how is your opsonic index?" *Mutatis mutandis*, however, all this is nothing new, for Plutarch in his "Symposiacs" has collected the substance of various conversations, "which both at Rome and in Greece we have disputed on amidst our cups and feastings." Among the subjects discussed were various questions dealing with medicine and natural philosophy, and a great part of these Macrobius, circa A.D. 380, "lifted" for his Saturnalia. Practically nothing is known of Macrobius apart from his works. But among his friends were some of the great men of the day, and we may mention Praetextatus, Symmachus, Flavian, Caecina Albinus, and Servius, the well-known commentator on Virgil. Macrobius introduced all these people into his "Saturnalia," a treatise which he wrote for the use of his son, and which may be called a fourth-century "Complete Gentleman." It dealt mainly with Virgil as being "omnium disciplinarum peritus," and the work is written as a symposium. The persons of the dialogues are represented as meeting during the Saturnalia, which lasted three days, at the houses of Praetextatus, Flavian, and Symmachus. At the meetings they discussed various subjects, and among others sundry medical and scientific subjects which are treated in Book VII. The book opens with a discussion on the art of conversation. It is extremely bad taste, says one of the characters in the book, Eustathius, to ask a man a question in company unless he knows his subject well. For in that case he will either have to confess his ignorance, which will put him to shame, or else he must answer rashly and at haphazard when again his ignorance will sooner or later be apparent (VII. 2, 5). Prætextatus remarked, "Come, now, all you men, let us talk of something fitting conviviality, not so much about eating as about the nature of our bodies or other matters, especially as here is our friend Disarius, who is specially fitted from his learning and his art for the discussion of matters such as these, and let each one of us put a question in turn" (VII. 4, 1).

All the guests decided that Praetextatus should ask the first question, and accordingly he said, "I wish to know whether a simple or a varied diet (simplex an multiplex cibus) is the more easily digested and which is the better for health?" Disarius, who is described as the leading physician of the day at Rome (Qui tunc Romae praestare videbatur ceteris medendi artem professis, I. 7, 1), promptly replied: "If any unskilled person had asked me this question, I should have told him (since common people always learn better from example than from reason) to look at cattle, whose diet is simple and uniform, and which are far more healthy than human beings. But those cattle which are picked out to be fatted and are fed on spiced cake (offa) often fall ill. Then, too, I should ask him: 'What would you think of a physician who showed so gross neglect in the treatment of a fever patient as to order him a mixed diet and not a simple one?' Again, a variety of food is to be avoided just as much as mixing your drinks. Everyone knows that a man who drinks different kinds of wine suddenly gets drunk, and that, too, without having taken very much." Disarius went on to say that Praetextatus being a learned man did not want example but reason, and he then launched out into a long discourse upon the physiology of digestion which we may summarise as follows:—"Indigestion arises either from the quality of the juice into which the food is converted, so that it is unfitting for the 'humor' which occupies (obtinuit) the body, or from the variety of the food itself, so that the natural forces are not powerful enough to break down all the substances with which they have to deal. If a man takes one food alone he knows at once whether it suits him or no; if it does not, he knows that that particular food is to be avoided. A mixed diet, on the other hand, produces a variety of juices and the 'humours' which are produced thereby do not agree with one another. Moreover, the blood into which these are translated by the agency of the liver is neither properly fluid nor pure, and passes turbulently into the veins. Hence arises a very fountain of diseases from the warring of the discordant humours. Again, in a mixed diet the various substances are not all digested at the same rate and so the sequence of the digestive process is upset. All food really undergoes four digestions, and, besides, there are four forms of energy (quattuor sunt in nobis virtutes) which deal with the food. The first is that by which the food is attracted into the stomach, the second that by which it is retained, the third is that by which it is transmuted from one thing into another, and the fourth is that by which the transmuted food is separated into that which is used in the body and that which is cast out. The four digestions are the following: the first in the stomach; the second in the liver; the third in the veins and arteries, where the watery part is separated and goes into the bladder and the pure, fattening blood is distributed all over the body; while the fourth is that process by which every member of the body takes up what is necessary for it. All this elaborate arrangement is likely to be upset by a mixed diet." This argument having met with the approval of the company, Evangelus, who is the rude young man of the book, exhorts Eustathius to argue on the other side, which he proceeds to do at great length. Disarius replies that Eustathius had treated the subject as a matter of dialectic, but that he himself had argued as a physician. "But," he adds, "try both and experience will teach you which is the better for health."

Considerations of space forbid us to give in detail all the problems which are discussed, but we may mention some of them. Flavianus asks, Why, according to Aristotle, do women very rarely get drunk but old men do so easily? Disarius is of opinion that the system of a woman being very moist and her body being full of pores the wine evaporates very quickly, whereas an old man has a dry, hard skin, through which the wine cannot easily pass, whence it ascends to the very seat of the mind. Evangelus asks why a man becomes giddy if he spins round. Disarius answers that the body can move in seven different ways—forwards, backwards, to the left, to the right, upwards, downwards, and with a rotational movement. Of all these motions the last alone is found in divine bodies such as the stars, and ordinary animals are not accustomed to it. Hence, if they are spun round, the "spiramentum," by which the brain and indeed all the senses of the body are governed, is overwhelmed by the humours, and dizziness, tottering, and loss of sight supervene. But by practice the spiramentum can get accustomed to the rotation and will continue to act as governor.

Other questions are propounded, such as, What is the cause of blushing? Why cannot clothes be washed in salt water? Which came first, the egg or the hen? Evangelus asked this old, old question, and went on to say that there was something else that he really wanted to know. There had been a boar hunt on his estate at Tibur; some of the game had been brought into Rome by day and some by night under a bright moon. The former kept quite sweet, the latter putrefied. When this was noticed, as there were some more to come in the next night, they stuck a bronze knife into the bodies and they did not putrefy. Why was this? Disarius replies that putrefaction requires both heat and moisture. Excess of heat stays it by drying up the moisture. The sun is hot, therefore the carcasses exposed to it did not decay. The moon has no obvious heat, therefore the carcasses brought in by moonlight decayed. Eustathius is not quite satisfied with this answer. He thinks that there is some particular property in moonlight which is harmful. As to the bronze knife, he thinks that part of the story is probably true. For bronze possesses a powerful quality which physicians call styptic, and scales of bronze are among their remedies for putrefaction. Aristotle, too, says that wounds made by a bronze knife heal up much better than those made by an iron weapon, because bronze possesses a remedial and drying quality which it transmits to the wound which it inflicts. Moreover, those who work in copper mines have very good sight, and if any of them should have lost their eyelashes they begin to grow again. For the emanations which proceed from the copper draw out and dry up the humours which caused the disease. It is interesting in connexion with this alleged "influence" of copper ore to remember that workers in copper works have been reported as being singularly little liable to be attacked by cholera.[1]

There is a forecast of modern anatomy in Book VII., cap. ix., in a discussion upon sensation, where Disarius gives an account of what may be called the cranial nerves. There are seven pairs of them arising from the ventricles of the brain, and according to Disarius their destination is as follows. The first goes to the eyes, the second to the ears, the third to the nose, the fourth is the gustatory, the fifth "energises the whole body," the sixth goes to the stomach, and the seventh supplies the spinal marrow with sensation.

Some of the books of the Saturnalia are lost, notably those on astrology and philosophy, but if the son read and remembered his father's encyclopædia it is evident that he would have been well educated, and as regards natural philosophy not so incorrectly as might be supposed.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 21st, 1832.

ANALYTIC NOTICE.

Experiments on the Disinfecting Powers of Increased Temperatures. By WILLIAM HENRY, M.D., F.R.S.

IN the *Philosophical Magazine* and *Annals*, for November 1831, Dr. Henry, of Manchester, described a series of experiments, which he performed with a view to investigate the effects of increased temperatures on various infectious principles. A continuation of these researches appears in the same Journal for the present month, and we believe we cannot devote a moderate portion of our pages to a more interesting subject, especially when considered in juxtaposition with the important Report on the reputed disinfecting agency of chlorine, which we have condensed in the foregoing article.

From the experiments contained in his first paper, to which our limits do not permit us to allude in greater detail, Dr. Henry conceives that he has established—

First, That raw cotton, and various kinds of fleecy goods, manufactured for clothing from that or other materials, sustain no injury whatsoever, either of colour or texture, by exposure for several hours to a dry temperature of nearly 212° Fahrenheit.

Secondly, That the infectious matter of cow-pock is rendered inert by a temperature not below 145° of the same scale.

From the second of these results Dr. Henry concludes, that the more active contagions are probably destructible at temperatures not exceeding 212°. The appearance of the cholera at Sunderland induced him to extend the investigation, in the hope, as he expresses himself, that, should cholera be proved to be a contagious malady, his results might tend to put a check to its devastations.

. . . .

We are bound in justice to add, that Dr. Henry is by no means the first author who has speculated on the application of heat as a disinfecting agent. Sir Humphry Davy, for example, distinctly alluded to it in his evidence before the Quarantine Committee in 1822. Again; many of the processes in our arts and manufactures might have afforded Dr. Henry ample evidence of the high degree of temperature which may be applied to various fine organic tissues with perfect safety to their texture, and without detriment to their subsequent durability.

The information obtained on this subject by the Central Board of Health, has induced that body to recommend that the clothes worn by, and the bedding used by, patients supposed to have been labouring under the influence of malignant cholera, shall, in all cases, be subjected to the influence of heat in a stove or oven, or immersed in boiling water.

THE REGISTRAR-GENERAL'S ANNUAL REPORT FOR 1908.

II.[1]

Tuberculosis.

CONTINUING our review of the Registrar-General's report, we observe that, as has been the case with its recent predecessors, a considerable part of the present volume is allotted to the subject of mortality from tuberculosis. We gladly recognise the familiar diagrams of former reports showing the fluctuations of tuberculous mortality in the course of the last half century, the mortality from the pulmonary form being indicated by darker and that from other forms of tuberculosis by lighter shading. As the whole of the death-rates are based on the age and sex conditions of the population in 1901 they may be accepted as fairly reliable.

That the public conscience should at length have been awakened to the necessity of effective action for the arrest, if not the extirpation, of this national scourge is what might have been expected from the fuller knowledge we now possess of the nature and development of this disease. Although in England and Wales generally the loss of life stated to be caused by tuberculosis is now less than half of what it was some 50 years ago, it still accounts for one in ten of the total deaths registered. And in this regard, what appears to us of grave importance is the fact that pulmonary tuberculosis, which causes seven-tenths of tuberculous mortality in the aggregate, selects its victims of both sexes whilst in the prime of life, and therefore at precisely that stage when their economic value as mothers or fathers or as bread-winners is at the highest point. The preventability of this, or tuberculous phthisis, is now generally recognised both at home and abroad, and as a consequence large sums have already been expended in this country on sanitary measures which, although perhaps designed for other purposes, have undoubtedly contributed to the limitation of this disease. English mortality from pulmonary tuberculosis in the year under notice was the lowest on record, and corresponded to a rate of 1115 per 1,000,000 living at all ages and of both sexes. From the usual table it appears that in the five years ended 1907 the urban phthisis-rate at all ages was higher than the rural rate by 25 per cent. among males, but was lower by 1 per cent. among females. It is, however, important to note, with respect to the mortality at different ages, that the rate is higher in the rural areas than in the urban, at ages from 15 to 35 among males, and at ages from 10 to 35 among females. Between the decennial period 1851–60 and the eight-year period last ended there has been a fall of 70 per cent. in English mortality from phthisis among persons of both sexes below the age of 25 years. Compared with the average, in the five-year period last ended there has been a general fall in the death-rate of both sexes at all ages below 55 years; but among men at ages above 55 and among women at ages above 65 years there has been a slight rise. In recent years the greatest proportional fall in mortality appears to have occurred among children below the age of 5 years, but the greatest saving of life has been experienced at ages from 35 to 45 years.

---

[1] THE LANCET, vol. ii., 1869, p. 655; vol. ii., 1873, p. 741; vol. i., 1877, p. 441.

[1] Previous notices of this report appeared in THE LANCET of Jan. 1st and 8th, 1910.

The duty of providing for the hospital treatment of persons suffering from phthisis is now recognised by the more public-spirited of our sanitary authorities. It therefore becomes imperative that accurate official knowledge should be generally accessible respecting the areas exceptionally infested with this malady. A table will be found in this report which seems to meet the requirements. The several counties of England and Wales suffering excessively in this respect are there tabulated in order, and from this it will be seen that of the 15 counties known to possess rates of mortality above the average for England and Wales as a whole, not fewer than seven are Welsh. In these areas the rates vary remarkably. For whilst in the county of Suffolk the average phthisis-rate in the last five years has not exceeded 1177 per 1,000,000 living, it was nearly double that amount, or 2270 per 1,000,000 in the county of Cardigan.

Pulmonary tuberculosis still causes excessive mortality in Austria-Hungary, Servia, and Ireland, but in Scotland, Prussia, the Netherlands, and Belgium a marked diminution in mortality has recently been observed. The English rate —viz., 1·22 per 1000—was exceeded in seven continental countries, whilst in two only was the rate below that of England.

Among other forms of tuberculous disease we observe that both meningeal and peritoneal tuberculosis are much less fatal now than they formerly were. Not less than 67 per cent. of the death-rate from these diseases respectively occur within the first five years of life. From a table we learn that since the year 1868 there has been a fairly steady fall in the death-rate from tuberculous meningitis, and since the year 1878 a similar fall in that from tuberculous peritonitis. From the first of these maladies the mortality in the first quinquennium of life was equal to 97 per 100,000 living; from the latter it amounted to 79 in the same number living. In the year under notice, as in previous years, both meningeal and peritoneal tuberculosis were much more fatal in the town than in the country. Of the total deaths from tuberculosis, about a tenth part were returned as either from general tuberculosis or from "scrofula," or else from tuberculous affections of the bones or joints, and of these deaths, more than one-third were those of children under the age of five years. The mortality returned under the heading "other tuberculous diseases" differs from that from the specified forms of this infection, inasmuch as it has shown no marked tendency to decrease in recent years. The mortality ascribed to tuberculosis of bones, joints, &c., has increased slightly since 1901, whilst that from general tuberculosis has shown a slight decrease. As a registered cause of death "scrofula" appears to be disappearing almost entirely.

Pneumonia.

Notwithstanding the fact that influenza was more fatal in the year under notice than in any year since 1900, pneumonia appears by the returns to have shown a marked decline. Taken together the deaths from the different forms of pneumonia corresponded to a rate of 1383 per 1,000,000 among males, and to a rate of 988 per 1,000,000 among females. The mortality from the principal types of this disease varies considerably according to age. Thus, in 1908, as in previous years, lobar or croupous pneumonia was most fatal at the later ages, and broncho-pneumonia, whilst also dangerous at advanced ages, was most fatal in childhood.

Malignant Disease.

The returns for 1908 show still further increase as compared with past years in the mortality from malignant disease, the rate among males being equal to 813 per 1,000,000 living of that sex, or 4 per cent. more than in the previous year, whilst that of females remained practically stationary at 1027 per 1,000,000. This tendency to exceptional increase in the mortality of males has been noteworthy in the records of the last five years; but the usual diagram relating to the period 1859–1908 shows that up to the year 1891 the opposite was the rule, for the female rate was generally much greater than the male.

In the year 1908, as compared with the previous decennium, the mortality among men at most stages of life showed an increase, while among women up to the ages of 55 years a decrease was observed. Among women aged from 35 to 45 the increase of recorded cancer mortality practically ceased about 1879, when the rate was 856 per 1,000,000 living at that age, as against 863 per 1,000,000 in 1908. This is true for the age-group 45 to 55 also since the year 1891, when the mortality was 2348 per 1,000,000, as compared with 2398 in the year now under report. For the age-group 55 to 65 years the mortality curve is still on the ascendant, but its rate of increase has slackened to such an extent as to suggest that possibly this group also may repeat the experience of the earlier age-groups. Unfortunately, there is as yet no evidence of diminution in the increase of cancer mortality at any of the ages from 65 onwards. In the male sex, with its much more rapid increase of cancer mortality, the only age-group above 35 that shows any evidence of abatement in the rate of increase is that from 35 to 45, the increase at which age-group, whilst still continuing, shows a slackening during the present century which is very perceptible. Subject to certain important reservations set forth in the report, the general conclusion is that this country occupies an unenviable position with respect to mortality from cancer, the rate in England and Wales being exceeded in only two European countries—viz., Switzerland and the Netherlands. Scotland occupies a better position, and so does Ireland. Cancer mortality varies greatly in Australasia, varying from 0·74 per 1000 in Victoria, to 0·45 per 1000 in Western Australia.

Affections of Particular Organs.

Respecting the deaths from affections of particular organs, we learn that while a general decline has been observed in the fatal cases of certain so-called inflammatory disorders, there has been a general increase in those of others. In the interval between the years 1889 and 1908 the mortality referred in the aggregate to meningitis, bronchitis, laryngitis, pleurisy, and peritonitis has fallen by 45 per cent.; while the aggregate mortality from otitis, endocarditis, nephritis, enteritis, and appendicitis has risen by 52 per cent. To some extent these changes in mortality are apparent only, and depend on improved medical certification. From the answers to inquiries addressed from the General Register Office to medical practitioners concerning deaths originally certified as from inflammation of brain, larynx, or peritoneum, it appears that many of these deaths have been classed as due to puerperal sepsis, tuberculosis, diphtheria, malignant disease, cerebro-spinal fever, and other definite headings. On the authority of the medical certifiers in each case, the majority of the deaths originally returned improperly have been transferred to appropriate headings in the list of causes of death.

Puerperal Sepsis and Accidents of Childbirth.

It is satisfactory to note that the mortality among puerperal women, both from puerperal sepsis and from accidents of childbirth, is still continuing to decrease. In the year under notice the mortality from all causes whatever connected with the puerperal state was equal to a rate of 4·81 per 1000 births. It is shown by a table that of the 4521 deaths occurring among puerperal women at all ages, not fewer than 4454 were observed at ages from 15 to 45 years. If, therefore, these deaths are calculated not in the total births but on the number of women living within the same age limits, the mortality will be equal to 503 per 1,000,000, or 26 per 1,000,000 fewer than in the year 1907.

Infantile Mortality.

Discussing the subject of infantile mortality Dr. Stevenson remarks that during the greater part of the period of 28 years elapsed since 1881 there has been no fall in the rate of infant mortality in England and Wales; and he refers to tables which show that the same statement holds good as far back as the commencement of civil registration. From 1881 to 1899 the rate was slightly in the ascendant, but since the latter year that rise has been more than compensated for by a considerable fall—a feature common to the experience of most other European countries in the same period.

Among continental countries in which a similar fall has been observed in the past few years, but not previously, may be mentioned Prussia, Denmark, and Norway. If the period of time since 1881 be divided into two portions—the first extending from 1881 to 1898, the second including the years that have elapsed since the latter date—we learn that during the earlier period infant mortality in five out of the 12 countries dealt with—viz., Prussia, Norway, Denmark, Belgium, and France—remained about stationary. That of four others—the Netherlands, Switzerland, Finland, and Sweden—fell; and the mortality of three countries only—viz., England, Scotland, and Ireland—rose somewhat during the first period. In the second period a fall took place in each of the 12 countries. This was considerable in the case of England, France, the Netherlands, Norway, Prussia, and Denmark, and less marked in the case of Ireland, Scotland, Finland, Belgium, Switzerland, and Sweden. Of the 12 countries above mentioned not one shows greater progress in this respect than does our own.

SLEEPING SICKNESS IN UGANDA.

Sir Henry Hesketh Bell, K.C.M.G., late Governor of the Uganda Protectorate, now High Commissioner of Northern Nigeria, during his recent stay in England wrote an exhaustive report on the measures adopted for the suppression of sleeping sickness in Uganda, in the hope that the experiences there gained may be of value in connexion with the solution of similar problems in other parts of Africa. The document, which is dated "Downing-street, Nov. 17th, 1909," has now been issued as a Parliamentary paper.

Historical Account: Cause of Disease and Method of Infection.

Sir Hesketh Bell traces the history of the disease from its first appearance in the Protectorate down to the present time and records the various investigations, medical and other, which have been conducted in regard to its nature and origin as well as the various measures which have been taken from time to time for its treatment and eradication. In April, 1903, the discovery that the disease was due to a trypanosome conveyed by the Glossina palpalis, a species of tsetse fly, was made in circumstances that will be familiar to everyone. Further investigations led to the collection of a considerable amount of information concerning sleeping sickness which led to the following conclusions, as summarised in a despatch addressed by the Governor to Lord Elgin, then Secretary for the Colonies, in 1906:—1. That, prior to the outbreak of the disease, tsetse flies were quite as abundant in Uganda as they are now, but that no ill effects seemed to attend their bites. 2. That the disease, generally speaking, is almost always transmitted from a sick person to a healthy one by the bite of a tsetse fly (Glossina palpalis). 3. That sleeping sickness may, in some cases, be transmitted from an infected animal, but that the risk from such a source is almost *nil*. 4. That the presence of even a single diseased person in a locality infested by tsetse flies may entail the infection of the whole community. 5. That the disease so far appears to be incurable. 6. That a tsetse fly is able to retain the power of infection for a limited period. Some experts give a limit of two days, others 14, while others consider the limit to be undefined. 7. That a more or less extended period elapses between the bite of an infected fly and the appearance of the characteristic signs of the disease. 8. That there are no authenticated instances of the transmission of the disease from sick persons to healthy ones in districts where the tsetse fly is not found. 9. That the tsetse fly is nearly always found in the near neighbourhood of fresh water, where the vegetation is luxuriant and shade abundant. That it is only found where those conditions exist and that the infected belt is a narrow one. 10. That the flies quickly abandon places where, through the clearing of vegetation, the conditions favoured by them are removed.

Measures of Prevention: Lessened Mortality.

In view of these conditions the conclusions were arrived at by the authorities that they must either try completely to exterminate all tsetse flies or else remove all infected persons from fly-infested areas. Owing, however, to the extraordinary abundance of the fly, not only on the shores of the great lakes, but also on the banks of all the principal rivers, the wholesale extermination of tsetse flies appeared to be a hopeless project. The alternative measure seemed to be within the power of the administration, and it was hoped by placing all sick persons beyond the reach of the tsetse fly to prevent the flies from procuring the means of further infection. Assuming the dicta of the experts to be correct, the insects would, after a comparatively short period, be incapable of transmitting the disease, and they would become no more dangerous than they were before sleeping sickness had appeared in the country. Eventually action was taken on the following lines: (1) the removal of all infected persons to fly-free areas and their treatment by medical officers in specially organised camps; (2) the temporary removal of all healthy persons from areas infested by flies that are presumably infected; (3) the elimination of flies as far as possible in all localities from which the population cannot be removed, and in all places through which travellers are obliged to pass; (4) further investigations into the life-history of the tsetse fly with a special view to the discovery of conditions that appear to be inimical to the fly; and (5) the study of curative agencies.

The report describes in detail the measures taken for the establishment of segregation camps, the removal of inhabitants from fly-infested areas, the clearing of forest on the lake shore, &c.—steps which have resulted in an immense reduction of the mortality from the disease. It is estimated that between 1898 and 1906 more than 200,000 souls died from sleeping sickness in the provinces of Buganda and Busoga. During 1907 the deaths were about 5000 and in 1908 3662, whilst for the first half of 1909 the returns for Buganda showed a mortality of only 459. It is believed that during the past three years no European resident in Uganda has acquired the disease.

Results of Treatment.

In spite of the continuous efforts that have been made to discover a cure for sleeping sickness, Sir Hesketh Bell thinks that not much progress has been made. Treatment by injections of atoxyl and of allied drugs, in which great hopes were at first placed, has not given the results expected. In some cases, indeed, atoxyl caused blindness to such an alarming extent that its use had to be greatly restricted. Mercury in conjunction with atoxyl seems to have given more satisfactory results, but, adds Sir Hesketh Bell, "I think I am correct in saying that we are still unable to produce a single undoubted cure among all the thousands of cases which have passed through our segregation camps or elsewhere. All that can be claimed for some of the drugs used is that, in a great number of cases, they seem to have prolonged the lives of the patients and to have somewhat reduced the acuteness of their sufferings. Sooner or later, however, the unfortunates all seem to die, and unless a therapeutic cure can soon be discovered every soul affected will succumb to the disease." This, however, is rather a sweeping statement; certainly several observers hold the opinion that atoxyl can cure a number of cases if the treatment be begun early enough in the first stages of the disease.

Period of Infectivity of Glossina Palpalis.

Early in 1909 it became necessary to modify to a considerable degree the theories which had up to then received general acceptance as to the part played by the Glossina palpalis in the transmission of sleeping sickness. It had been accepted as a fact that an infected tsetse fly carried the disease from one person to another by a simple and direct transmission of the trypanosome, and that after a period of about 48 hours the fly, unless re-infected in the meantime, ceased to be infective. On the strength of this theory it was hoped that by removing from the neighbourhood of the tsetse flies every possible source of re-infection the insects would, after two or three days, become as innocuous as they appear to have been before sleeping sickness was introduced into the country. In February, 1909, however, Dr. Kleine, who had worked with Professor Koch in the Sesse Islands, and who was then in charge of a sleeping sickness camp in German East Africa, announced that experiments had proved conclusively that the transmission of sleeping sickness was not a simple mechanical one, but that, on the contrary, it was necessary that the trypanosome should pass through a cycle in the internal organisation of the fly. This process, he asserted, took at least 17 days, and that a fly was incapable of transmitting the disease until the expiry of that period. Dr. Kleine further reported that his experiments had proved flies to be capable of conveying infection up to the seventy-fifth day, and that the limit of their power in that direction still remained to be ascertained. Sir David Bruce has since expressed the opinion that the Glossina palpalis may retain its infectivity for two years. This discovery, though of immense importance, fortunately does not materially affect the validity of the measures taken in the campaign against sleeping sickness in Uganda. The continued infectiveness of the fly, perhaps during the whole of its malevolent life, renders still more necessary the absolute removal of every soul from every district in which those insects are found. So long as a cure for the disease remains undiscovered, nothing but a rigid *tabu* of all fly-infected localities will save the natives of Uganda from a recrudescence of the terrible disease which during the past ten years has wiped out more than two-thirds of the population of the lake shore.

Hopeful Outlook.

In concluding his report Sir Hesketh Bell takes a hopeful view of the future. "I trust," he says, "that I may not be considered presumptuous in expressing the conviction that so long as means are taken to maintain a rigid *tabu* of all fly-infested regions there will be no risk of a recrudescence of sleeping sickness in Uganda. There are still very many thousands in the Protectorate who are stricken with the disease. Failing the discovery of a cure every one of those unfortunates seems doomed to death. So long as they are kept beyond the reach of a tsetse fly they are believed to carry no risk to the healthy people among whom they may now be living. We think we are justified in believing that in the vast majority of cases every individual who may now be dying of sleeping sickness in Uganda contracted the disease before he was removed from his fly-infested home. We anticipate that the number of the affected will now steadily diminish until the mortality from sleeping sickness in Uganda becomes a matter of only minor importance."

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Leeds.—Dr. J. Spottiswoode Cameron, the medical officer of health of this city of 477,107 inhabitants (1908), reports that the general death-rate for that year was 15·5 per 1000 and the birth-rate 24·8 per 1000. The infantile mortality was 138 per 1000 births. There are many interesting points in the report as regards the statistical comparisons of different years, but the most instructive portion, in so far as the readers of THE LANCET are concerned, is probably that which relates to the discovery of tuberculous cows in cowsheds outside the city of Leeds. Dr. Cameron observes that although the powers of inspection of cowsheds inside the city are ample, those for preventing the introduction of tuberculous milk from outside the city are much more limited. The powers as regards tuberculosis in outside cowsheds are contained in the model clauses of a Leeds Local Act of 1901, and by the provision of those clauses it is only possible to visit and examine the cows in cases where the Leeds medical officer of health is of opinion that tuberculosis is being actually caused, which means, as Dr. Cameron puts it, that "the door of the outside cowsheds is locked against us so far as legislation is concerned until the health of some of our citizens has been stolen." But in some instances a special arrangement has been made with milk purveyors, by means of which, through a clause in the contract under which the milk is purchased, it is possible to examine the sheds and the cows from which milk is sent to Leeds. Reliance has for the most part to be placed upon the bacteriological examination of milks coming in from the country, and during 1908 81 samples from 64 different farms were collected and examined. Of this total 22 yielded a positive result *quâ* tuberculosis—i.e., 25·3 per cent. of the milk samples contained tubercle bacilli. But if regard be had only to the number of farms—64—from which samples were taken it might be held that 34 per cent. were sending tuberculous milk to Leeds—a sufficiently serious indictment. Dr. Cameron also draws attention to the difficulty of discovering the cow which is yielding the tuberculous milk, and he furnishes as an illustration the case of a farm, a sample of the mixed milk from which was found to yield tubercle bacilli, although a few days previously the udders of the whole 23 cows were examined by a veterinary surgeon and found to be apparently healthy. Upon receipt of the result of the bacteriological examination the udders of the cows were all carefully examined and in only one (*a*) was there any suspicious condition, and this only a slight increase in the resistance to touch. This animal, as well as another (*b*) which had a slight cough, was isolated and a sample of milk was taken from each. One of these yielded tubercle bacilli, and shortly afterwards the whole herd, including the two cows already isolated, were carefully examined. As a result a third cow (*c*) with a suspicious induration of the udder was isolated. The remaining 20 cows appeared quite healthy and a little latter a sample of milk from the common supply of these 20 apparently healthy cows was taken and yielded negative results. But by this time all the three isolated cows had yielded tubercle bacilli. Subsequently the tuberculin test was applied to 19 of the 20 remaining cows, 14 responding distinctly and 4 doubtfully, and the milk from each separate cow was then examined bacteriologically. Only one of these 19 cows yielded a milk infecting the guinea-pig, and in this one there was no udder disease to be detected by ordinary palpation. This animal was subsequently sold to a cattle dealer, and the farmer received no complaints as to the cow.

The County of Kent.—The total population of this administrative county for 1908 was estimated at 1,037,482, and there are in all 64 sanitary authorities in the county. The birth-rate in the urban districts was 22·5 per 1000, in the rural districts 21·9 per 1000. The urban death-rate was 11·7, the rural 12·5 per 1000. Infantile mortality in the urban districts was 89 and in the rural 84 per 1000 births respectively. The Notification of Births Act, 1907, has not as yet been very widely adopted in the county, and Dr. W. J. Howarth, the county medical officer, does not regard it as desirable that at present this measure should be adopted by the county council, since there is no adequate provision for practically utilising the information obtained. At Beckenham, which is one of the districts where the Act has been adopted, stamped addressed envelopes are supplied to the various medical men and midwives, and upon one corner of such postcards are the words, "The health visitor is requested ...... to attend," the word "not" to be inserted in the blank space. It appears that this word is so frequently made use of that the question of modifying the post-card is under consideration. There are 39 isolation hospitals with some 1250 beds in the county, and Dr. Howarth reports that the well-managed hospitals are proving attractive to the public, who prefer to send their children there to having them treated at home. There are, however, still several districts in the county which possess no isolation hospital. Attention is drawn by Mr. M. G. Yunge-Bateman of Folkestone to the influence of "holiday homes" in spreading scarlet fever. He thinks that these homes ought to be registered in order to prevent overcrowding. As regards diphtheria we are glad to see that anti-diphtheritic serum is supplied free of cost to those who are unable to pay for it, and that in certain places arrangements have been made for the free bacteriological diagnosis of the disease. It is astonishing that in the country generally this latter provision is not general, as it is quite impossible to deal adequately with the prevalence of diphtheria unless suspicious sore-throats can be bacteriologically examined. With respect to enteric fever, the report before us draws attention to the fact that there is comparative excess of this disease in the three towns of Rochester, Chatham, and Gillingham, which towns are, as regards their boundaries, practically continuous and have together a population of about 130,000. Gillingham is sewered, while Chatham and Rochester dispose of their excrement in cesspits. Enteric fever is less prevalent in Gillingham than in Chatham or Rochester, but, curiously enough, the disease has increased in Gillingham since the introduction of sewerage. It seems possible that shellfish may be responsible for the excess of enteric fever in the three towns, but on this view there seems difficulty in explaining the excess of enteric fever in

Rochester and Chatham over that in Gillingham. Certain of the district medical officers of health draw attention to what they regard as the influence of flies in the spread of enteric fever, while others attribute prevalence of this disease to polluted soil. Dr. Howarth furnishes an interesting summary of the water-supplies of the county, which are obtained largely from the chalk and the green sand which are found so plentifully in this county. In some instances the borings exceed 1000 feet in depth, and in the matter of lateral adits the Ramsgate corporation has three and a half miles of these underground extensions. In a county such as Kent, where the water-bearing chalk formation is such a prominent geological feature, the subject of sewage disposal assumes special interest, and it will therefore be more satisfactory when a greater reduction has been made in the number of more or less pervious cesspits which still exist. Another of the characteristics of Kent as regards public health significance is that of hop and fruit picking, an industry which brings annually into certain districts a large influx of people who require to be looked after. The hop-pickers comprise the regular "hoppers" who reside in the vicinity of the hop fields, gypsies who live in tents and vans, and habitual vagrants. Accommodation has to be found for the foreign "hoppers" who are often accompanied by their children. In some of the hopping districts by-laws under Section 314 of the Public Health Act, 1875, have been adopted and these materially aid the work of supervision, but it appears that in the rural district of Faversham, where there were last year 8800 "foreigners," there are no such by-laws. Another nuisance which is especially liable to affect the people of Kent is that of the deposit of London manure and refuse, a fact of which travellers through this county soon become aware. In this connexion the question arises whether the metropolitan authorities who export their refuse ought not themselves to make arrangements to prevent nuisances to those districts in which such refuse is deposited.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7941 births and 4785 deaths were registered during the week ending Jan. 15th. The annual rate of mortality in these towns, which had been equal to 16·7 and 14·8 per 1000 in the two preceding weeks, rose again slightly to 14·9 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns did not exceed 14·4 per 1000, against 15·6, the mean rate in these 76 towns during the corresponding quarter of the four preceding years 1905–08. The mean annual death-rate in London last quarter was but 14·1 per 1000, and was 0·3 below the mean rate in the 76 towns. The lowest annual rates of mortality recorded in the 76 towns last week were 3·7 in Hornsey, 5·7 in Willesden, 7·4 in King's Norton, and 8·5 in Warrington; the rates in the other towns ranged upwards, however, to 21·6 in Swansea, 22·8 in Rotherham and in Oldham, and 26·1 in Ipswich. In London the recorded death-rate last week was equal to 14·6 per 1000. The 4785 deaths registered in the 76 towns last week showed an increase of 49 on the number in the previous week, and included 288 which were referred to the principal epidemic diseases, against 291 and 242 in the two preceding weeks; of these 288 deaths, 79 resulted from whooping-cough, 61 from measles, 60 from diphtheria, 46 from diarrhœa, 24 from scarlet fever, and 18 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·9 per 1000, against 0·9 and 0·8 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, East Ham, Blackburn, Tottenham, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·3 in Rhondda, 3·8 in Birkenhead, 3·9 in Burnley, and 4·1 in Ipswich. The fatal cases of whooping-cough, which had been 109 and 77 in the two preceding weeks, rose again to 79 last week, and caused annual death-rates equal to 1·1 in Swansea, 1·2 in Plymouth and in Aston Manor, and 1·4 in Ipswich. The 61 fatal cases of measles showed an increase of 25 upon the number in the previous week; the highest annual rates from this disease were 2·6 in Birkenhead, 2·7 in Ipswich, and 2·9 in Burnley. The 60 deaths referred to diphtheria exceeded those returned in the previous week by 16, and included 18 in London and its suburban districts, 3 in Devonport, 4 in Birmingham, 4 in Manchester and Salford, and 2 each in Hanley, King's Norton, Liverpool, Barrow-in-Furness, Halifax, Bradford, Hull, Middlesbrough, and Gateshead. The 24 fatal cases of scarlet fever showed a decline; and the 18 deaths referred to "fever" only exceeded by 2 the low number in the previous week, but included 2 each in Liverpool, Oldham, Leeds, and Portsmouth. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had declined in the 13 preceding weeks from 2819 to 2256, had further fallen to 2172 on Saturday last; 200 new cases of this disease were admitted to these hospitals last week, against 244 and 212 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 4 cases of small-pox on Saturday last. Of the 1367 deaths registered in London last week 285 were referred to pneumonia and other diseases of the respiratory system, against 360 and 338 in the two preceding weeks; these 285 deaths were no fewer than 140 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 40, or 0·8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 49 other smaller towns; the 40 uncertified causes of death in the 76 towns last week included 8 in Birmingham, 5 in Preston, 4 in Liverpool, 3 in Sheffield and in Sunderland, and 2 both in Gateshead and in South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 874 births and 604 deaths were registered during the week ending Jan. 15th. The annual rate of mortality in these towns, which had been equal to 18·9 and 20·4 per 1000 in the the two preceding weeks, declined to 16·7 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Scotch towns averaged 17·7 per 1000, and exceeded by 3·3 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 11·5 and 15·1 in Aberdeen and Paisley, to 23·0 in Dundee and 25·2 in Perth. The 604 deaths from all causes in the eight towns last week showed a decline of 136 from the high number in the previous week, and included 82 which were referred to the principal epidemic diseases, against 86 and 93 in the two preceding weeks. These 82 deaths were equal to an annual rate of 2·3 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. The 82 deaths from these epidemic diseases in the Scotch towns last week included 37 from measles, 15 from diarrhœa, 10 from scarlet fever, 9 from diphtheria, 7 from "fever," and 4 from whooping-cough, but not one from small-pox. The fatal cases of measles, which had been 63 and 55 in the two preceding weeks, further declined to 37 last week, but included 31 in Glasgow and 6 in Edinburgh. The 15 deaths attributed to diarrhœa were fewer by 4 than those returned in the previous week; 4 each were recorded in Glasgow, Edinburgh, and Dundee. Of the 10 fatal cases of scarlet fever, showing an increase upon recent weekly numbers, 6 occurred in Glasgow and 2 in Dundee. The 9 deaths referred to diphtheria, an increase of 4 on those in the previous week, included 3 in Glasgow and in Edinburgh, and 2 in Dundee. Of the 4 fatal cases of whooping-cough, 2 occurred in Glasgow. The 7 deaths referred to "fever" exceeded the numbers returned in recent weeks, and included 5 in Glasgow and 2 in Edinburgh; 4 were certified as enteric and 3 as cerebro-spinal meningitis. The deaths in the eight towns last week referred to diseases of the respiratory system, which had been 181 and 172 in the two preceding weeks, further declined to 132 last week, and were 19 below the number in the corresponding week of last year. The causes of 13, or 2·2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 595 births and 492 deaths were registered during the week ending Jan. 15th. The mean annual rate of mortality in these towns, which had been equal to 25·4 and 19·7 per 1000 in the two preceding weeks, rose again to 22·3 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 19·1 per 1000, whereas the mean rate during the same period did not exceed 14·4 in the 76 largest English towns and 17·7 in the eight principal Scotch towns. The annual death-rate during last week was equal to 21·1 in Dublin, 22·7 in Belfast, 23·3 in Cork, 22·8 in Londonderry, 30·1 in Limerick, and 28·4 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 19·8 per 1000. The 492 deaths from all causes in the 22 town districts during the week showed an increase of 57 upon the number returned in the previous week, and included 28 which were referred to the principal epidemic diseases, against 32 and 36 in the two preceding weeks; these 28 deaths were equal to an annual rate of 1·3 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·9 per 1000, but in the eight principal Scotch towns it was equal to 2·3. The 28 deaths from these diseases in the Irish towns last week included 22 from whooping-cough, 4 from diarrhœa, and 1 each from scarlet fever and enteric fever, but not one from small-pox, measles, or diphtheria. The 22 fatal cases of whooping-cough showed a further increase upon the numbers in recent weeks, and included 13 in Belfast, 5 in Dublin, and 2 in Waterford. The 4 deaths attributed to diarrhœa, against 7 in the previous week, were all returned in Dublin, as was the death referred to enteric fever. The fatal case of scarlet fever occurred in Cork. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 183 and 110 in the two preceding weeks, rose again last week to 138. The causes of 21, or 4·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., and in the eight principal Scotch towns it was equal to 2·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: A. H. Jeremy to the *Andromeda* and to the *Monmouth*, on recommissioning. Staff-Surgeon: C. H. J. Robinson to the *Andromeda*, for voyage home on *Monmouth's* paying off; and L. Lindop, to the *Algerine*, additional, and on recommissioning. Surgeons: A. C. Wilson to the *Andromeda* and to the *Monmouth*, on recommissioning; T. Creaser to the *Topaze*, additional, for the *Hecla;* and G. D. Walsh to the *Andromeda*, for voyage home on *Monmouth's* paying off; F. W. Quirk to the *Dwarf*, additional, and on recommissioning; L. C. E. Murphy to the *Commonwealth;* A. H. S. Richardson to R.M. Depôt, Deal, to join on completion of foreign service leave; and J. Bourdas to the *Excellent*.

ROYAL HOSPITAL, CHELSEA.

Lieutenant-Colonel Reginald J. C. Cottell, R.A.M.C., from Deputy Surgeon, to be Physician and Surgeon, vice Colonel C. Seymour, whose period of appointment has expired (dated Jan. 1st, 1910). Major Frederick Kiddle, R.A.M.C., to be Deputy Surgeon, vice Lieutenant-Colonel R. J. C. Cottell (dated Jan. 1st, 1910).

ARMY MEDICAL SERVICE.

Colonel George T. Goggin is placed on retired pay (dated Jan. 14th, 1910).

Lieutenant-Colonel Robert Porter, from the Royal Army Medical Corps, to be Colonel, vice G. T. Goggin (dated Jan. 14th, 1910).

ROYAL ARMY MEDICAL CORPS.

Major Frederick Kiddle is seconded whilst holding the appointment of Deputy Surgeon at the Royal Hospital, Chelsea (dated Jan. 1st, 1910).

Colonel T. P. Woodhouse has been appointed Principal Medical Officer to the Scottish Command. Colonel T. J. R. Lucas, C.B., on promotion, has been appointed an Administrative Medical Officer in India. Lieutenant-Colonel R. Porter is appointed Principal Medical Officer, Western Command, England, on promotion. Captain J. F. Martin has been transferred from the Eastern Command, England, to the Royal Military College, Sandhurst, as Assistant Surgeon. Captain C. H. Carr has been appointed specialist in dental surgery, Salisbury Plain District. Lieutenant-Colonels J. M. Reid and T. B. Winter have been selected for increased pay under the provisions of the Royal Warrant.

The following distribution of selected Lieutenant-Colonels, Royal Army Medical Corps, has been issued by the Director-General, Army Medical Service:—

Aldershot Command (4): Cambridge Hospital, Connaught Hospital, Royal Army Medical Corps Depôt, and School of Instruction, Bordon.

Eastern Command (5): Royal Herbert Hospital, Woolwich; Military Hospitals at Chatham, Colchester, Dover, and Shorncliffe.

London District (2): Senior medical officer recruiting, Queen Alexandra's Military Hospital, Millbank.

Northern Command (1): Military Hospital, York.

Southern Command (4): Military Hospitals at Cosham, Devonport, Netley, and Tidworth.

Western Command (1): Military Hospital, Chester.

Scottish Command (1): Military Hospital, Edinburgh.

Irish Command (4): Royal Infirmary, Dublin; Military Hospitals at Cork and the Curragh; administrative medical officer, Belfast District.

Colonies (8): Gibraltar, Malta, Egypt, Mauritius, Singapore, North China, one each, and South Africa, two.

India and miscellaneous (21).

INDIAN MEDICAL SERVICE.

Captain J. C. H. Leicester, civil surgeon, Simla East, has been appointed to the medical charge of the Army Headquarters Staff and establishments remaining at Simla during the winter months. Captain C. H. Cross has been granted a year's leave from India. The services of Captain J. L. Lunham have been placed at the disposal of the Government of India for temporary civil employment. The services of Captain S. T. Crump are temporarily lent to Burma. Captain Lloyd is appointed professor of biology, Medical College, Calcutta. Captain Watson is placed on plague duty in Burma.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Highland Field Ambulance: Major Ashley W. Mackintosh resigns his commission (dated Dec. 8th, 1909).

2nd Wessex Field Ambulance: David Macnair to be Lieutenant (dated Dec. 3rd, 1909).

Attached to Units other than Medical Units.—Captain and Honorary Surgeon-Major Charles S. de Segundo to be Major (dated July 2nd, 1909). Lieutenant Frederick Philip to be Captain (dated Dec. 2nd, 1909).

THE IMPERIAL ORDER OF THE OSMANIEH.

The King has given to Captain Francis John Brakenridge, R.A.M.C., licence and authority to accept and wear the decoration of the Imperial Ottoman Order of the Osmanieh, Fourth Class, which has been conferred upon him by His Highness the Khedive of Egypt in recognition of valuable services rendered by him.

THE KAISAR-I-HIND MEDAL.

Lieutenant-Colonel J. C. S. Vaughan, I.M.S., Superintendent Campbell Medical School and Civil Hospital, Calcutta, has been awarded the Kaisar-i-Hind Medal, First Class, for public service in India.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce the early issue of "The Practice of Surgery," by Mr. W. G. Spencer, surgeon to the Westminster Hospital, and Mr. G. E. Gask, assistant surgeon to St. Bartholomew's Hospital; and of "Diseases of Children," by Dr. J. F. Goodhart and Dr. G. F. Still. A new edition of "Galabin's Midwifery," under the editorship of the author and Dr. G. F. Blacker, obstetric physician to University College Hospital, is also in preparation.

Correspondence.

"Audi alteram partem."

"A VICTIM TO SCIENCE": X RAY MARTYR.

To the Editor of THE LANCET.

SIR,—The whole medical profession will, without doubt, greatly appreciate the exceedingly kindly action of Sir William Treloar in bringing to public notice the lamentable condition of Mr. Cox, one of the most truly pathetic cases of scientific martyrdom the world has ever known, and will, I am sure, show considerable practical sympathy with this suffering "victim to science" by a hearty and generous response to Sir William Treloar's appeal.

Early in December last it was my painful experience to visit Mr. Cox, three weeks after his right arm had been amputated, and a more pitiable case I have never witnessed in any human being during my 32 years' professional career.

Sir William Treloar in his letter of Jan. 11th to the *Daily Telegraph* truly describes the excruciating agony Mr. Cox has endured for the past six years, which must have been borne with a fortitude beyond conception, and the many very serious and soul-wearing operations he has been compelled to undergo even to maintain the life that must be almost bereft of human consolation, but words cannot depict the awful condition of the man who has sacrificed his living and shortened and distorted his life for the benefit not only of his country but of the whole human race. His suffering, his martyrdom to the sacred cause of science means the alleviation of pain and sickness in the future of countless thousands of suffering and tortured human beings throughout the world.

This "Victim to Science" has indeed made the English nation his debtor by the extreme efforts he put forth during the dark period of the South African War, as mentioned in Sir William Treloar's communication to the *Daily Telegraph* in the following words: "Working day and night testing the appliances to ensure the utmost value of the X ray apparatus for the use of the English surgeons at the front in the South African War."

To Mr. Cox is also largely due the important invention he worked out with Mr. Hall-Edwards by means of which not only is the position of a bullet located but also its depth, so that a surgeon can now remove an obstacle with a minimum amount of suffering to the patient. Mr. Hall-Edwards, Mr. Cox's co-worker, who lost both his hands, and who, I am pleased to say, has recovered in health and, I understand, is pursuing his profession, was rightly shown his country's gratitude by being granted a pension from the Civil List, but poor Cox, whose shattered health is beyond all doubt irrecoverable, has not only lost his right arm and the middle finger of his left hand, which left hand is withered, but he is totally incapacitated and precluded from earning his living in consequence of his devotion to duty which culminated in contracting the terrible and painful malady of rodent ulcer and a most serious cancerous condition attacking his face, chin, and jaw.

Mr. Donnithorne, in his letter to the *Daily Telegraph* of Jan. 12th, undoubtedly strengthens Sir William Treloar's appeal by the statement that, "Thanks largely to the improvements originated by Mr. Cox cases of martyrdom such as his will be unheard of among future X-ray workers."

Mr. Cox was always ready to give the treatment freely to poor people who could not afford to pay. On the occasion of my visit Mrs. Cox had been occupied for two hours dressing her husband's terribly affected face, and I agree with the Reverend T. Rippon's statement in his letter to the *Daily Telegraph* of Jan. 13th: "I know not who to admire more, the patient sufferer in his agony or the brave wife who nurses him."—I am, Sir, yours faithfully,

FREDK. WM. ALEXANDER, M.R.C.S. Eng., &c.

Hardy-road, Blackheath, S.E., Jan. 18th, 1910.

PS.—Any subscriptions with a view to alleviating his most piteous sufferings will be gladly received and gratefully acknowledged by Sir William Treloar, if sent to the "Cox Fund," 69, Ludgate-hill, London, E.C. Cheques to be crossed London, City, and Midland Bank, Ludgate-hill.

ASEPSIS AND ANTISEPSIS.

To the Editor of THE LANCET.

SIR,—Sir Watson Cheyne contends that there are only three answers to the facts which he has brought forward. The second answer is to show that results as good, if not better, can be obtained by methods other than the antiseptic method. In our paper of November last we attempted to show that at the same hospital, with the same surgeons, seven in number, working during 1906 under "antiseptic," and during 1908 under "aseptic" conditions, and with their results tabulated by the same individuals making the same inclusions and exclusions of cases, the figures, so far as they went, seemed to point in favour of the "aseptic" method. Our figures may not be good, but it is possible that they do include individual results which are as good as those of Sir Watson Cheyne. But this personal equation, which, to our regret, Sir Watson Cheyne introduced into his remarks on our paper, was the very thing we wished to avoid, and it does not come within our province to extract these personal statistics out of our figures. The only really fair method of comparison would be for an independent surgeon to collect from all the London hospitals the results (1) of those surgeons using the "antiseptic" method; (2) of those surgeons using the "aseptic" method, and to exhibit them side by side. We are, Sir, yours faithfully,

HERBERT S. PENDLEBURY.
IVOR BACK.

Brook-street, Grosvenor-square, W., Jan. 17th, 1910.

To the Editor of THE LANCET.

SIR,—Sir Watson Cheyne says "there are only three answers to the facts which I brought forward in my paper of Jan. 1st: (1) to admit their importance, and look into the methods by which they were obtained; (2) to show that results as good, if not better, can be obtained by other methods; and (3) to throw doubt on the accuracy of the observations and the judicial care which had been exercised in classifying them."

To deal with the third and least important point first. I am sorry that Sir Watson Cheyne should have thought that I intended to throw doubt upon the accuracy of his observations. In assuming this to be my attitude he has missed the point of my remarks, which was to ascertain whether his criterion of wound infection was the same as my own. Since that criterion is the same—namely, the clinical observation of even the slightest trace of pus visible to the naked eye—I am satisfied that the comparison of the sets of figures given below is a fair one.

The first point can be as readily dealt with. It was, of course, the recognition of the importance of Sir Watson Cheyne's statements which led me to look into the methods by which they were obtained. Those methods include not only the details of his technique but also the criteria upon which the results were judged.

Having obtained answers to both these points from his letter and from the Bradshaw lecture to which he referred me, I am now in a position to gratify his desire to be answered according to the conditions of his second postulate. I think that the comparison which I am able to make is a fairer one than that which Sir Watson Cheyne took in his somewhat exultant paper on the subject of the St. George's statistics. As I pointed out in my previous letter, it was unfair to compare the figures of an individual surgeon with the collected statistics of a number of different operators. Moreover, as I read it, Mr. Pendlebury and Mr. Back were not putting forward their figures as the best possible results of the aseptic system, but in order to show the superiority of that system in the hands of the same operators.

I am well aware of the fallacies which attend the drawing of general conclusions from small numbers of cases. In this connexion the thousand odd cases tabulated by Sir Watson Cheyne was a small number, and those of my own of which I have accurate records—namely, of the two years during which I was resident assistant surgeon at St. Thomas's Hospital, and of the years 1908 and 1909—are still smaller. I have, however, been able to balance this drawback by tabulating the results of the last seven years of the late Mr. Clutton's personal cases at St. Thomas's. I do this because the details of my own methods are founded upon, and identical with, those of Mr. Clutton, and because, having had the privilege of learning from him and knowing his views on this subject, I am confident that he would have been only too pleased to allow me to use his figures to demonstrate, as they do, the excellence of his technique.

—	Mr. Clutton's series.			Mr. Sargent's series.			Percentage of infection in Sir Watson Cheyne's series.
	Cases.	Infected.	Percentage of infection.	Cases.	Infected.	Percentage of infection.	
1. Radical cure of hernia ...	169	2	1·18	202	4	1·98	1·7
2. Excision of the breast ...	53	1	1·88	33	0	0	1·8
3. Operations on the thyroid gland	10	0	0	6	0	0	
4. Operations for "quiescent" appendicitis ...	136	2	1·47	53	1	1·88	1·1
5. Miscellaneous	484	7	1·44	229	2	0·87	1·9
6. Operations on the male genital organs	Included either in 1 or 5.						4
Total	852	12	1·4	523	7	1·34	1·8

Note.—The infected cases under the heading "Miscellaneous" were:—Abdominal exploration (2), torticollis (1), varicocele (1), tuberculous knee (1), orchidectomy (1), bone-grafting (1), tuberculous abscess (1), and hysterectomy (1).

The difference between Sir Watson Cheyne's practice and that of the other school really resolves itself into one of preparation for operation and not of wound treatment. In our opinion he does not employ the best means of sterilising his apparatus, trusting to chemical reagents instead of boiling; and he neglects one or two additional safeguards against infection which are so easily adopted by the use of the cap and veil. It is to this difference of technique that I attribute the difference in results, small as it is.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 16th, 1910. PERCY SARGENT.

"ANÆSTHETICS" IN THE "ANNUS MEDICUS."

To the Editor of THE LANCET.

SIR,—I have only just read, in your issue of Dec. 25th last, the section of your "Annus Medicus" devoted to the subject of anæsthetics, or I should have written to you before this to draw attention to the fact that the writer of that section has completely failed to present to your readers a faithful picture of the present position of the question of legislation in regard to the administration of anæsthetics. The important step recently taken by the General Medical Council in pronouncing in favonr of such legislation is so inadequately and ambiguously referred to that I doubt whether any of your readers who are unaware of this step having been taken would obtain this information from the article to which I refer. As one of the several instances of ambiguity I need only refer to the citation of three conclusions presumably arrived at by the Anæsthetics Committee of the General Medical Council. As they stand they might readily be taken to be the verbatim conclusions of that committee. They are, however, conclusions formed by the writer of the article, and instead of embodying the two most important points in the report of the committee—namely (1) the pronouncement in favour of legislation, and (2) the pronouncement in favour of two qualified persons being present at operations under general anæsthetics—they leave the reader in doubt on the first of these points and completely ignore the second. Although ambiguity may have its attractions on political platforms, it is inconvenient, if not intolerable, in medical literature. I must ask you to forgive me for speaking thus strongly, as this is the second time since the publication of the important report of the Anæsthetics Committee of the General Medical Council that I have had to draw attention to errors and ambiguities in unsigned articles in the medical press purporting to put the profession in possession of the latest phase of the anæsthetics question. The plain unvarnished fact is that the General Medical Council, having adopted *in toto* the report of a special and highly representative committee appointed to consider the desirability of legislation in regard to anæsthetics, has expressed itself in a series of 12 (not three) conclusions as favourable to such legislation, and has forwarded these conclusions to the Privy Council and to the Home Office Departmental Committee respectively. Surely this important event deserves to be chronicled in simple and intelligible language? Surely it is a highly promising and noteworthy incident, not only from the point of view of the public, but from that of the medical profession?

As one of those who took part in the movement initiated some three years ago with the object of improving the conditions under which anæsthetics are administered and of reducing the number of accidents from these agents, I am always coming across evidences such as that under consideration, of the existence of a kind of counter-movement which has all along dogged the steps of those who inaugurated the original scheme of reform. The worst features of this counter-movement are that it is insidious, indefinite, and destructive. Amongst its little band of apostles there are one or two who lose no opportunity of condemning in deprecatory or even ambiguous language all attempts to remedy conditions which they themselves know full well require reform. One would not object to the existence of this counter-movement had it as its object the furtherance of any public or professional interest. But it seems to have no object other than that of destroying the constructive policy of those who have been doing, and are still doing, their best to place general anæsthesia upon an assured basis. Fortunately the days of this counter-movement are numbered, for, thanks to the action of the General Medical Council, we are now within measurable distance of securing those urgently needed reforms which both the public and the profession desire to see established. Should the recommendations of the General Medical Council be adopted in their entirety and form the basis of an Act of Parliament the more potent anæsthetics would henceforth be administered only by registered medical practitioners, and certain less potent anæsthetics (to be scheduled as in the Poisons Act) only by registered medical or by registered dental practitioners, whilst it would be illegal, save in cases of emergency, for the person administering the anæsthetic for the purpose of inducing unconsciousness during any medical, surgical, or dental operation or procedure to be the same person who performs the said operation or procedure. The great advantages that would accrue to the public from such legislation are sufficiently obvious, whilst the blow that would be struck at quackery, and particularly at dental quackery, would be such as to encourage other departments of practice to institute similar attempts towards securing the prohibition of unqualified practice in those departments.

I am, Sir, yours faithfully,

London, Jan. 17th, 1910. FREDERIC HEWITT.

GASTRO-JEJUNOSTOMY FOLLOWED BY FATAL HÆMORRHAGE: A WARNING AS TO THE DANGER OF USING CLAMPS.

To the Editor of THE LANCET.

SIR,—As a matter of duty I send for publication the following brief notes of a case in which fatal hæmorrhage occurred after gastro-jejunostomy. I do this more readily because I am fully satisfied that the employment of clamps, which occasioned the fatality, is, in the majority of cases, wholly unnecessary.

A man, aged 26 years, suffering from chronic duodenal ulcer, was admitted into the Sheffield Royal Infirmary on April 1st, 1909. On the following day posterior gastro-jejunostomy was performed, the usual clamps for the stomach and jejunum being employed. The operation presented no special difficulty, and for some hours afterwards the patient appeared to be progressing favourably. He then became faint and vomited some dark blood. This was followed by improvement in his general condition, but during the succeeding night he suddenly collapsed and died. At the necropsy the stomach was found to be full of blood which had come from a vein in its mucous membrane.

The occurrence of so distressing a tragedy naturally caused one to investigate critically why it should have happened and how it might be avoided in the future. My recollection of the operation was that it had been performed with every care, and although the case was my first fatal one from this cause in a series of several hundred gastro-jejunostomies it was painfully evident that, with the same technique, the accident might repeat itself.

Although employed primarily to prevent the escape of the contents of the stomach and intestine clamps act also as tourniquets to the blood-vessels and are not loosed until the inner row of sutures has been inserted and tied, after which it is no longer possible to inspect the interior of the stomach. Should this row of sutures fail to secure all the bleeding points in the mucous membranes unlimited hæmorrhage into the stomach or jejunum may take place without the operator being aware of it. The circumstances are similar to what would obtain after amputation of a limb if the wound were closed before relaxing the tourniquet. Indeed, the parallel hardly does justice to the point, for whereas apposition of the flaps in an amputation would tend to restrain bleeding from unsecured vessels no such salutary check exists in the case of a hollow organ, such as the stomach.

Obviously, then, we have here a danger inseparable from the use of clamps as ordinarily employed, and the question at once arises—Are they really necessary? If the patient has been properly prepared for operation the answer is in the negative. Proper preparation includes a preliminary fast of at least 18 hours' duration and in some cases a thorough lavage of the stomach. After this period of fasting the stomach and upper intestine will be free from food, and the small amount of fluid present will usually be devoid of dangerous micro-organisms. Moreover, by packing gauze around the site of the anastomosis any fluid that may escape on opening the digestive canal is at once taken up. During the last eight months I have performed 27 gastro-jejunostomies for non-malignant conditions without the aid of clamps. The result in every case has been quite satisfactory, and, apart altogether from the question of avoiding concealed hæmorrhage, I think the operation is more easily performed without them. By employing two artery forceps which engage the musculo-peritoneal coats of the posterior wall of the stomach at either end of the line of anastomosis efficient traction is secured and the stomach wall kept taut. When laid flat on the gauze the forceps are less in the way than a clamp would be. The jejunal loop is emptied by "milking" it, and its base is then surrounded by a fold of gauze. If this be properly done the loop will be found quite empty except for a few gas bubbles. An alternative plan is to occlude the segment of jejunum by placing a clip on either end. I employed this plan in a few of my earlier cases, but abandoned it at the suggestion of my friend Rutherford Morison. All bleeding points in the mucous membranes are secured by fine catgut ligatures previous to placing the inner row of sutures. In cases of malignant disease of the pylorus I still use the stomach clamp in performing gastro-jejunostomy, because a malignant ulcer of the stomach is almost necessarily the seat of septic organisms.

I am, Sir, yours faithfully,

SINCLAIR WHITE, M.Ch. R.U.I., F.R.C.S. Eng.,
Senior Honorary Surgeon, Sheffield Royal Infirmary,
Lecturer on Surgery, Sheffield University.

Jan. 5th, 1910.

THE PANCREATIC REACTION IN THE DIAGNOSIS OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—At the recent discussion upon duodenal ulcer at the Royal Society of Medicine none of the speakers alluded to the diagnostic value of the pancreatic reaction in the urine. When present, I think that it points to some definite lesion in the duodenum and would thus tend to exclude purely functional hyperchlorhydria. The pancreatic C reaction has been found in all my cases of duodenal ulcer demonstrated at the operation in which it has been looked for, and in the majority of those in which a duodenal ulcer was inferred from the symptoms.—I am, Sir, yours faithfully,

Harley-street, Jan. 17th, 1910. GEORGE HERSCHELL.

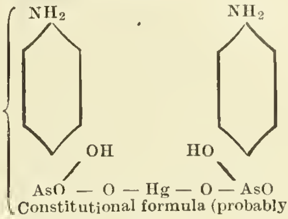
THE COMBINED MERCURIAL AND ARYLARSONATE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—Referring to the article contributed to your issue of Jan. 1st (pp. 23–25) by Colonel Lambkin on the Combined Mercurial and Arylarsonate Treatment of Syphilis, we are informed by the manufacturers—Vereinigte Chemische Werke A.G., Charlottenburg—that the formula for the atoxylate of mercury should be as follows:—

1. $C_{12}H_{14}O_6N_2As_2Hg$
Empirical formula from analysis.

2.



Constitutional formula (probably).

Will you very kindly insert this correction, and oblige.

I am, Sir, yours faithfully,
(*per pro* R. W. Greeff and Co.)

Eastcheap, E.C., Jan. 13th, 1910. ROBERT GREEFF.

THE PARLIAMENTARY REPRESENTATION OF THE EDINBURGH AND ST. ANDREWS UNIVERSITIES.

To the Editor of THE LANCET.

SIR,—With regard to the paragraph in THE LANCET of Jan. 8th referring to Sir A. R. Simpson having agreed to contest this seat in the Liberal interest, it may be mentioned that the paragraph as sent by the writer contained a balancing clause to the clause objected to by Dr. Norman Walker in his letter in THE LANCET of last week. The clause referred to was deleted by the editorial department, no doubt for good reasons. The writer may, however, point out that Dr. Norman Walker states first that the "Scottish correspondent's information is misleading," and then proceeds to confirm it by saying that "it is perfectly true that some of Sir Alexander Simpson's personal friends very much regret that he has come forward," but he is pleased to put his own interpretation upon this expression of regret. Dr. Norman Walker as an ardent politician can only see in their regret a political motive—namely, that they regard Sir Alexander Simpson "about the strongest candidate the other side could put forward." It would seem that Dr. Walker fails to understand that the personal attachment of many of Sir Alexander Simpson's old friends should make them deeply regret having to oppose him at this time and to vote against him because he has become the public exponent and representative of political views which they do not support. It is interesting to have the suggestion that the Liberal Party is supporting Sir Alexander Simpson as a social reformer, not as a politician. Would they have equally supported him had he indicated that he would vote with the Unionists if returned?

I am, Sir, yours faithfully,
ONE OF YOUR SCOTTISH CORRESPONDENTS.

Jan. 17th, 1910.

IN THE MATTER OF "MEDICAL RESEARCH."

To the Editor of THE LANCET.

SIR,—The recent gift by Mr. Beit of two hundred odd thousand pounds for medical research was an excellent thing. It serves, however, as a strong reminder of the persistent futility of the methods adopted by the medical profession in the disposal of research funds. To institute, support, and encourage useful research work (which increases the powers of all practitioners) is an important duty and privilege of the profession. The profession's attitude, however, is an extraordinary one. It looks with an all too casual eye to the general public for the funds and means for this very thing.

What, for example, should we think of the representatives of any other industry whose attitude towards their own expansion was: "If you (the public) like to build new departments and fit them up for us, we will carry on the new work"?

I maintain that it is the duty and privilege of the entire profession to initiate and pay for organised medical research work in all its departments, and to see that it is done. It is for them to open up new avenues of advance and discovery, and to stimulate and reward those who shall produce valuable work. Apart from the schools of physiology, which are in the main actively researching, the presumed centres of research at present are the pathological departments of the hospitals. The facts are, however, that they are not instituted by funds obtained from the profession for research, and further, that with an occasional exception they produce a trifling amount of new important work. These pathological departments are engaged in teaching students, and otherwise, not unnaturally, in developing the practical, i.e., financial, aspects of pathology. How much organised and serious research on any scale, then, is initiated and supported by the profession? What, for instance, has surgery done for bacteriology? How many scholarships, research livings, or the equivalent has that branch of our profession given to the cause of advance, that branch which owes its salvation to the utilisation of the bacteriological triumphs of Lister and Pasteur? In short, what is this vast assembly of all the qualified doing for research? The answer is—practically nothing.

The total amount of research undertaken at present is comparatively a mere trifle viewed either from the standpoint of desirability or of opportunity. There are a few funds and endowments available, and the number is fortunately increasing, but what do we find by a scrutiny of their administration? Briefly and almost invariably, whatever amount is available the first step is to divide it into numerous small sums (Beit grants possibly excepted) of £100 to £150 per annum, though often less, and thus to fritter away an appreciable sum in these small grants to the juniors of the profession. These latter are usually just qualified and excellent young fellows, and the conditions of a grant are somewhat as follows: (*a*) You can only research for one year (or two years, perhaps, owing to special circumstances); (*b*) you must research in a special building (often an insuperable obstacle); and (*c*) you shall do only the research arranged for you by the director (second-hand investigations of the director), &c.

In this manner nearly all our very precious research funds are dissipated by administration which declines to pay a skilled researcher to do research work, and prefers to start off numerous novices with seldom a living, only to cry "cease" after a paltry year or two. Our colleagues, the pure scientists, who have been actively researching for a century, assure us that research work worth the name requires at least two important factors besides money; they are: a special intellectual capacity and also physical fitness of a high standard and enduring type. Moreover, results of value and importance are not likely to be obtained in one year and often not in two years, and seldom at all, indeed, by the experimenting novice, excellent and clever fellow though he be.

Valuable research work is normally obtained by the professional researcher, by the experimenter of experience and by the scientific, though practical, enthusiast working away year after year. Such is the type of man, ignored by our present administrators, who should be given a place for research and a living enabling him to do such work. This investigator's services and results are vastly more valuable than those of numerous juniors appointed to have a mere year at research. Such men appointed and maintained in adequately paid positions out of the funds that are, and are going to be, available would convince the profession and public that the money was being well spent and that such research "pays." Let these men be paid livings, rising from £500 a year to £1000 a year, for experienced and valued workers. They will do no other than research work (and won't wish to) and will bring forth their harvests, and when they fail with advancing years others must step in to maintain the struggle. As to the juniors, let them be encouraged to work on and to really grow into similar workers, and also receive a living adjusted to the requirements of maturity. In this way something would be done to put research on a serious basis and to end the present trifling with the existing funds.

It is, of course, too soon to expect the Universities to wake up and grant no one an "M.D." for less than a first-class piece of research work, whether original or inspired. In any case it is the work we want, new research work of practical use to the profession, and, moreover, many times the present yield for our own and the world's use and benefit. I am, Sir, yours faithfully,

Jan. 10th, 1910. "PHAGOCYTE."

CHILDREN'S COURTS.

To the Editor of THE LANCET.

SIR,—Mr. Plowden recently remarked at Marylebone police court, that delinquents under the age of 16 could not breathe the same air—he meant, of course, police-court air—as prisoners above that age without risk of "contamination." What that contamination was, he remarked, he had not the slightest idea. But the meaning is, that children's courts are now to be held, and those under the age of 16 must be tried in them. Unfortunately, but five have been opened, and it seems, as a consequence, that children will have to travel considerable distances to be tried as the law now directs. That they may undergo more possible contamination in the transit, is possible. It also means considerable extra waste of time for all concerned, including, of course, members of the medical profession. Those who have been in the habit of examining children for industrial schools, say at Woolwich, must now either give up that branch of their work, or travel three miles to Greenwich; in other parts of the metropolis the distances to a children's court are even greater. The point seems that this surrender, to what is probably mere sentiment, will be expensive, and may not, after all, attain the end desired.

I am, Sir, yours faithfully,

Jan. 15th, 1910. PUZZLED.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Middlemore Lecture.

THE annual Middlemore lecture was delivered at the Eye Hospital by Mr. H. Eales, who chose the subject of "Myopia." The lecture was endowed with the object of interesting general practitioners in diseases of the eye, but while 600 invitations were sent out only 12 members of the profession attended, of whom four were general practitioners. The suggestion has been made that the terms of the trust should be altered in order to fulfil the testator's wishes more fully.

Smoking Concert.

At the annual smoking concert of the General Practitioners' Union the good feeling existing in the profession was well shown by the 120 members and guests present. The event is always looked forward to as providing a most enjoyable evening's entertainment. On Jan. 5th the annual dance of the union took place and similarly provided much enjoyment and opportunity to renew friendships.

Midland Home for Incurables.

The annual meeting of the supporters of this home was held at Leamington on Jan. 15th and was presided over by Lord Leigh. The cost per patient had been brought down as low as £57, notwithstanding an ample and good dietary. The ordinary revenue amounted to £7669 6*s.* 11*d.*, as compared with £7279 14*s.* 1*d.* for 1908. There were 108 patients at the end of the year, and of these 30 were absolutely confined to bed. There were 38 pensioners and 30 free beds in the home, an addition in each case of 3 on the year. During the year 22 patients died, a rather larger mortality than usual.

Post-Graduate Lectures.

The post-graduate lectures at the hospitals have now concluded. They have been much appreciated and the attendance on a few occasions has reached 50.

Jan. 18th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Election.

THE whole city has been mentally and physically occupied with the great business of electioneering. How far the exertions of those actively engaged, the exposure of thousands to the vicissitudes of January weather, the overwrought feelings, the hopes and fears, the tense excitement of thousands more will affect the bills of mortality it would be hard to say, but no doubt toll will be taken.

Alcohol and the Baby.

A case is reported from Oldham which is described as "amazing." Whether it indicates amazing vice or amazing ignorance may be considered doubtful, the probability being that vice and ignorance had equal shares in the proceeding. A woman going to the market left her two children in the care of her mother. On her return she saw one of them, 22 months old, on her mother's knee looking "strange." A man in the room said, "It's drunk, it's been having something to 'sup.'" Then the grandmother stated that the man had given it "some rum and whisky." The mother took the child to a doctor and later to the infirmary, where the house surgeon said the child had been poisoned by alcohol. The grandmother was fined 10*s.* and costs, and, curiously enough, the man who had given the "sup" was let off. It is not to be supposed that this is a common occurrence in Oldham among those in the social position of these people, but it shows how dangerous is the vice of intemperance among adults, even to helpless infancy, for, on the other hand, it cannot be supposed that such cases are very rare, as the ignorance of the poor on the subject of alcohol and its being a suitable thing to give to infants is incredible and ought to be impossible.

A Lady's Medical Appointment.

The board of management of the St. Mary's and the Southern Hospitals has appointed Dr. E. Maude Marsden as house surgeon for a period of six months. The controversy on the refusal of the Royal Infirmary board to appoint ladies to resident medical positions still continues, and some consider that a statement in the Medical School Handbook issued a few years ago, and repeated in the University Calendar, that "the practice of the Infirmary is open to women on the same terms as men," and later that "the following posts are open to those who have completed their hospital practice," involve a breach of faith towards the medical women, as they consider they have been misled as to the opportunities afforded them.

Phthisis at Withington Workhouse.

The phthisis wards at the Withington workhouse hospital are said to be so overcrowded as to be a great anxiety both to the guardians and to the medical staff. It is to be hoped that a scheme at present talked of for a sanatorium, either for the Chorlton union alone, or in association with the Manchester board, will soon become an accomplished fact, for the state of things as described calls for urgent relief.

Royal Albert Asylum.

It is becoming increasingly evident to those who think much as to the condition of the feeble-minded that detention in a home for a few years of childhood only cannot lead to much permanent good. This was felt years ago by the late Sir Samuel Storey, when he provided the branch home, in connexion with the Royal Albert Asylum at Lancaster, for the prolonged or permanent care of the older girls. Even after the care and training of years the feeble-minded are not fitted to protect themselves, but have to fight the battle of life on unfair and disadvantageous conditions. It is therefore good news that the committee of the asylum has under consideration the desirability of extending the system of permanent care, and a subcommittee has been formed to consider the matter and to report to the central committee as to the best way of providing a limited scheme of permanent care. If such a scheme is developed it is to be hoped that the public will give help generously, as they have certainly done in the past.

Jan. 18th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

Proposed Incorporation of the Rhondda Valleys.

THE success which has attended the incorporation of Merthyr Tydvil, which has a population of 80,000 persons, has revived in the Rhondda valleys the movement for the incorporation of that urban district, where the present population is estimated at 133,000. Until the year 1863 the Rhondda district was included in the area of administration of the Merthyr rural sanitary authority, and in that year it became a portion of the newly-formed Pontypridd rural sanitary authority. The population of the two valleys was then about 4000. When they were formed into an urban district in 1877 the population was approaching 50,000. The area of the district is 23,000 acres and it has at the present time a rateable value of nearly £600,000. In view of these facts there would appear to be no substantial reason why a charter should not be given to the district if it is desired by the inhabitants. Incorporation not only adds to the dignity of a district but it has usually been found to increase the interest that is taken in municipal affairs.

Cardiff Infirmary.

There is now required for the support of the Cardiff Infirmary an annual income of £16,500, but as there has been for a succession of years an expenditure which has not been met by a sufficient income there has accumulated a sum of over £21,000 due to the treasurer of the institution. There are few places in which such a position would not be viewed with feelings of considerable alarm, and in Cardiff, where during the past four years some £80,000 have been subscribed towards the erection of a new out-patient department and a new wing for the infirmary, there is some little uneasiness at the large sum which is still required to place the institution upon a satisfactory financial basis. Among the proposals which have been made to secure a substantial reduction of the amount named there is one which should receive very critical investigation before it is adopted. The suggestion is that out-patients should pay 2*d.* a week for "registration" and that in-patients should pay 3*s.* a week towards the cost of food. It is estimated that the income derived from these charges would amount to about £800 per annum. The disadvantages associated with such a proposal, made as it is in connexion with an institution which is served by an honorary medical staff, are so great, so altogether out of comparison with the relatively small sum of money to be gained, that it could hardly meet with the approval of the medical profession in Cardiff.

Jan. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation of Portraits to Dr. T. S. Clouston, Edinburgh.

ON Monday, Jan. 10th, a company of ladies and gentlemen met in the hall of the Royal College of Physicians, Edinburgh, on the occasion of a presentation being made to Dr. Clouston. Professor Rankine presided, and said that he occupied that position as he had been a manager of the Royal Edinburgh Asylum for over 20 years. During those years his feeling had been one of ever-growing admiration for Dr. Clouston as a physician, as a man of business affairs, and as a friend. He alluded to the great works which had been carried out during the time of Dr. Clouston's superintendentship. Sir William Turner then addressed those present, and spoke of the early interest Dr. Clouston had taken in the nervous system, and how that interest had continued and matured through life. He referred also to his connexion with the University as lecturer on his own special department of medicine and to his success as a teacher. Sir William Turner then unveiled the portraits: one a full-length portrait in academic costume, which is to be hung in the hall of the asylum; the other a three-quarter portrait as a personal gift to Dr. Clouston. Both portraits are by Mr. Fiddes Watt. Dr. Clouston, in returning thanks for the portraits, spoke of his early connexion with asylum practice and of the ideals he had had in his work.

Lady Residents for a Dundee Hospital.

At a meeting of the Dundee parish council held on Jan. 10th Dr. Janet T. Miller and Dr. Jessie C. Russell were appointed senior and junior resident medical officers respectively for the East Poorhouse Hospital.

Sidlaw Sanatorium.

A conference was held on Jan. 11th between the subcommittee of the directors of the Sidlaw Sanatorium and the infirmary directors. The two points regarding which there was discussion were the duration of occupancy and the right to charge for consumptive patients. The sanatorium directors were prepared to apply for powers to hand over the buildings permanently, but the infirmary directors could not entertain the proposal. It was finally arranged that the sanatorium should be transferred to the infirmary directors for a period of ten years, and that thereafter the tenancy should be subject to a year's notice on either side. The sanatorium directors subsequently decided to withdraw from their position with regard to their power to charge patients in exceptional conditions. There is thus a complete arrangement now arrived at, and all that remains before it becomes operative is to get the approval of Mr. Caird, who gave the £10,000, and a decision from the town council to make an annual payment. There are at present only six patients in the institution. They will leave it this week and the buildings will a few days later be closed.

Jan. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dublin School of Surgery and the Peril of the Royal Colleges.

ON Jan. 15th, in the Royal College of Surgeons, a conference took place between representatives of the boards of the Royal College of Surgeons and the Royal College of Physicians, Sir E. Carson, K.C., the Right Hon. J. H. Campbell, K.C., Mr. H. Conner, K.C., and Major O'Connor, on the subject of securing a grant from Government for the school of the Royal College of Surgeons with the object of placing it upon a condition of equality with the medical schools in the new universities. The President of the Royal College of Surgeons occupied the chair, and there were also present the President of the Royal College of Physicians, the Vice-President, the Registrar, and Sir John Moore. The chairman spoke strongly of the injustice which had come to his College in the subsidy of other schools to its complete exclusion, using such arguments as those with which you have familiarised your readers when the same cause was pleaded on an earlier occasion, and both Sir Edward Carson and the Right Hon. J. H. Campbell expressed their complete sympathy, and as Members of Parliament for the University of Dublin promised to use their best endeavours with Ministers to procure the subsidy of the school by Government. Mr. Conner and Major O'Connor also promised their assistance, and the proceedings terminated with the President's thanks to the visitors. A joint appeal has now been issued by the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland to the Fellows and Licentiates of both these institutions in the form of a printed circular letter which calls attention to the threatened extinction of the School of Surgery of the latter, and urgently implores the readers to use all their available influence with the legislative authorities for the purpose of averting the catastrophe. The only ray of hope visible to the present authorities of the "Conjoint" Colleges for prolonging the existence of the School of Surgery, and the "Conjoint" diploma dependent thereon, lies in the possibility of obtaining a grant from Parliament, and the circular letter in question has just been issued for the purpose of pointing out the anomaly that "this school, which has an unbroken record of 130 years' excellent work, should be the only institution of its kind in the country which receives no grant" from Government. The circular appeal bears the signatures of Mr. Andrew J. Horne, President of the Royal College of Physicians, and Mr. John Lentaigne, President of the Royal College of Surgeons. The names of the past leaders of professional progress in the Irish Royal College of Surgeons are indelibly stamped on the history of surgery, as is well known to all well-informed readers. For at least three-quarters of a century they occupied conspicuous places in the foremost rank of professional theory and practice. Even one generation ago the School of the Royal College of Surgeons was the largest in Ireland, and the sacrifices which it has made in the interests of professional amalgamation and progress should surely not be turned against it.

Gas-poisoning in Belfast.

At the inquest on the death of Alderman J. Rooney, who died from gas-poisoning on Jan. 7th, Dr. W. J. Wilson, lecturer on hygiene in the Queen's University of Belfast, deposed that, with Mr. J. H. Totton, B.Sc., county analyst of Armagh, he had found that the blood of the dog discovered in the bedroom where Mr. Rooney had died was saturated with carbon monoxide to the extent of 76 per cent. Their conclusion was that the dog died from carbon-monoxide poisoning. They had also examined samples of the gas supplied to the city of Belfast and found that the average per cent. of carbon monoxide in it was 20·3. Ordinary coal-gas, free from carburetted water-gas, had from 6 to 8 per cent. of carbon monoxide. Therefore, the supply of the city of Belfast contained at least 12 per cent. of carbon monoxide above the average for coal-gas. In poisoning by gas the carbon monoxide, and it alone, was the lethal agent. The Departmental Committee on Water-gas, which reported to the Home Office in 1899, recommended that the limit of carbon monoxide in gas supplied during the eight hours should be 12 per cent. Dr. Wilson said his conclusions were that the number of accidents referable to the use of mixed gas increased approximately as the cube of the gain in percentage of carbon monoxide. Thus, if the percentage of carbon monoxide were increased from 6 to 12, the chance of being poisoned was not twice, or even four times, but eight times as great as before the increase; and if the carbon monoxide became three times as abundant as heretofore, the chances of being poisoned became increased no less than twenty-seven-fold. The manager of the gas-works in Belfast said that in the Belfast carburetted water-gas there was about 32 per cent. of carbon monoxide, as compared with 50 per cent. in Liverpool and Bath, 51 per cent. in Dublin and Southport, and 40 per cent. in the Gas Light and Coke Company which supplied the City of London. Belfast was lower than these places, and for the last three months of October, November, and December the average in Belfast gas was 46 per cent. of water-gas and 54 per cent. of coal-gas. At the time of the accident he thought the gas would be about at full pressure, and he would say that the meter was passing about three cubic feet per minute or about 100 cubic feet per hour, at the time. He was of opinion that death must have ensued in about ten minutes or a quarter of a hour from the time that Mr. Rooney became subject to the gas. The arrangement of piping he saw under the floor of the room in which the accident occurred was highly dangerous, as there should always be a space between gas-pipes and pipes conveying electric wires, but the corporation had no power to regulate the laying of piping throughout a house. Other evidence showed that the mistake made in the installation of gas and electricity was in having allowed a branch of a gas-pipe to come in contact with the casing carrying the electric wire. The jury found that "Death was due to accidental gas-poisoning," adding a rider that more care should be taken in the laying of gas-pipes close to electric wires.

Jan. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Sciatic Neuralgia.

THE best general treatment for neuralgic conditions of the sciatic nerve consists, according to M. Caussade and M. Queste, in epidural injections of a local anæsthetic. In describing their observations at a recent meeting of the Société Médicale des Hôpitaux they said that cases of an extremely severe, paroxysmal, and inveterate character had sometimes recovered very quickly, and even immediately, after a single injection of 1 or 2 centigrammes of cocaine; in general, however, and especially in chronic cases, the treatment had to be repeated. The amount of pain that was present should be regarded as the guide to the estimation of the appropriate dose of the anæsthetic, and when the pain was very severe there should be no hesitation to inject as much as 6 or 8 centigrammes of cocaine or stovaine at a time. In the neuralgic conditions of the sciatic nerve attributed to rheumatism, to cold, or to some diathesis, the question was one of radical cure; whereas in the forms, which appeared to be symptomatic of diseases such as syphilis or malaria, or to be due to compression, the treatment must be merely palliative. Sometimes the tender points of Valleix continued to be painful, but this lingering symptom disappeared in a few weeks after the treatment. In some exceptional cases M. Caussade and M. Queste observed that pain disappeared in the distal portion of the lower limb while persisting in the proximal part of the sciatic nerve. There was also a paradoxical effect which deserved notice—namely, the disappearance of the tender points of Valleix, although the ordinary neuralgic pain continued as before. Among more than 30 patients treated as above described, some of them with large doses of the local anæsthetic, there was only one who suffered from toxic manifestations, the symptoms not being at all serious.

Ambulatory Treatment of Fractures of the Femur.

At a meeting of the Surgical Society held on Dec. 29th, 1909, M. Reynier presented a report on the ambulatory treatment of fractures of the femur by means of an apparatus invented by M. Savariaud. Two patients who had made use of the apparatus in question had been shown by M. Savariaud at a previous meeting of the society; they were able to walk after the second day following the accident and they recovered without either any shortening of the limb, any muscular atrophy, or any stiffness of the joints. In applying the apparatus M. Savariaud first anæsthetised the region of the fracture by means of cocaine. A large anterior splint extending from the fold of the groin to the root of the toes was then placed in position and tarlatan impregnated with plaster was applied to the sides of the limb and so arranged that one strip occupied the inner portion of the fold of the groin, while the other was in contact with the crest of the iliac bone. This compound splint was held together by means of plaster bandages and was allowed to become dry, care being taken during the process of drying to make vigorous traction on the lower portion of the limb. As already mentioned, the patients walked after the second day; for 15 days they went on crutches and afterwards used a cane; the apparatus was removed on the fiftieth day. M. Lucas-Championnière and M. Tuffier said that they were not in favour of appliances which enabled patients to walk at an early stage. In their opinion the surgeon's efforts should be directed principally to the coaptation of the fragments which ought to be held end to end as much as possible and to be truly aligned.

Sporotrichosic Arthritis of the Knee.

A case of sporotrichosic arthritis of the knee was recently shown by M. Moure at a meeting of the Société Médicale des Hôpitaux. The disease began as an ordinary hydrarthrosis and subsequently presented the appearance of tuberculous arthritis, with production of a series of suppurating nodules along the thigh. The sporotrichium Beurmanni was discovered in a state of purity in the fluid from the joint and in the pus from the osseous and subcutaneous gummata. Rapid recovery ensued on treatment with iodine.

Treatment of Chilblains.

According to M. Jacquet and M. Jourdanet chilblains are caused by a conflict of multiple irritations. In a communication on this subject read at a meeting of the Academy of Medicine held on Jan. 4th they said that one factor in these irritations was the influence of cold or rather of rapid and repeated alternations of cold and heat, whilst another factor consisted of various organic reflexes. The effect of these causes was that the vascular system of the skin suffered from functional impairment with the production of stasis, erythema, engorgement, and ulceration. In treatment the first consideration was exercise and elevation of the extremities. Very frequently—every hour if possible—the patient, sitting comfortably on the edge of a bed, should raise his arms to their full height for several minutes, at the same time making with his hands, and especially with his fingers, rapid and alternating movements of complete flexion and extension. Similar exercises of elevation and movement were applicable to the feet, the patient being either seated or recumbent. During the intervals between these exercises care should be taken not to let the hands hang down or swing to and fro, and when there were chilblains on the toes the person should keep as much as possible in the horizontal position with the feet raised. Of course, the extremities should be well protected against cold. After a few days of this treatment the local asphyxia diminished, the doughy condition disappeared, and the stiff and swollen fingers resumed their natural condition. Massage might then with advantage be added to the exercises already described, the best form of it being gradual kneading of the tissues.

Treatment of Tuberculosis by Marmorek's Serum.

M. Letulle has for 14 months been making trials of Marmorek's serum in the treatment of tuberculosis, and at a recent meeting of the Société Médicale des Hôpitaux he gave some details of a successful case. The patient was a man suffering from tuberculous pyrexia with bacilli in his sputum and signs of advanced pulmonary lesions. Everything possible had been done for him in the way of hygienic and dietetic treatment. The giving of the injections was soon followed by phenomena of anaphylaxis and a great rise of temperature, which necessitated discontinuance of the injections. Enemata were then resorted to and in eight months 500 cubic centimetres of serum were administered in this way. The patient's general condition was now considerably improved; he had gained in weight, the pyrexia had quite come to an end, the physical signs showed little change, but the bacilli had entirely disappeared from the sputum.

Jan. 17th.

SWITZERLAND.

(From our own Correspondent.)

The Medical Curriculum in Switzerland.

At two special meetings of the Cantonal Society of Medical Practitioners in Zürich, held in December last, and attended by over a hundred medical men, including nearly all the professors of the Medical Faculty of the University of Zürich, some most important discussions with regard to the reorganisation of the medical curriculum took place. The great interest taken in these discussions was evidenced by the fact that the first one lasted for four hours and the second one for seven hours (from 4 to 11 P.M.). At present the medical student devotes a minimum of five half-yearly terms to the study of botany, zoology, chemistry, physics, comparative anatomy, anatomy, and physiology, and a minimum of five terms to the clinical study of medicine. Two things are at present obvious and call for readjustment—namely, that the student is overworked, and that the time devoted to clinical medical studies should be prolonged, if necessary at the expense of the general preclinical subjects. A proposal to eliminate the study of botany, zoology, and comparative anatomy from the medical curriculum was negatived by a large majority. An almost unanimous desire, however, was expressed that the preclinical studies should be reduced to four terms. This should be made possible by instituting special courses of lectures for medical students in botany, zoology, and chemistry which should replace the present lengthy courses of general lectures on these subjects. On the other hand, it was thought desirable that the clinical studies, which would thus last six terms, should be increased by one more term to seven, so that the whole medical curriculum could be completed in five and a half years. It must be mentioned here that the majority of students already extend their studies to five and a half and six years. A proposal to add one year to the medical curriculum which the student should employ in practical work as a hospital assistant was negatived by a large majority, as this innovation adopted some years ago in Germany had not proved a success. A motion proposing a reduction of the number of foreign medical students (especially Russians) was not passed, as the statistics compiled by the University authorities showed that owing to stricter rules with regard to matriculation, &c., the number of foreign students had greatly decreased. Two years ago there were 178 foreign students of whom 104 were Russian women, as compared with 102 Swiss students. At present, however, the number of foreigners had declined to 68, of whom 24 were women, whereas the number of Swiss medical students has remained almost stationary (99).

Zürich, Jan. 15th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Syphilitic Disease of the Hypophysis.

AT a recent meeting of the Ophthalmological Society in Vienna Dr. Lauber showed a patient suffering from a condition which has hitherto been observed and recorded only twice. The case was that of a man, 28 years of age, who had become blind a week before admission to the hospital. Examination showed total amaurosis of the left eye with otherwise normal conditions. The right eye had a visual power of 0·9 and was affected with temporal hemianopsia, but was otherwise normal. The patient confessed to having contracted syphilis four years ago. Amongst other symptoms violent headaches and a polyuria of 13 pints in 24 hours were present. X ray examination showed a deepening of the sella turcica, whereupon a diagnosis of syphilitic disease of the hypophysis was arrived at. Daily inunctions with 8 grains (0·5 gramme) of grey ointment were ordered, and after three weeks a distinct improvement appeared. The treatment was continued for three months, a total of 84 inunctions being given, with the result that when the patient was discharged from the hospital his right eye had become normal, the visual power of the left eye was 1·30, and there was temporal hemianopsia, with atrophy of the optic disc. A few weeks later he returned to the hospital because his sight was again affected. After 35 inunctions of grey ointment his symptoms improved again, so that he is practically now in the same condition as when he left the hospital the first time. The diagnosis has not been made on the living patient before, and as already mentioned only two cases have been hitherto recorded.

Refusal of Payment for Notification of Infectious Diseases by Medical Men.

During the debate in the Austrian House of Peers on the new law regulating medical affairs in this country the two medical representatives amongst the peers—namely, Professor Toldt and Professor Ludwig—moved that a fee of 1 krone (10*d.*) should be paid to the medical practitioner for each case of infectious disease notified by him. Hitherto this kind of work was required to be done free of charge. The entire sum necessary to cover the expenses of this innovation would amount to no more than 75,000 kronen or a little over £3000. The two professors endeavoured to show that this recognition of the medical men's work was more of the nature of an ethical appreciation than a real payment, but the suggestion was not accepted. The attitude of the majority of peers towards our profession was clearly illustrated by the remark of one of the members that "the doctor gets paid by his patient, so the State need not be called upon." The important rôle played by the practitioner in preventing the spread of diseases to the house of a labourer as well as to the mansion of the lordly was promptly explained, but without effect. It must be regretted that once more a hope of the general practitioner has been disappointed.

Murderous Attack on a Surgeon.

A sensation has been caused in Vienna by an incident which nearly cost a famous surgeon his life. Professor G. Alexander, the well-known otologist, upon whom the title of extraordinary professor has been quite recently conferred, had operated a few years ago upon a man for a "saddle" nose. The patient, however, did not find the result come up to his expectations, and he therefore had a second operation performed by another surgeon, but with no better success. The dissatisfied patient promptly sued both surgeons for damages on the ground of alleged malpractice, but he was non-suited by the court, and all his subsequent appeals to the higher courts were dismissed. He thereupon manifested mental symptoms of the type of paranoia querulatoria, and quite recently attempted to assassinate Professor Alexander by shooting at him twice at close quarters. Luckily the professor escaped unhurt. The incident illustrates one of the dangers incidental to surgical work, since claims for malpractice have been very often raised of late apparently for blackmailing purposes. It is to be feared that the example set by this patient may find imitators, especially if at the trial the jury brings in a verdict of "Not guilty, because of unsound mind." The English friends of Professor Alexander will be glad to hear of his lucky escape.

Destruction of a Hospital by Subsidence and Inundation.

A most unusual and lamentable occurrence took place quite recently in Raibl, a mining district south of Vienna, where there are extensive deposits of coal and metallic ores. Owing to the excavations there had been subsidences of the surface in several places, and a few days ago a small hospital belonging to a mining company, and standing within the threatened area, was observed suddenly to shift its position, after which it disappeared all at once in a chasm and a few minutes later the entire mass of débris and rock was covered by water. No patients happened to be in the hospital at the time, but the medical officer, his family, and the hospital attendants all perished.

The Use of Light in the Treatment of Tuberculosis.

The Austrian Society for the Prevention of Tuberculosis has been making arrangements for the purpose of obtaining accommodation for tuberculous patients in certain mountain villages, where the climatic conditions permit patients of this kind to remain during winter. Thus in the Tyrolese mountains, in Gries, Bozen, Meran, and also in the vicinity of Vienna, at the Semmering mountain range children will be accepted for the so-called light cure as practised in Leysin and reported upon by Dr. Monti. The ultra-violet rays, whether coming direct from the sun or reflected from the snow, are believed to produce a marked effect upon tuberculous conditions which are not too far advanced, and it is stated that the children in the colony of Leysin have been benefited in a degree that justifies imitation of the methods followed in that institution. The children to be sent to the new colonies are selected from the inmates of the children's hospitals, all those showing pyrexia being rejected.

Jan. 17th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Water-supply of Toronto.

IT has been decided that the water-supply of Toronto is to be filtered by means of the slow sand filtration process. This decision has given a certain amount of dissatisfaction to some of the citizens who are in favour of ozonisation by the agency of electricity. In Lindsay, a small town of Ontario, there has been installed recently an electric filtration plant to purify the town's water-supply. The principle of the system now in vogue in Lindsay is said to be the same as that of the plants employed in several German and French towns. The process of purifying the water in Lindsay is a modification of what is known as the Siemens Schuchert ozone system. The supporters of this system in Toronto and in Lindsay insist that as a method of water purification it is far superior in efficiency to any, and that it is also the cheapest process known. Erlwein, who is the chief electro-chemist at the Siemens Schuchert works in Berlin, has estimated that with a large plant the cost might be as low as about ½ cent, less than ½*d.*, per 1000 gallons. At the Fourteenth International Congress of Hygiene and Demography, held in Berlin in 1907, a discussion on the ozone purification of water was initiated by French delegates, and the method was thus commented on by THE LANCET representative: "It is sharply distinguished as being a sterilising and not a clarifying process, and its use presupposes that the water is practically free from suspended organic matter." In a few words, ozonisation of water by electricity is mainly a sterilising process, and as such stated by good authorities to be an extremely efficient one. But before it undergoes this process it must be filtered, through sand or otherwise, to eliminate all solid matter. The fact, however, that ozone does destroy some organic matter is seen in the change which takes place in dark-coloured waters to a greenish-blue. The Toronto Board of Health and its upholders contend that the ozonisation of water has not been tested for a sufficiently long period nor on a large enough scale to warrant its substitution for the slow sand filtration process, which has proved its value by many years of use in large cities and small towns in all parts of the world.

Pollution of the Niagara River at Niagara Falls.

At a meeting of the New York State sanitary officers held recently in Rochester, N.Y., Professor W. T. Sedgwick of the

Massachusetts Institute of Technology, stated that in his opinion Niagara Falls was one of the worst plague spots, if not the very worst, in regard to typhoid fever in the United States. The speaker pointed out that the sewage pollution of Niagara Falls was a question not of merely local but of national and international importance, for Niagara was visited annually by hundreds of thousands of persons, many of whom contracted typhoid fever there. Professor Sedgwick asserted that the existing state of affairs at Niagara Falls was a public disgrace to New York State and to the United States at large. There is a chute at Niagara Falls through which the garbage of the city is discharged into the river, and it is declared on good authority that dead horses, cats, and dogs are often dumped down this chute. Sanitary conditions at Niagara, of course, closely concern us here.

Ontario Provincial Board of Health Experimental Station in Toronto.

Dr. C. Hodgetts, Secretary of the Ontario Provincial Board of Health, has been chiefly instrumental in establishing an experimental station in connexion with the board on the outskirts of Toronto. For a long period there has been great dissatisfaction with the manner in which the sewage of Toronto has been disposed of and also with the water-supply. The disposal of the sewage and the question of a pure water-supply are so intertwined that one cannot be dealt with alone.[1] It has been decided recently that the sewage of Toronto shall be discharged into Lake Ontario at a safe distance from the water-supply intake, and that the former shall also be treated before it is so discharged. Furthermore, as I have said above, the water-supply is to be filtered. The object of the erection and equipment of the experimental station by the Ontario Board of Health is to provide proper facilities for experimenting in the treatment of sewage and in the purification of water, and the building put up by the board appears to be well adapted for the purpose. It is a long wooden building, containing laboratories, offices, and an apartment in which are placed the means for conducting the necessary experiments. These in part consist of large wooden tanks ranged along each side of the room, the receptacles on one side containing sewage and those on the other side water. The sewage is pumped into the tanks from an adjacent sewer by the agency of an electric engine, and the water is similarly forced into the remaining tanks from a main close by. The sewage in the vicinity of the station is well suited in some ways to the purpose of experiment, as it is particularly thick and foul. The action upon it of various chemicals is now being carefully tested.

Toronto, Jan. 8th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

PLAGUE returns for the week ending Dec. 11th, 1909, show 5736 deaths, against 4013 in the week preceding. Bombay Presidency reported 644; Bengal, 343; the United Provinces, 2432; the Punjab, 1287; Burma, 61; the Central Provinces, 450; Central India, 44; Rajputana, 284; and Mysore State, 88. Plague has decreased in Nagpur city, where only 61 deaths occurred during the week, but there were 143 in the district.

Calcutta Hospitals.

From statistics compiled by the Government of Bengal it appears that the number of admissions to the various leading hospitals in Calcutta is increasing year by year, and in order to meet the growing demand which is made on these institutions it has been found necessary to provide additional accommodation. But these additions are not all that is necessary, as a corresponding addition must be made to the nursing staff. In order, therefore, to provide for a larger staff of nurses the Calcutta Hospital Nurses' Association is making a special appeal to the leading European and Indian residents of Calcutta for contributions, estimated at about half a lakh. This sum, it is understood, the local Government is unable to provide; hence the necessity for the appeal.

A Hospital at Muscat.

Muscat is advancing with the times, a prominent mark of progress being the recent laying of the foundation-stone of a hospital which is to be erected upon a site that has been presented by certain of the Sultan's subjects who are resident in Zanzibar. The plans were originally framed by Mr. Totaram, Supervisor of the Indian Public Works Department, in accordance with the wishes of His Highness the Sultan, in consultation with the present British Consul, his predecessor, and leaders of several communities in Muscat, the plans having been subsequently examined and revised by the executive engineer, Karachi Canals District, who also secured the services of a local contractor, Mir Mahomed Baloch, to carry out the work, towards which Rs.60,000 have already been subscribed. The building has been designed with commendable attention to secure privacy for women and to meet the needs and idiosyncrasies of the various classes who may resort to the institution. In inviting the Sultan to lay the foundation-stone H.B.M.'s Consul referred to a preliminary meeting held on Feb. 6th last to devise measures to erect the projected building and to His Highness's generous contribution towards the cost of the work and to the encouragement it has consistently received at his hands since that date. The object of the meeting had been steadily kept in view. Excavations for the building began last August, and the work had so far progressed that hopes are entertained that the structure will be completed by April next. In conclusion, the Consul expressed the hope that as the stone His Highness was invited to lay was the foundation of a hospital, the hospital itself might be the foundation of other works of charity and public good in his dominions, and tend to unite in a common bond of fellowship and community the various races of divergent creeds and conflicting interests over which he rules. Finally, the Consul said he trusted that the hospital, when completed, might prove a monument of the Sultan's enlightenment and public spirit and of the charity and generosity of the subscribers to the movement. He presented His Highness with a trowel with which the formal ceremony was performed.

Obituary.

Major J. C. Weir, R.A.M.C., died suddenly from cholera in the early hours of Dec. 20th on board the *Damukdia*, the Sara Ghat steamer. Major Weir, who was sanitary officer of the Lucknow command, had been spending a few days at Darjeeling and was on his way to Calcutta. He was buried at Calcutta on Dec. 21st with military honours.

Dec. 22nd, 1909.

Obituary.

GEORGE SKENE KEITH, M.D. EDIN., F.R.C.P. EDIN., L.R.C.S. EDIN., LL.D. ABERD.

A STRIKING figure has passed away from the medical stage with the death of Dr. George Skene Keith at the great age of 90 years, the attainment of which he himself attributed to his adoption of the simple regimen laid down both in his two essays entitled "Fads of an Old Physician" and "A Plea for a Simpler Life," and in his "Papers on Sanitary and other Matters," which made a considerable stir some 15 years ago. These essays were based upon principles which Dr. Keith had preached and observed for many years, having adopted them at a time when the current of medical opinion was distinctly hostile to them, and he had to put up with some laughter and some misrepresentation in consequence.

Dr. Skene Keith was born at St. Cyrus, near Montrose, in 1819, being the second son of the Rev. Dr. Alexander Keith, who contributed several books on prophesy to theological literature. He was educated at the Grammar School and at the University of Aberdeen, where he was prize taker in all the classes at the Marischal College, and subsequently proceeded to Edinburgh, where he took his M.D. degree in 1841. In the same year he became L.R.C.S. of Edinburgh, and four years later a Fellow of the Royal College of Physicians in the same city, after studying at Pesth (now Budapest) and in Paris, as was not unusual for promising British graduates of medicine in those days. At Edinburgh he was the head medalist in the first of the great Simpson's classes, and it is on record that he was the first person whom Simpson anæsthetised with chloroform. Leaving Edinburgh shortly afterwards to practise for a year in Rome, Skene Keith returned to Scotland in 1845 and again settled in the capital, where he was associated in practice for five years with Sir James Simpson and continued subsequently as a physician with increasing practice and reputation until his retirement in 1880. At one time he is said to have had the largest practice in Edinburgh. In 1895 he was made LL.D. of the University of Aberdeen.

---

[1] THE LANCET, Dec. 11th, 1909, p. 1778.

As a youth he had acquired a taste for travel, having visited Palestine with his father, and during the last 30 years of his retired life he sojourned in many parts of the world, and being a keen amateur photographer brought home many interesting mementoes of his journeys. In 1849 he married Euphemia, daughter of Robert Hislop of Prestonpans, by whom he had one son and four daughters. As we have said, it was by his revolutionary ideas of diet and medicine that he was best known. During the busiest time of his practice he began to suffer from such severe sick headaches that he had serious thoughts of giving up work, but writing to a professional brother in Manchester he was strongly advised to give up meat instead, to cut down stimulants of all sorts, and to rely for treatment on a rigid diet and rest in bed when he felt ill. These principles he adopted with such success that he prescribed them for many patients. He gave no alcoholic stimulants and very few drugs, though he was a great believer in the alterative virtues of liquorice, and there can be little doubt that, though he was an extremist, his influence was valuable during a period of medical practice still too much addicted to polypharmacy. His "Plea for a Simpler Life" was published in 1895. It was written pleasantly, tersely, and with a sense of honest conviction. Two years later an expanded version of the book appeared under the title of "Fads of an Old Physician," which contained an outline of Dr. Keith's daily diet. His chief meal was dinner at 1 P.M., consisting of vegetable or fish soup, followed by not more than three ounces of fish, with potato and another vegetable, stewed fruit and cream, or pudding, or fruit tart. Once or twice in the week he might substitute not more than 2 ounces of lamb or game, rabbit or tripe for the fish. He had the greatest respect for hot water, which he believed to be a valuable stimulant, and though he used alcohol very sparingly he never preached total abstinence. We have recalled his habit of living in some detail because, to use a homely proverb, no man ever found more satisfactory proof of his pudding in the eating of it than he. It need hardly be said that Dr. Skene Keith was held in veneration by a large body of friends and acquaintances, and the medical profession must regret the snapping of a link with the days of Bell, Brodie, and the Coopers.

JOHN W. WATSON, M.D., M.CH. R.U.I., L.R.C.P. & S. EDIN.

AFTER a period of failing health, due to gradually advancing cardiac disease, Dr. J. W. Watson, the oldest medical practitioner in Limavady, died at his residence in that town—situated in the centre of Co. Derry—on Jan. 10th, at the age of 64 years. Dr. Watson studied at Queen's College, Belfast, and in 1871 graduated M.D. of the Queen's (afterwards the Royal) University; he was also a Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh. While a student he resided in the old Royal Hospital, Belfast, as a contemporary of Dr. John W. Browne, chairman of the present medical staff of that institution (the Royal Victoria). He began practice in Limavady, where he became dispensary doctor, and 30 years ago he succeeded the late Dr. Albert Lane as medical attendant at the workhouse. He was on one occasion President of the North-West (Ireland) branch of the British Medical Association. He held several important appointments, being medical attendant for the Midland Railway Company at Limavady, the local police, post office, and he was officer of health of Limavady urban and rural districts. Dr. Watson had also a large private practice, but a few months ago his state of health obliged him to resign his public appointments. Until quite recently he was chairman of the urban school committee and manager of Limavady National School. He married a daughter of the late Mr. W. Osborne, J.P., of Altmover, and he leaves two daughters, his wife, a sister of Mr. H. D. Osborne of Belfast, having died a few years ago. Dr. Watson was a man popular alike with poor and rich, and he will be greatly missed in Limavady.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Professor Brissaud, an eminent Paris neurologist, aged 57 years. He took charge of Charcot's ward at Salpêtrière for a year and published his "Leçons sur les Maladies Nerveuses." His clinical lectures at the Hôtel Dieu were very popular.—Dr. C. J. Snijders, an aged Dutch practitioner, who translated several English novels into his own language. In early life he had been a ship's surgeon, and after settling down in practice worked up his classics privately in order to qualify for a university degree. This he succeeded in obtaining with "highest honours" at Utrecht in 1862, his thesis being on "Eclampsia Gravidarum."—Dr. P. Lesshaft, formerly professor of anatomy in the University of Kazan.—Dr. Assunto Spediacci, extraordinary professor of surgical pathology in the Sienna Medical School.—Dr. Erik Johan Widmark, professor of ophthalmology in Stockholm.—Professor F. C. Valentine, a well-known New York surgeon, whose specialty was the diseases of the genito-urinary system.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the second professional examination of the Conjoint Examining Board in Anatomy and Physiology held on Jan. 6th, 7th, 10th, and 11th, 78 candidates presented themselves, of whom 49 passed and 29 failed. The following are the names of the successful candidates:—

William Stuart Armitage, St. Mary's Hospital; William Somerset Birch, King's College; Auguste Rene Bourgault-Ducondray, University College; William Hackett Broughton, Manchester University; Robert Graham Brown, London Hospital; Kenneth Bleckly Clarke, Guy's Hospital; Eric Clarence Cline, Guy's Hospital; Alfred Beuthin Danby, Guy's Hospital; Hinton de Silva, L.M. & S. Ceylon, Ceylon Medical College and King's College; Stephen Ormond Dolan, Leeds University; John Dotto, St. Bartholomew's Hospital; Paul Dvorkovitz, St. Bartholomew's Hospital; Gertrude May Flumerfelt, Royal Free Hospital; Harold Cane Godding, Guy's Hospital; John Greene, Birmingham University; Percy Douglas Hamilton, Charing Cross Hospital; Frank Cornwell Hunot, Guy's Hospital; Edmund Basil Jardine, University College; Evan Lawrence Jones, Guy's Hospital; Nagubai Moreshewar Joshi, L.M. & S. Bombay, Grant Medical College, Bombay; Kaikobad Bejonji Kanga, L.M. & S. Bombay, Grant Medical College, Bombay, and King's College; Nawin Chand Kapur, B.A., Lahore and University College; Francis Harry Kelly, Middlesex Hospital; Gordon Burnham King, University College; Gerald Laurence, Middlesex Hospital; Eadbert Ralph Longstaff, St. Bartholomew's Hospital; Margaret Josephine McEnery, Royal Free Hospital; Kalka Prasad Mathur, Lahore Medical College and London Hospital; William Henry Matthews, Charing Cross Hospital; Alexander George Hains Moore, Guy's Hospital; Constance Anderson Mortlock-Brown, Royal Free Hospital; Chandrashekha Damodar Pande, Bombay and King's College; Stylianos George Papadopoulos, St. Bartholomew's Hospital; Danevattege Don Philip Perera, Ceylon Medical College and University College; Ardeshir Beheramshah Pestonji, B.A., L.M. & S. Bombay, Bombay and London Hospital; Walter Graham Reynolds, St. Mary's Hospital; Geoffrey Bower Richardson, St. Bartholomew's Hospital; William Barwise Sanders, University College; George Douglas Sherwood, B.A. Cantab., Cambridge University and Middlesex Hospital; Thomas Sidney Stafford, Birmingham University; James Simpson Strachan, London Hospital; Arnold Rothwell Taylor, Manchester University; Arthur Tilbury, Guy's Hospital; Maurice Lawrence Treston, London Hospital; Watkin Watkins, University College, Cardiff, and London Hospital; Clement Arthur Webster, Manchester University; Noel Tancred Whitehead, St. Thomas's Hospital; Miles Astman Knight Wood, St. Bartholomew's Hospital; and William Worger, Bristol University.

FOREIGN UNIVERSITY INTELLIGENCE.—*Algiers:* The Schools of Superior Instruction have now been combined together and their aggregate status raised to that of a complete university with the right to confer degrees. The medical and pharmaceutical schools will form a combined or "mixed" faculty.—*Berlin:* Dr. Anton Stricker, Prosector to the Surgical Clinic in the Ziegelstrasse, has been granted the title of Professor.—*Berlin (Kaiser Wilhelm's Akademie):* Dr. Schwiening, senior staff surgeon, who has been *Referent* in the Medical Department of the Ministry of War, has been appointed Professor of State Medicine.—*Berne:* Dr. T. Christen has been recognised as *privat-docent* of Medicine.—*Bonn:* Dr. Doutrelepont, Director of the University Dermatological Clinic, is about to retire, and his post will be filled by Dr. Erich Hoffmann, Extraordinary Professor of Dermatology in the University of Halle.—Dr. Gustav Embden, *privat-docent* of Medicine, has been granted the title of Professor.—*Budapest:* The Professorship of Physiology, vacant by the death of Dr. Ferdinand Klug, has been offered to and accepted by Dr. Ladislaus Udránsky, Lecturer on Physiology in the University of Clausenburg.—*Cincinnati* (*Miami Medical College*): Dr. William B. Wherry has been appointed Adjunct Professor of Pathological Anatomy and Bacteriology.—*Erlangen*: Dr. Hermann Merkel, *privat-docent* of Pathological Anatomy, has been granted the title of Extraordinary Professor.—*Florence*: Dr. Paolo Stefanelli has been recognised as *privat-docent* of Internal Pathology.—*Freiburg*: Dr. Paul Diepgen has been recognised as *privat-docent* of the History of Medicine.—*Halle*: Dr. Friedrich Fromme, *privat-docent* of Gynæcology and Oberarzt in the Gynæcological Clinic, has been granted the title of Professor.—*Heidelberg*: Dr. Otto Rioth, who was formerly Assistant in the Anatomical Institute and afterwards in the Gynæcological and Surgical Clinics, has been appointed Chief Surgeon to the new hospital in Baden-Baden in succession to Dr. Baumgärtner. Dr. Leo Müller, Assistant in the University Medical Clinic, has been appointed Chief Physician in the Baden-Baden Hospital.—*Innsbruck*: Dr. Alfred Greil, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship.—*Lemberg*: Dr. Johann Mazurkiewicz has been recognised as *privat-docent* of Psychiatry.—*Munich*: A new Institute of Forensic Medicine is being established, of which Professor M. Richter will have charge.—*Pittsburg*: Dr. Ralph E. Sheldon has been appointed Adjunct Professor of Anatomy.—*Rome*: Dr. Ermanno Fioretti has been recognised as *privat-docent* of Operative Medicine and Dr. Giulio Nardelli as *privat-docent* of Experimental Pharmacology.—*St. Petersburg* (*Military Medico-Chirurgical Academy*): Dr. V. P. Voyachek has been recognised as *privat-docent* of Laryngology and Otology.—*Vienna*: Dr. Franz Chvostek, Extraordinary Professor of Medicine, has been granted the title and rank of an Ordinary Professor. Dr. S. Ehrmann and Dr. Georg Joannovics have been promoted to Extraordinary Professorships of Dermatology and Pathology respectively. The following have been granted the title of Extraordinary Professor: Dr. Ferdinand Alt, *privat-docent* of Otology; Dr. Konrad Büdinger, *privat-docent* of Surgery; Dr. Johann Paul Karplus, *privat-docent* of Neurology; Dr. Oskar Foederl, *privat-docent* of Surgery; Dr. Joseph Halban, *privat-docent* of Gynæcology; Dr. Joseph Hockauf, *privat-docent* of Pharmacology; Dr. Gustav Alexander, *privat-docent* of Otology; and Dr. Sigmund Fraenkel, *privat-docent* of Chemistry.—*Washington*: Dr. Frederick S. Russell has been appointed Professor of Pathological Anatomy and Bacteriology in succession to Dr. Joseph J. Kinyoun resigned.—*Würzburg*: Dr. Oskar Polano, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Extraordinary Professor.

ROYAL SANITARY INSTITUTE LECTURES.—The forty-ninth course of lectures and demonstrations for sanitary officers will be held during the months of February to April. The first part, consisting of 24 lectures and dealing with sanitary law, the duties of sanitary inspectors, sanitary appliance, elementary science, statistics, and so forth, will commence on Monday, Feb. 7th, and will be continued on successive Mondays, Wednesdays, and Fridays. The second part, dealing with the inspection of food, the hygiene of slaughter-houses and food stores, and the laws governing the inspection and sale of food, will commence on April 15th, Mondays, Wednesdays, and Fridays being also the lecture days. This part of the course, consisting of seven lectures, closes on April 29th. On some of the lecture days and also on Saturdays demonstrations and inspections will take place at various municipal and public buildings conducted for the most part by sanitary inspectors and superintendents of public health departments. Mr. G. Quin Lennane, medical officer of health of Battersea, will conduct the inspection and demonstration at the Battersea Disinfection Station, Mortuary, and Shelter, and Mr. R. Glover, F.R.C.V.S., will conduct the inspection and demonstration at Harrison and Barber's knackers' yard. The lecture hour is 7 P.M. The lecturers include Dr. Charles Porter, medical officer of health of Marylebone; Mr. A. W. Harris, medical officer of health of Lewisham; Dr. G. F. McCleary, medical officer of health of Hampstead; Dr. E. J. Steegmann; Professor H. R. Kenwood; and Dr. E. Petronell Manby, medical inspector to the Local Government Board. The fee for the complete course is £3 3*s.*, or for Part I., £2 12*s.* 6*d.*, and for Part II. £1 1*s.* On Feb. 16th a course of lectures and demonstrations on sanitary science as applied to buildings and public works will commence and be continued on successive Mondays, Wednesdays, Fridays, and Saturdays. The lecture hour is 7 P.M. and the fee for the course is £2 12*s.* 6*d.* A course consisting of lectures and practical demonstrations on physiology, personal hygiene, and the sanitation of school buildings and dwellings intended to assist students entering for the examinations on hygiene in its bearing on school life, and for women health visitors and school nurses, will commence on Monday, March 14th, at 7 P.M. The fee is £1 1*s.* The lecturers for this course include Dr. Eric Pritchard, Dr. A. B. Kingsford, Dr. C. J. Thomas, and Miss Marion Hunter-Vaughan. Further particulars can be obtained from the secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.

PRESENTATION TO A MEDICAL MAN.—The combined staffs of the Wakefield Workhouse and Infirmary have presented William Roulston, M.D., M.Ch. R.U.I., with a handsome set of silver candelabra as a mark of their esteem on his resignation from the post of medical officer to the workhouse, which he has held for the past 24 years. The presentation was made in the board-room of the workhouse on Jan. 3rd. Mr. Herbert Beaumont, J.P., who presided, Mr. Bunter, the master of the workhouse, and other officials all testified to the kindness of heart of the recipient. One of the candlesticks bore the following inscription: "Presented to William Roulston, Esq., M.D., M.Ch., M.A.O., by his fellow officers at the Wakefield Workhouse and Infirmary, in recognition of services rendered to them during his 24 years' medical officership."

DONATIONS AND BEQUESTS.—Mr. Benjamin Stretton, of Hammerwich House, near Lichfield, has forwarded a cheque for £1000 to the Derbyshire Royal Infirmary as a New Year's gift.—Sir Gilbert Greenall, Bart., has given £1000 towards the liquidation of the debt of £4000 on Warrington Infirmary and Dispensary.—By the will of the late Mrs. Jane Rosa Haywood the following bequests have been made: £1000 each to St. Thomas's Hospital, the London Hospital, Whitechapel, the Cancer Hospital, Brompton, the Brompton Hospital for Consumption and Diseases of the Chest, and the Royal Hospital for Incurables, Putney, for the endowment of a bed to be known as the "Jane Rosa Haywood" bed; £1000 to the British Home for Incurables, Streatham, to endow a bed in memory of "my dear parents" William and Jane Wake; £500 to the Hospital for Sick Children, Great Ormond-street (for the endowment of a bed to her memory), and £500 to the London Ophthalmic Hospital. The testatrix also left £250 to the Stockwell Orphanage Convalescent Home, Cliftonville, Margate.—By his will Mr. Henry Hugh Clutton, M.A., M.C. Cantab., F.R.C.S., senior surgeon at St. Thomas's Hospital, who died on Nov. 9th, left £1000 to his wife, £100 to his niece Lucy Clutton, £100 to each indoor and outdoor servant of 20 years' service, £50 to each indoor and outdoor servant of ten years' service, £200 to S. J. Sharkey, and £300 to his brother Walter Clutton. In the event of failure of issue or in the event of the surviving child or children being daughters, and such daughters dying without leaving issue, then subject to any appointment in favour of any of husbands of such daughters, the deceased left the sum of £15,000 to be paid to the trustees of the Medical School, St. Thomas's Hospital, to form a bequest known as "Clutton Bequest," to be held by the proper officers or any trustees to be appointed by them to pay the income for the development of the pathological side of clinical medicine and surgery.—£46,170 2*s.* 2*d.* Probate dated Jan. 4th, 1910, was obtained by the Public Trustee Office, 3 and 4, Clement's Inn, W.C., and this fact, in view of Mr. Clutton's known business ability, can hardly fail to draw attention to the advantages which this office may afford to members of the medical profession.—The late Miss Ellen Morrison, by will, bequeathed £5000 to the Royal Berks County Hospital, £2000 to the King Edward VII. Hospital Fund, £1000 to the Meath Home of Comfort at Godalming, £500 to the Helena Nursing Home at Reading, and £500 to the Clevedon Convalescent Home.—Under the will of the late Mr. William Watson of Newcastle-on-Tyne the Royal Victoria Infirmary of that city will receive £5000 for the endowment of a ward for children in memory of his wife and himself. The Prudhoe Memorial Convalescent Home will receive £300, as will also the Consumption Hospital at Barrasford.—The late Sir Alfred Jones left a sum of about £500,000 upon trust for such charitable purposes and objects in

England (or any British possession on the West Coast of Africa) as his trustees may in their absolute discretion think fit. The testator makes for the guidance of the trustees in the administration of the trust the following suggestions as to purposes to which it might be applied: The advancement, benefit, or support of education or science, and original research of all kinds into the cause of disease on the West Coast of Africa.—The *Times* states that the late Mr. D. Ogden Mills left, among other bequests, £20,000 to the Home for Incurables, New York, and that the late Sir George Shenton, of Crowley, Perth, Western Australia, has left £1000 to the Children's Hospital, now in course of erection, for endowing a cot in the name of his son.

DIPHTHERIA IN HAMBURG.—In consequence of the existing prevalence of diphtheria in Hamburg the sanitary authority, after listening to the views of the Medical Practitioners' Association, decided to publish in the daily newspapers a warning to parents urging the necessity of prompt medical advice on the appearance of sore throat. The authority has also voted £150 for the expense of combating the disease, and especially for the provision of serum in cases where the patients are not in a position to pay for it. A medical practitioner has only to mark his prescription for serum, "To be charged to the Sanitary Department," to obtain it from the nearest pharmacy free. Regulations are also promulgated concerning official assistance in the bacteriological diagnosis.

POOR-LAW GUARDIANS AND CONSUMPTIVES.—At the conference of East Sussex boards of guardians held at Lewes on Jan. 12th to consider the question of the treatment of consumptives a wide divergence of opinion on the subject was shown. It seemed to be agreed that isolation was necessary, but as to the proposal to erect a joint sanatorium (one delegate described such a course as "lumping the patients together in order to keep them separate") the cost of the proposed building was a deterrent to several delegates, while isolation treatment by each union of its own cases was much favoured. Ultimately it was decided that it was desirable that accommodation should be provided for the treatment and isolation of phthisical cases separate and apart from the sick wards of Poor-law institutions, and a committee was appointed to prepare a scheme for submission to its respective boards. Figures presented at the conference showed that there are roughly 100 phthisical patients chargeable to the rates in East Sussex, 40 being inmates of infirmaries, and 60 being in receipt of out-door relief. As this number is spread over 12 unions the figures for each are not large, and the cost of isolation in the cases of the 40 inmates should not prove a very big task to the guardians; while in the cases of the patients receiving outdoor relief the relieving officers could perform a good work by urging upon the patients to do all that is possible to fight against the disease by taking the usual precautions, and avoiding common habits which go towards the spread of the infection.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the above society was held on Jan. 12th at 11, Chandos-street, Cavendish-square, W., Dr. G. F. Blandford, the President, being in the chair. Fourteen directors were present. Eight new members were elected and one death was reported. Since the last court one of the annuitants of the charity had died; she had been in receipt of grants since January, 1867, her husband had been a member for three years and had paid in subscriptions £6 6*s.*; his widow received in grants £2900, and one of her children, a cripple, is still receiving £20 per annum from the Copeland Fund of the society. This instance speaks for itself as to the great advantage to be derived by joining the society. The sum of £518 was distributed in December last as a Christmas present, each widow receiving £10, each orphan £3, and each orphan on the Copeland Fund £5. The funds of the society now admit the annual grants to orphans being raised from £12 to £15 per annum, and a sum of £1238 was voted to pay the half-yearly grants. Six letters were received since the last court from widows of medical men asking for relief, but this had to be refused as their husbands were not members of the society. Relief is only granted to the widows and orphans of life members or ordinary members of at least three years' standing. The invested funds of the society now amount to £100,071. Further particulars and application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W. The next election will be on April 13th, and forms must be sent in two clear weeks before the first Wednesday in April.

MR. LAMING EVANS, F.R.C.S., 36, Bryanston-street, W., and Dr. G. A. H. Barton have been elected secretaries of the Harveian Society of London.

AT a meeting of the Canadian Medical Association held in Winnipeg recently it was decided to establish an official journal for the Association.

BRISTOL MEDICAL CHARITIES.—During 1909 the employees of Messrs. W. D. and H. O. Wills collected £735 for the Bristol medical charities. The workpeople of Messrs. E. and A. Robinson subscribed £282 for the Bristol medical charities during 1909.

THE BRISTOL DISPENSARY.—The annual report of the Bristol Dispensary for 1909 states that during the year 10,993 patients were treated, an increase compared with 1908. 687 midwifery cases were attended, compared with 536 in the preceding year.

METROPOLITAN HOSPITAL SUNDAY FUND.—At a meeting of the Metropolitan Hospital Sunday Fund held at the Mansion House on Jan. 18th, Mr. G. H. Makins, C.B., and Mr. E. Parker Young were elected members of the distribution committee.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council on Jan. 13th the diploma of M.R.C.S. was conferred upon Mr. Arthur Cecil Hamel Rothera, M.A. Cantab., Cambridge University and St. Mary's Hospital, who has now complied with the necessary requirements.

ROYAL BLIND PENSION SOCIETY.—The committee of this society has the privilege of nominating suitable candidates for certain special pensions of £20. Applicants must be widows or unmarried daughters of medical men, totally blind, and in necessitous circumstances. Forms of application and particulars can be obtained of the secretary, 237, Southwark Bridge-road, London.

KING'S COLLEGE (UNIVERSITY OF LONDON).—A course of eight lectures on Recent Progress in Physiological Chemistry will be delivered in the Physiological Laboratory at King's College on the following Mondays at 4.30 P.M.:—Dr. O. Rosenheim: Physiological Chemistry of Proteins, Lipoids, and Putrefaction on Jan. 24th and 31st, Feb. 7th, 14th, and 21st. Dr. F. S. Locke: The Metabolism of Muscle and the Energetic Aspect of Vital Metabolism on Feb. 28th, March 7th and 14th. The course is free to all members of King's College, to all students of medical schools in London, to all internal students of the University of London, and to medical practitioners on presentation of their cards. The course is recognised as a B.Sc. honours course by the University of London.

BOOKS, ETC., RECEIVED.

AMBROSE COMPANY, LIMITED, London.

Spiritualism and Insanity. By C. Williams. Price, cloth, 1*s.* 6*d.* net; paper, 1*s.* net.

Religion and Insanity. By Charles Williams, L.R.C.P., L.R.C.S., L.S.A. Price, cloth, 2*s.* 6*d.* net; paper, 1*s* 6*d.* net.

APPLETON, D., AND COMPANY, New York and London.

Medical Sociology. A Series of Observations touching upon the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D. Price 8*s.* 6*d.* net.

ARGOSY (THE), COMPANY, LIMITED, Demerara.

The British Guiana Medical Annual for 1908. Edited by K. S. Wise, M.B., B.S., B.Sc. Lond. Univ., M.R.C.S. Eng., L.R.C.P. Lond. Sixteenth Year of Issue. Price 5*s.*

BAILLIÈRE, J. B., ET FILS, Paris.

La Pratique des Maladies des Enfants, Diagnostic et Thérapeutique. III. Maladies de l'Appendice et du Péritoine, du Foie, du Pancréas, des Reins, du Sang, des Ganglions et de la Rate. Par Haushalter, Castaigne, L.-G Simon, et Leenhardt. Price Fr.12.

CHARITIES PUBLICATION COMMITTEE, New York.

Visiting Nursing in the United States. Containing a Directory of the Organisations Employing Trained Visiting Nurses, with Chapters on the Principles, Organization, and Methods of Administration of such Work. By Yssabella Waters. Price $1.25, post paid.

Clarendon Press, Oxford.

Herbert Spencer and Animal Evolution. The Herbert Spencer Lecture. Delivered at the Museum on the 2nd December, 1909. By Gilbert Charles Bourne. Price 1*s.* 6*d.* net.

Dornan, William J., Philadelphia.

Transactions of the American Surgical Association. Volume the Twenty-seventh. Edited by Richard H. Harte, M.D., Recorder of the Association. Price not stated.

Transactions of the American Gynecological Society. Volume XXXIV. For the year 1909. (McDowell Centennial.) Price not stated.

Fischer, Gustav, Jena.

Handbuch der Gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Achte Lieferung. Price M. 4.50.

Phono-Kardiogramme. Von Professor Otto Weiss. Siebente Heft der "Sammlung Anatomischer und Physiologischer Vorträge und Aufsätze," herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Nagel. Price M.1.50.

Die Individualisierende Operation der Inveterierten Scheiden-Damm-Mastdarm-Risse. Von Otto Küstner. Price M. 3.50.

Frowde, Henry, and Hodder and Stoughton, London.

Oxford Medical Publications. Diseases of the Heart. By James Mackenzie, M.D., M.R.C.P. Second edition. Price 25*s.* net.

Oxford Medical Publications. Male Diseases in General Practice. An Introduction to Andrology. By Edred M. Corner, M.A., M.C. Cantab., B.Sc. Lond., F.R.C.S. Eng. Price 15*s.* net.

Frowde, Henry, London.

The Harveian Oration on Experimental Psychology and Hypnotism. Delivered before the Royal College of Physicians of London. Oct. 18th, 1909. By George H. Savage, M.D., F.R.C.P. Price 1*s.* net.

Green, William, and Sons, Edinburgh and London.

A Practical Guide to Meat Inspection (Walley). Fifth edition. Rewritten and enlarged. By Stewart Stockman, M.R.C.V.S. Price 10*s.* 6*d.*

Henry Phipps Institute, Philadelphia.

Fifth Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. Edited by Joseph Walsh, A.M., M.D. Price not stated.

Hirschwald, August, Berlin.

Über die Berechtigung des Teleologischen Denkens in der Praktischen Medizin. Festrede gehalten am Stiftungstage der Kaiser Wilhelms-Akademie für das Militärärztliche Bildungswesen, 2. Dezember, 1909, von A. Bier. Price Pf.40.

Die Vergleichende Pathologie der Haut. Von Dr. med. Julius Heller. Price M.24.

Institute of Chemistry of Great Britain and Ireland, London.

A List of Official Chemical Appointments. Compiled, by direction of the Council of the Institute of Chemistry and under the supervision of the Proceedings Committee, by Richard B. Pilcher, Registrar and Secretary of the Institute of Chemistry. Third edition, revised and enlarged. Price 2*s.* net; post free, 2*s.* 3*d.*

Jones, Charles, Limited, London.

Thornton on Patents. (British and Foreign.) The Pith of Patent Law and Practice in the United Kingdom and Abroad, with Rules, Forms, Examples, and Precedents. By Alfred Augustus Thornton, Consulting Patent Agent. Price 21*s.* net.

Karger, S., Berlin.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, A. Steffen, Th. Escherich. 71, der dritten Folge. 21. Band. Heft I. Ausgegeben am 4 Januar, 1910. Price not stated.

King, Sell, and Olding, Limited, London.

The Science Year Book, Diary and Scientific Summary. 1910. Edited by Major B. F. S. Baden-Powell. Price 5*s.* net.

Knight, Charles, and Co., Limited, London.

Space and Spirit. A Commentary upon the Work of Sir Oliver Lodge, entitled "Life and Matter." By R. A. Kennedy. Price 1*s.* 6*d.* net.

Lamb, Frederick J., London.

Transactions of the Medico-Legal Society for the year 1908–1909. Edited by Digby Cotes-Preedy, M.A., and William A. Brend, M.A., M.B., B.Sc. Vol. VI.

Lehmann, J. F., München.

Sehprobentafeln zur Bestimmung der Sehschärfe für die Ferne. Von Dr. F. v. Ammon. Mit 8 Tafeln und einer erläuternden Text-beilage. 2 vermehrte Auflage. Price M. 4.

Lewis, H. K., London.

Some Common Remedies and Their Use in Practice. By Eustace Smith, M.D., F.R.C.P. Price 3*s.* net.

Methuen and Co., London.

The Hygiene of School Life. By Ralph H. Crowley, M.D., M.R.C.P. Price 3*s.* 6*d.* net.

Pharmaceutical Press, London.

The Chemist's Annual and P.J.F. The Pharmacist's Diary and Year-book, 1910. Including additions to the Pharmaceutical Journal Formulary. Edited by John Humphrey. Price 5*s.* net.

Pintos and Co., Rio Grande, Brazil.

A Proposito da Peste Bubonica no Rio Grande. Memoria apresantada na Sessão Extraordinaria do Centro Medico de Pelotas de 6 de Novembro de 1907. Pelos Doutores Feliciano Teixeira da Matta Bacellar João Francisco Lopes Rodrigues, Augusto Duprat, Euclides Mirò Alves, Pio Angelo da Silva, Clinicos da Cidade do Rio Grande. Price not stated.

Sanitary Publishing Co., Limited, London.

The Sanitary Record Year-book and Diary, 1910. Price 2*s.* 6*d.* net.

Saunders (W. B.) Company, Philadelphia and London.

Medical Gynecology. By Samuel Wyllis Bandler, M.D. Second revised edition. Price, cloth, 21*s.* net.

Scientific Press, Limited, London.

The Midwife's Pronouncing Dictionary of Obstetrical and Gynæcological Terms. Edited by Henry Robinson, M.A., M.D. Price 1*s.*

Southern Surgical and Gynecological Association (Secretary, W. D. Haggard, Nashville, Tenn.).

Transactions of the Southern Surgical and Gynecological Association. Volume XXI. Twenty-first Session. Held at St. Louis, Mo., Dec. 15th, 16th, and 17th, 1908. Edited by W. D. Haggard, M.D. Price not stated.

Steinheil, G., Paris.

Éléments d'Obstétrique. Par le Dr. V. Wallich. Deuxième Édition. Price Fr.8.

La Cure Radicale de la Hernie Inguinale. Leçons Professées à l'Hôtel-Dieu. Par le Docteur Lucas-Championnière. Price Fr.3.50.

Unwin, T. Fisher, London and Leipsic. (Garden City Press, Limited, Letchworth.)

Practical Housing. By J. S. Nettlefold. With a Preface by the Right Hon. Alfred Lyttelton, K.C., M.P. Popular edition. Price, paper, 1*s.* net; cloth, 2*s.* net.

Whitaker, J., and Sons, Limited, London.

Whitaker's Peerage, Baronetage, Knightage, and Companionage, for the year 1910. Price not stated.

Wright, John, and Sons, Limited, Bristol. (Simpkin, Marshall, Hamilton, Kent, and Co., Limited, London.)

Open-air at Home. Practical Experience of the Continuation of Sanatorium Treatment. By Stanley H. Bates. With Introduction by Sir James Crichton-Browne, M.D., D.Sc., LL.D., F.R.S. Price 2*s.* 6*d.* net.

Year Book Publishers, Chicago.

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume IX., Skin and Venereal Diseases, Miscellaneous Topics. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. (Series 1909.) Price 5*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Bloxsome, H. E., M.R.C.S., L.R.C.P., has been appointed House Surgeon at the Evelina Hospital for Sick Children, Southwark.

Cope, V. Zachary, M.D., M.S. Lond., has been appointed House Surgeon at the Chelsea Hospital for Women.

Deare, Major B. H., I.M.S., has been appointed House Surgeon at the Chelsea Hospital for Women.

Gorrie, P., M.B., Ch.B. Edin., has been appointed House Surgeon at the Chelsea Hospital for Women.

Gunning, C. J. Hope, M.R.C.S., L.R.C.P. Lond., has been appointed Ophthalmic Clinical Assistant for London County Council purposes at St. George's Hospital.

Heath, Oliver, B.C. Cantab., &c., has been appointed Assistant Curator of the Museum and Assistant Pathologist at St. Mary's Hospital.

Mawby, F. W., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Littleport District of the county of Cambridge.

Mayer, Clifford, M.D., B.S. Lond., M.R.C.S., L.R.C.P., D.T.M. & H. Camb., has been appointed Chief Medical Officer to the State of Baroda, and Physician to the Gaekwar.

Miller, Janet T., M.B., B.S. Glasg., has been appointed Senior Resident Medical Officer at the East Poorhouse Hospital, Dundee.

Pearce, H. G., L.D.S. R.C.S., has been appointed Honorary Dental Surgeon to the North Devon Infirmary, Barnstaple.

Rayment, E. W., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Pewsey District of the county of Wilts.

Russel, Jessie C., M.B., B.S. Glasg., has been appointed Junior Resident Medical Officer at the East Poorhouse Hospital, Dundee.

Shapland, Hubert R., L.D.S. R.C.S., has been appointed Honorary Dental Surgeon to the North Devon Infirmary, Barnstaple.

Steadman, F. St. J., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed Honorary Dental Surgeon to the Metropolitan Hospital.

Watson, C. Gordon, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Surgeon to St. Bartholomew's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Bootle Borough Hospital.—Honorary Physician. Also Clinical Assistant. Salary £50 per annum.

Bristol Dispensary.—Medical Officer.

Bristol Royal Infirmary.—Honorary Assistant Dental Surgeon. Also Honorary Dental Anæsthetist.

Bristol University.—Demonstrator of Anatomy. Also Demonstrator of Physiology. Salary £180 per annum each.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

CHELTENHAM GENERAL HOSPITAL.—House Physician and House Surgeon, unmarried. Salary £70 per annum each, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for Inspection of School Children. Salary £300 per annum with travelling expenses.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Senior Resident Medical Officer, unmarried. Salary £100 per annum, with full board and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

KELLING OPEN-AIR SANATORIUM.—Resident Medical Officer. Salary £250 per annum, with house.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary is at rate of £50 per annum, with board, residence, &c.

LEEDS INFECTIOUS DISEASES HOSPITALS AND SANATORIUM.—Resident Medical Officer, unmarried. Salary at rate of £110 per annum, with board, lodging, and washing.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEEDS UNIVERSITY SCHOOL OF MEDICINE.—Research Assistant. Salary £100 per annum.

LIVERPOOL UNIVERSITY CANCER RESEARCH LABORATORY.—Research Worker. Salary £150 per annum.

LONDON MISSIONARY SOCIETY.—Lady Doctor.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

MANCHESTER, MONSALL FEVER HOSPITAL.—Third Medical Assistant for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Assistant Medical Officer. Salary £25 per annum. Also Honorary Assistant Physician.

MANSFIELD, BOROUGH OF.—Medical Officer of Health and Medical Inspector of School Children. Salary £400 per annum.

OLDHAM INFIRMARY.—Second House Surgeon. Salary £100 per annum, with residence, board, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £80 per annum, with board, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E. Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Clinical Assistants for six months.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

THROAT HOSPITAL, Golden-square, W.—Surgical Registrar. Salary 20 guineas per annum.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Medical Officer-in-Charge of the Electro-Radiographic Department.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

YARMOUTH COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary £225 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Wootton Bassett, in the county of Wilts; and at Rayleigh in the county of Essex.

Births, Marriages, and Deaths.

BIRTHS.

GOING.—On Jan. 11th, at Erinagh, Littlehampton, the wife of R. M. Going, F.R.C.S. Eng.—a daughter.

MARTIN.—On Jan. 8th, at Clock Cottage, Abingdon, the wife of Paulin John Martin, M.R.C.S., L.R.C.P., of a son.

NITCH.—On Jan. 18th, at Harley-street, W., the wife of Cyril A. R. Nitch, M.S., F.R.C.S., of a daughter.

PENROSE.—On Jan. 15th, at West Bar, Banbury, to Dr. and Mrs. Nevill Penrose, a son (stillborn).

THOMAS.—On Jan. 10th, at Goodwick, S. Wales, the wife of H. Mortimer Thomas, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

MACKEY—PUGIN.—On Jan. 15th, at Church of the Holy Trinity, Brook Green, W., Leonard George Mackey, M.D., to Florence Maryon, elder daughter of the late Peter Paul Pugin, K.S.S., and Mrs. Pugin, and granddaughter of the late Augustus Welby Pugin.

DEATHS.

KEITH.—On Jan. 12th, at Moidart, Currie, Midlothian, George Skene Keith, M.D., F.R.C.P.E., LL.D., in his 91st year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A DANGEROUS SWINDLER.

A MAN named John Birnhard, described as a clerk, was recently sentenced by Mr. Dickinson for obtaining money by false pretences of an unusual character from young women. The methods adopted by the prisoner in the case gone into before the magistrate were apparently followed with equal success in other instances, and the prosecution was undertaken by the Jewish Association for the Protection of Girls and Women, which is to be congratulated upon having brought a scoundrel to justice. In the case tried Birnhard was introduced in the street to Dora Morris, a girl 19 years of age, by one of her companions, when he represented himself as being "a doctor at the London Hospital and University Hospital." He heard Morris cough and gave her a prescription, afterwards visiting her at her home, when he pretended to make an examination, prescribed again, mentioning a druggist to whom the prescription was to be taken, and declined to charge, stating that he would treat her as a friend. He represented, however, that she was suffering from chronic bronchitis, and offered to get her into an institution where she could be treated. The ingenious and circumstantial story by which he obtained small sums of money to pay for the cost of this treatment, though successful at first, led to his undoing. He told the girl's mother that the cost of placing her daughter in the institution would be three guineas, but that he could get the money from benevolent persons. These he named in detail, and mentioned among them the Hon. Gerald Montagu, engaged in philanthropic work at a boys' club in Fordham-street, whom he represented later as subscribing 1 guinea. Up to this point he had not asked the Morris family for money, but he afterwards informed them that they must give him 3*s.* 6*d.* for a "form," and also 1 guinea to make up the sum of £6 6*s.*, which he had ascertained to be necessary for a complete cure, and of which he had been able to collect for them £5 5*s.* When this guinea was paid he made a second examination of the girl and took part in the removal of her clothing for the purpose. A letter giving instructions as to the whereabouts of the promised institution, of which he had shown a genuine prospectus, was signed by him, "John Birnhard, F.R.C.S." Suspicion, however, was roused by information received from other girls, and application to Mr. Montagu confirmed it at once by showing that this gentleman knew nothing of the man who claimed to have obtained a guinea from him. Evidence at the hearing further proved that Birnhard had had no connexion whatever with the London Hospital, and that his name was not on the Medical Register. In passing a sentence of six months' hard labour Mr. Dickinson laid stress on the evidence as to the pretended medical examinations of a partially unclothed girl, and pointed out that they might have been charged as indecent assaults. It is to be regretted that they were not, as the sentence is by no means a severe one if the fact is taken into account that there were other similar charges against the accused.

THE PREPARATION OF SOURED MILK.

To the Editor of THE LANCET.

SIR,—Owing to the difficulty which I have experienced during the past year in obtaining uniform results in curdling milk with various of the apparatus on the market worked with a night-light, I have had made an electric oven of simple character, a brief description of which may be of interest and helpful to some of your readers. It consists of an ordinary wooden box, about 2 feet by 3 feet by 2 feet, lined with asbestos and fitted with a metal tray sliding in and out and warmed by two 8-c.p. electric lamps. A thermometer is passed through a cork in the top, just as in a bacteriological oven. The front of the box works on a hinge and falls down to allow of the removal of the metal tray which holds about 30 glasses. It is also fitted with a small sliding door, about 2 inches by 8 inches, by means of which a supply of cooler air is regulated to prevent the temperature of the box from getting too high. The temperature runs from 105° to 108° F. as a rule, the best results in curdling being so obtained. The apparatus can be made by any good joiner, and is well worth the attention of any medical man interested in soured milk who has the electric current in his house.

I have now practically given up tablets for souring purposes with the exception of Boucard's, which I sometimes use with very good result for starting a new series of cultures. When the souring is once started, however, one can go on from day to day by inoculating each glass of milk with a small portion—about a saltspoonful—of the previous day's curd. This may be done for at least a fortnight, when a new strain is started. Dr. Herschell, who has written much on this subject, has elsewhere expressed strong disapproval of this method as theoretically unsound, and he questions if the bacillus of Massol can be found at the end of a week. As I have myself found it in numbers in a curd which was over a month old as regards fresh inoculation, and had my finding confirmed by an expert bacteriologist, it is plain that Dr. Herschell is mistaken.

Provided the temperature of the apparatus used in souring is kept fairly even—about 106°–107° F.—and a reliable culture, either liquid or in tablet form, is employed to start, there is no special difficulty about any medical man or intelligent patient preparing excellent soured milk capable of doing all that can be therapeutically or dietetically claimed for it. I am, Sir, yours faithfully,

The Hydropathic, Peebles, Jan. 17th, 1910. T. D. LUKE.

BEER IN SYPHONS.

FROM the hygienic point of view there is a good deal to be said in favour of distributing beer to the consumer in a clean capacious glass syphon. The beer need never come into contact with air on account of which objectionable changes often set in. Every part of the syphon is accessible for cleaning purposes, and should uncleanliness occur it can be observed. Not one of these advantages applies to beer in barrel. The Bernard Beer Co. of 71, Bond-street, South Lambeth, have made a very successful attempt to keep beer clean, brisk, and bright in a syphon and out of contact with the air by means of the device shown in the accompanying illustration. A small cylinder of carbonic acid gas can be released in just sufficient quantity to elevate or gently force the beer up the syphon tube through the tap. An excess of gas is avoided by means of a counter pressure chamber which automatically regulates the supply of gas exactly to the pressure necessary to empty the syphon as aliquot measures of the beer are required. There is thus no objectionable super-carbonation of the beer. The beer distributed in this manner keeps in an excellent sound condition and brilliant. For light beers of the lager type the method answers very satisfactorily. Syphons equivalent to half a dozen or a dozen bottles of beer are supplied. Care is taken to sterilise the parts of the syphon before filling it. This method of distributing beer seems to us to mark a distinct advance, both from a point of view of hygiene and of convenience.

A "MILK RECORD SCHEME."

A FREQUENT correspondent writes:—"Although Mr. Burns's Milk Bill was not successful in passing through all its stages in Parliament and was ultimately withdrawn, it will not be at all surprising to hear that the agitation for a purer milk-supply is having some effect. There is no doubt that the introduction of the Bill did do an immense amount of good, if only in calling the attention of dairy farmers to the great importance of what, after all, is elementary cleanliness, and, further, the great danger of milk from cows found to be tuberculous. But while there is no connexion between this agitation and a recent action of the East Sussex education committee, it is very noteworthy that this go-ahead body has just approved a 'milk record scheme,' the object of which will be to encourage and assist breeders and owners of dairy cattle to keep records of the milk yield of their cows. It is proposed that a student of the Uckfield Agricultural College, which is controlled by the East Sussex county council, should be appointed to take charge of the work, visit farms, and carry out the necessary weighing and testing. Twelve herds are allowed for by the scheme to be tested once a fortnight. It is further proposed to provide a biological laboratory and a private study for the students at the College. Nothing but good could possibly result from such a scheme, but it remains to be seen how it will be received by the farmers' clubs. It would seem that a weak point is that the work should be carried out by a pupil at the college. However, the progress of the scheme will be watched with a deal of interest."

THE BIRTHPLACE OF GOLDSMITH.

To the Editor of THE LANCET.

SIR,—The very interesting annotation in your issue of Dec. 18th, 1909, which summarised Sir James Crichton-Browne's address to the Society of Authors upon Oliver Goldsmith, brought forcibly to my mind the fact—as it has always occurred to his Celtic admirers in Ireland at least—that "poor Goldie," if unlucky in his pilgrimage of life, as he would seem to have been from the point of view of the materialist and of the hero of the muck-rake, was fortunate, even to a very exceptional degree, in the original distribution of spiritual gifts, and for the acquisition of friendships of ideal desirability in spheres illuminated by stars of phenomenal brilliancy. And although the final summons was abrupt and untimely to a degree which has ever been lamented by posterity, it must always be admitted that he was favoured by fate in leaving his gruffly benevolent and philosophic friend and patron to write an epitaph which has rarely, if ever, been paralleled in its dignity of diction and, more wonderful by far, in the graceful verity of its delineation of character, gifts, attainments, and achievements. And it may well be added at the present time, having regard to recent circumstances, that he has once more been correspondingly fortunate in having his person and his qualities delineated, and his name and fame vindicated, by a medical brother of sympathies so wide and literary attainments so comprehensive as those of Sir James Crichton-Browne. The excellence of the address referred to has combined with the record of the recent bi-centenary celebration of the memory of Samuel Johnson to bring into interesting prominence that of the life-record of the most distinguished recruit which Ireland has hitherto contributed to the ranks of our profession. Few Irish medical men, indeed, so far as I have had an opportunity of observing, ever discuss the works or the personal qualities of either Goldsmith or Johnson without introducing the name of the other. On this account the present seems to me to be a doubly favourable opportunity for calling the attention of readers of THE LANCET for a moment to the question of the localisation of the birthplace of Goldsmith, which though for a long time a good deal debated, seems to have for a considerable period been settled to the apparent satisfaction of all, or nearly all, English readers. It is now nearly a couple of decades ago, when spending some weeks of holiday retirement in the Co. Roscommon, that I learned, for the first time and with considerable surprise, that the unbroken tradition of the neighbourhood of Drumsna (that of the home of the Considine family) testified that Oliver Goldsmith first saw the light there, at the home of his maternal grandmother. The probability was, of course, powerfully corroborated for me by recollection of the fact that it was a well-known Irish custom—specially respected in that part of the country—that a young married woman should repair to her mother's residence for her lying-in. Not long afterwards I published this item of information in a medical comtemporary—without eliciting any special notice. Accordingly I was much gratified when, a few years later, Dr. Michael F. Cox (of St. Vincent's Hospital, Dublin) published in the *National Literary Journal* a paper dealing with the disputed data regarding the birthplace of the author of the "Vicar of Wakefield," with the thoroughness and precision which characterised all his literary as well as scientific communications. And I was further pleased on finding that in the delightful volume which was afterwards published by the Catholic Dean of Athlone, the Very Rev. J. J. Kelly, bearing the title of "The Haunts of Goldsmith," the author offered the most satisfactory evidence that his hero really was by birth a fellow-countryman of the humble writer of the present communication.

I am, Sir, yours faithfully,

Dublin, Jan. 11th, 1910. JOHN KNOTT, M.D. Dub.

PUBLIC INSTRUCTION ON MILK.

A COURSE of six lectures on milk, intended for those in the milk trade, will be delivered by Dr. A. Harden, F.R.S. (of the Lister Institute), at the South-Western Polytechnic Institute, Manresa-road, Chelsea, S.W., on Thursday evenings, at 7.30 o'clock, commencing Feb. 3rd. The course will be followed by practical work. The syllabus of the lectures shows that the subject will be dealt with under these heads:—The Chief Properties of Milk; Bacteria in Milk; Changes Produced in Milk by Bacteria; Spread of Disease by Milk; Preventive Measures. The classes in practical work, which will be held immediately after the lectures, will include simple methods of ascertaining the composition of milk and the detection of impurities and preservatives in milk. As the fee for the course is only the nominal one of 2*s.* 6*d.* we can conceive that considerable practical good may arise out of it, but the lecturer will have some trouble in talking down to his audience, while if this is not done his trouble may be wasted.

THE RESPONSIBILITIES OF OFFICE.

ACCORDING to a recent speech by Mr. Churchill in Dundee Mr. Herbert Gladstone has submitted personally to a nasal feed of egg and milk and was able to converse during the whole of the operation. Truly the modern statesman must be a man of many parts.

AN ALLEGED ELECTRIC THERAPEUTIST SENT TO PRISON.

Wilson Rae, a man described as an electric therapeutist, and carrying on business under the title "The Rae Electric Light Institute" at an address in Bond-street, was convicted recently at the Old Bailey of obtaining jewellery from a tradesman at Upton Park by false pretences. He drove to the shop in a motor-car with a lady for whom the rings and other valuable articles, selected by him, were said to be destined, but a cheque for £188 which he gave in payment was dishonoured, and some of the rings were discovered to have been pawned. Rae was also found guilty of bigamy on another indictment, his victim being a young woman connected with the music hall stage, with whom he went through the form of marriage in last November at the Staines registry office. He was sentenced to 15 months and three months respectively for these two offences. We do not profess to know the nature of the *clientèle* which Wilson Rae entertained at the "Rae Electric Light Institute," but we hope that some of those who may feel tempted to have recourse to similar speciously named agencies professing to supply treatment of a medical character will note his case. They will do well to consult their medical advisers before indulging in electricity, baths, and massage advertised for curative purposes by unscrupulous persons.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

Monday.

Odontological Section (Hon. Secretaries—D. P. Gabell, E. B. Dowsett, J. Howard Mummery): at 8 p.m.

Papers:

(Adjourned from November meeting.) Dr. Eyre and Mr. J. Lewin Payne: Some Observations on the Bacteriology of Pyorrhœa Alveolaris and the Results of Treatment by Bacterial Vaccines. Mr. Payne will give his Supplementary Remarks.

Mr. Kenneth Goadby: The Vaccine Treatment of Early Cases of Pyorrhœa Alveolaris.

Tuesday.

Medical Section (Hon. Secretaries—A. M. Gossage, A. F. Voelcker): at 5.30 p.m.

Paper:

Dr. Llewellyn Phillips: The Treatment of Tetanus by the Intraspinal Injection of a Solution of Magnesium Sulphate (with cases).

Thursday.

Balneological and Climatological Section (Hon. Secretaries—Septimus Sunderlaud, F. A. de T. Mouillot): at 5.30 p.m.

Paper:

Dr. Ackerley: Saline Waters and the Use and Abuse of Common Salt.

Neurological Section (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 8.30 p.m.

Discussion:

On Syphilitic and Metasyphilitic Diseases of the Nervous System (opened by Dr. Frederick Mott, F.R.S.). Dr. Henry Head, F.R.S., will continue the Discussion.

Friday.

Section for the Study of Disease in Children (Hon. Secretaries—E. I. Spriggs, J. P. Lockhart Mummery, J. T. Leon): at 4.30 p.m.

Cases:

Dr. Frew (for Dr. F. E. Batten): Meningococcal Meningitis treated by Meningococcal Serum (Lister) with Rapid Improvement.

Mr. Sydney Stephenson and Dr. Eric Pritchard: Basedow's Disease in a Lad of 9 Years.

Dr. F. Parkes Weber; Splenomegalic Anæmia, with Hydrocephalus, improved by Anti-syphilitic Treatment.

Dr. O. K. Williamson; Spastic Diplegia.

Mr. Douglas Drew: Separation of Lower Epiphysis of Femur with Displacement Forward on to the Shaft.

Mr. J. M. G. Swainson: A Child from whom a Strangulated Ovarian Cyst was Removed.

Dr. Vincent Dickinson: Enlarged Spleen.

Mr. Bishop Harman: (1) Abnormal Congenital Pigmentation of One Eye; (2) Two Cases of Familial Discoid or Coppock Cataract.

Specimens:

Dr. H. D. Rolleston and Dr. A. C. D. Firth: Hemiatrophy of Brain in an Infant.

Dr. J. D. Rolleston: Diphtheria of the Fauces and Ano-genital Region in an Infant.

Dr. Forsyth: Specimen from a Case of Congenital Œdema with Dilatation of the Abdominal Lymphatics.

Dr. E. I. Spriggs and Dr. H. F. L. Hugo: X Ray Photographs from a Case of Constipation.

Dr. A. C. D. Firth: Prolapse of Intestine through Ectopia Vesicæ.

Papers:

Dr. A. E. Russell: A Case of Cyclic Vomiting in a Child associated with Hypertrophic Stenosis of the Pylorus.

Dr. Donald Carter: Infant feeding.

Epidemiological Section (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 p.m.

Paper:

Dr. F. Graham Crookshank: The Control of Scarlet Fever.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

Monday.—8 p.m., Clinical Evening. Cases will be exhibited by Dr. P. Weber, Dr. Dorner, Dr. F. J. Poynton, Mr. A. E. Barker, Mr. Openshaw, Mr. W. Evans, Mr. W. Low, Dr. Guthrie, Mr. A. Edmunds, and others.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

Wednesday.—8.30 p.m., Clinical and Pathological Evening.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

Thursday.—8.30 p.m., Clinical Evening.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

Thursday.—8 p.m., Card Exhibits by Mr. M. L. Hepburn, Mr. N. Bishop Harman, Mr. C. Blair, Mr. W. Ormond, Mr. J. H. Tomlinson, and others. 8.30 p.m., Dr. F. E. Batten: Note on a Case of Bilateral Ophthalmoplegia Externa in an Infant.—Mr. M. S. Mayou: Congenital Anterior Synechiæ with Buphthalmos nterior staphyloma).—Mr. M. L. Hepburn: Xerosis of the Conjunctivæ and Night Blindness. 10 p.m., Council Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. T. C. Fox: Clinique (Skin). 5.15 p.m., Lecture:—Dr. T. Hyslop: The Examination of Insane Criminals.

Tuesday.—4 p.m., Dr. A. Morison: Clinique (Medical). 5.15 p.m., Lecture:—Mr. E. M. Corner: The Treatment of Septic Conditions.

Wednesday.—4 p.m., Mr. T. H. Openshaw: Clinique (Surgical). 5.15 p.m., Lecture—Dr. R. A. Gibbons: On Dysmenorrhœa.

Thursday.—4 p.m., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 p.m., Lecture:—Dr. J. Taylor: Eye Symptoms and Signs in Nervous Diseases.

Friday.—4 p.m., Mr. R. E. Bickerton: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. X Rays. 5 p.m., Lecture:—Mr. Baldwin: Practical Surgery.

Tuesday.—10 a.m., Dr. Moullin: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Pritchard: Clinical Medicine.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. Mr. B. Harman: Diseases of the Eyes. 2.30 p.m., Operations. X Rays. Dr. Robinson: Diseases of Women. 5 p.m., Lecture:—Mr. Beddard: Medicine.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. X Rays. 5 p.m., Dr. Cole. Adolescent Insanity.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Morton: X Ray Examination of the Digestive System.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 p.m., Medical and Surgical Clinics. 2.30 p.m., Operations. X Rays.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Evans), 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).

Wednesday.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. H. Pirie). 4.30 p.m., Lecture-Demonstration:—Dr. A. H. Pirie: The Removal of Superfluous Hairs by Electrical Methods.

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel). 4.30 p.m., Lecture:—Dr. T. R. Whipham: Idiocy and Allied Disorders in Children. (Second Lecture.)

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Tuesday.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 3.15 p.m., Special Lecture:—Mr. Carless: Some Cases of Sarcoma of the Femur.

Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Friday.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 2.15 p.m., Dr. Rose Bradford: Pyleo-nephritis.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

Monday.—3 p.m., Clinical Demonstration: Dr. H. Campbell.

Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie.

Wednesday.—3 p.m., Clinical Demonstration:—Dr. F. Palmer.

Friday.—2 p.m., Clinical Demonstration:—Dr. P. Stewart. 5.30 p.m. Clinical Demonstration: Dr. E. Macnamara.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Tuesday.—3.30 p.m., Clinical Lecture: Dr. H. Tooth: Paraplegia.

Friday.—3.30 p.m., Clinical Lecture;—Dr. H. Tooth: Gait as a Means of Diagnosis.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. W. S. Colman: Demonstration of Selected Cases in the Medical Wards.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Seborrhœa and Psoriasis dealt with as Stages of the same Dermatitis in Symptoms, Diagnosis, and Treatment.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 19th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 13	30·15	N.W.	...	59	50	33	33	34	Fine
,, 14	30· 0	S.W.	0·01	64	54	34	49	50	Overcast
,, 15	30·25	W.	...	51	48	45	46	45	Cloudy
,, 16	29·94	S.W.	0 03	56	53	45	50	52	Cloudy
,, 17	29·72	S.W.	0·11	65	46	43	41	43	Cloudy
,, 18	29 48	W.	0 09	54	49	41	42	44	Cloudy
,, 19	29·44	WNW	0·02	58	46	41	39	41	Fine

Communications, Letters, &c., have been received from—

A.—Mr. F. W. Alexander, Lond.; Ardath Tobacco Co., Lond.; Mr. Oliver Atkey, Dongola; Accelerated Conversion Syndicate, Lond., Secretary of; Anglo-American Pharmaceutical Co., Croydon.

B.—Mrs. Stanley Berkeley, Lond.; Bootle Borough Hospital, Secretary of; Dr. C. Borg, Valetta; Mr. C. E. Beavis, Bristol; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. A. Blair, Newport, Monmouthshire; Mr. G. Burnside Buchanan, Glasgow; Messrs. Blundell and Rigby, Lond.; Mr. G. M. P. Braine-Hartnell, Powick; British White Cross Milk Co., Lond.; Dr. R. H. Barnes, St. Louis; Mr. Geoffrey Bate, Hove; Mr. F. F. Burghard, Lond.; Dr. Karl Bremer, Lond.; Dr. Uriel S. Boone, St Louis; Mr. Arthur Buck, Brighton; Dr. L. A. Bidwell, Lond.; Mr. G. Granville Bantock, Pinner; Mr. A. A. Bradburne, Southport; Bristol Royal Infirmary, Secretary of.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Dr. D. Crowly, Loughrea; Chesterfield and North Derbyshire Hospital, Secretary of; Charities Publication Committee, New York, Business Manager of; Dr. C. Willett Cunnington, Lond.; Mr. T. Carwardine, Clifton; XXXIX Congress der Deutschen Gesellschaft für Chirurgie, Berlin; Mr. H. A. Collins, Lond.; Messrs. E. Cooke and Co, Lond.; Captain W. V. Coppinger, I.M.S., Lond.; Dr. J. A. Chase, Pawtucket; Messrs. J. and A. Churchill, Lond.; Messrs. Catesby and Sons, Lond.; Dr. P. J. Cammidge, Lond.; Dr. F. Charlesworth, Boscombe.

D.—Messrs. Dawson and Sons, Lond.

E.—Dr. K. Eckenstein, Bordeaux; Dr. J. E. English, Neyland; Evian-Cachat, London Agent of; Messrs. Eason and Son, Dublin.

F.—Mr. H. A. T. Fairbank, Lond.; Messrs. Fannin and Co., Dublin; Right Hon. Robert Farquharson, Aboyne.

G.—Mr. S. S. Grimley, Lond.; Dr. S. R. Gloyne, Lond.; Messrs. R. W. Greeff and Co., Lond.; Mr. E. S. Gunn, Croydon; Miss Goffe, Lond.

H.—Dr. J. B. Hellier, Leeds; Messrs. Hirschfeld Bros., Lond.; Messrs. C. J. Hewlett and Son, Lond.; Mr. L. Heuberg, Lond.; Mr. Somerville Hastings, Lond.; Hoffmann La Roche Chemical Works, Lond.; Messrs. T. H. Hewitt, Lond.; Dr. George Herschell, Lond.; Mr. Arthur Harries, Lond.

I.—India Rubber, Gutta Percha, and Telegraph Works Co., Lond.

J.—Mr. T. G. Johnson, Lond.; J. W. L.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. H. S. King and Co., Lond.; Dr. W. Klinkhardt, Leipzig; Messrs. Koidzumi and Co., Kyoto; Dr. J. N. Kilner, Adra; Messrs. J. G. King and Son, Lond.; Kent and Canterbury Hospital, Secretary of; Messrs. Kutnow and Co., Lond.

L.—Mr. H. K. Lewis, Lond.; Messrs. Lee and Nightingale, Liverpool; Mr H. L. Lewis, Lond.; Messrs. Lea and Febiger, Philadelphia; London News Agency; Leicester Frith, Hon. Secretary of; Local Government Board, Lond., Secretary of; Leeds Infectious Diseases Hospitals, Medical Superintendent of; Leeds Tuberculosis Association, Secretary of; London Pure Milk Association, Secretary of.

M.—Miss L. Michód, Emsworth; Dr. G. H. C. Mold, Birmingham; Messrs. Moore and Co., Lond.; Messrs. May, Roberts, and Co., Lond.; *Midland Counties Herald*, Birmingham Manager of; Metropolitan Temperance Association, Superintendent of; Mansfield Corporation, Clerk to the; Dr. A. G. Macdonald, Edinburgh; Dr. B. M. Mules, Kenton; Maltine Manufacturing Co., Lond.; Manchester Medical Agency, Secretary of; Manchester Northern Hospital for Women and Children, Secretary of; Mr. W. Martindale, Lond.; Dr. Léon MacAuliffe, Paris; Captain W. E. McKechnie, I.M.S., Lond.; Mr. G. H. Makins, Lond.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; Mr. W. Gifford Nash; National League for Physical Education and Improvement, Lond.

O.—Ophthalmological Society of the United Kingdom, Lond., Hon. Secretary of; Sir Thomas Oliver, Newcastle-on-Tyne; Messrs. Osborne, Peacock Co., Manchester; Dr. James Oliver, Lond.

P.—Messrs. Peacock and Hadley, Lond.; Messrs. Parkers, Caistor; Dr. D. Wells Patterson, Newcastle-on-Tyne; Dr. Geo. Steele Perkins, Lond.; Dr. F. J. Poynton, Lond.; Mr. F. T. Pain, Lond.; Messrs. Parkin, Ness, and Co., Darlington; Mr. F C. Pridham, Croydon.

R.—Royal Institute of Public Health, Lond., Secretary of; Royal Blind Pension Society, Lond., Secretary of; Radcliffe Infirmary, Oxford, Secretary of; Messrs. G. Robertson & Co., Lond.; Dr. C. Riviere, Lond.; Registered Nurses' Society, Lond., Secretary of; Messrs. Rebman, Lond.; Messrs. Roberts and Co., Lond.; Royal Sanitary Institute, Lond., Secretary of; Dr. Samuel Rideal, Lond.; Royal Albert Hospital, Devonport, Secretary of.

S.—Mr. C. F. Scripps, Lond.; Scholastic, Clerical, &c., Association, Lond.; Stockport Infirmary, Secretary of; Mr. C. Smith, Christiania; Miss Stenhouse, Folkestone; Sunderland Infirmary, Secretary of; Messrs. Salt and Son, Birmingham; Messrs. Sphagnoletti, Lond.; Messrs. Stevens, Buer, and Co., Lond.; Dr. Edward Stierlin, Basel; Sleeping Sickness Bureau, Lond.; Dr. W. L. Stuart, Camberley; Mr. W Sinclair Stevenson, Lond.; Mr. K. Schall, Lond.; Messrs. G. Street and Co., Lond.; *South Wales Argus*, Newport, Manager of; Dr. C. Sanders, Lond.; Mr. J. Stower, Lond.; Dr. Scanes Spicer, Lond.; Society of Medical Officers of Health, Lond.; St. John's Hospital, Lond., Secretary of; Mr. Percy Sargent, Lond.; Messrs. Southall Bros. and Barclay, Lond.

U.—University of Liverpool, Dean of; Mr. H. Urquhart, Lond.

W.—Mr. Thomas Walsh, Galway; Dr. R. Prosser White, Wigan; Mr. C. Hamilton Whiteford, Plymouth; Messrs. Wills, Lond.; Messrs. Wait and Co., Leicester; Wolverhampton and Midland Counties Eye Infirmary, Assistant Secretary of; West London Medico-Chirurgical Society, Hon. Secretary of; Messrs. H. Whiteway and Co., Whimple; Dr. A. A. Warden, Paris; Mr. A. P. Walters, Island of Eigg.

Z.—Dr. Simon Zaimowsky, Moscow.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. E. Arnold, Lond.; A. W. N.

B.—Mr. G. W. Brabyn, Lond.; Mr. J. H. Booth, Chesterfield; Dr. G. W. Badgerow, Lond.; Dr. F. C. Brodie, Ollerton; Mr. E. Blatchley, Lond.; Mr. H. Barwell, Lond.; Messrs. Boyveau and Chevillet, Paris; Mr. C. Boulange, Paris; Bhavnagar State, India, Chief Medical Officer of; Dr. J. W. Bone, Luton; Dr. E. C. Bridges, Lond.; Mr. F. B. Judge Baldwin, Banbury; Bradford Guardians, Clerk to the; Dr. J. Wilson Black, Inverness; Belfast District Lunatic Asylum, Medical Superintendent of; Mr. C. Birchall, Liverpool.

C.—Dr. F. Charlesworth, Lond.; Cancer Research Laboratory, Liverpool, Director of; C. E. G.; Dr. E. H. Colbeck, Lond.; Miss B. Coxon, Alnwick; C. P. O. C.; Messrs. Cowie and Co., Lond.; Miss E. Cuvillier, St. Columb; Dr. R. Cook, Leiston; Mr. J. Chichons, Gibraltar; Dr. W. F. Croll, Aberdeen; Mr. J. H. Corsane, Newport, Fifeshire.

D.—Denver Chemical Manufacturing Co., Lond.; Mr. T. Dixon, Lond.; Derbyshire Royal Infirmary, Derby, Secretary of; Mr. J. E. Drake, Llansamlet; Dr. W. T. Dougal, Pittenweem; D. D. B.; Dr. R. Davy, Bow; Dr. J. H. Davies, Port Talbot; Mr. E. W. Dewey, Portsmouth; Mr. E. Deanesly, Wolverhampton.

E.—Dr. F. H. Ellis, Southampton.

F.—Mr. H. W. Furnivall, Woodbury; Dr. W. R. Fenton, Bath; F. S.

G.—Messrs. Getting and Son, Lond.; Dr. R. Martin Gil, Malaga; Mr. B. C. Ghosh, Midnapur; Dr. Stanley Gill, Formby; Great Yarmouth Corporation, Accountant to the; Dr. D. Glen, Glasgow.

H.—Dr. W. Hutchinson, Widnes; Dr. G. F. Hulme, Felixstowe; Mr. J. Hoole, Parwich; Dr. G. S. Hatton, Newcastle-under-Lyme; Dr. E. B. Holloway, Lond.; Mr. F. Hargreaves, Manchester; Mr. C. H. Huish, Lond.; Messrs. Abel Heywood and Son, Manchester.

I.—International News Co., Lond.

J.—Dr. L. Jones, Lond.; J. H.

K.—Mr. T. Kelly, Tipperary; Dr. W. Kirkpatrick, Stowbridge; Mr. M. J. Kelly, Limerick.

L.—Major G. Lamb, I.M.S., Edinburgh; Leeds Trained Nurses' Institute, Superintendent of; Loughborough and District General Hospital, Secretary of; Dr. R. J. Ledlie, Hoyland; Dr. R. Lozano, Zaragoza; L. S.; Dr. J. T. Leon, Southsea; Mr. A. Lupton, Gosport; Dr. C. W. L. Luethgen, Erpel; Mr. E. Lakovski, Lond.

M.—Dr. J. Mathie, Glasgow; M. H.; Dr. C. Mayer, Lond.; Dr. J. McGregor, Bridgend; Messrs. McDougall Bros., Manchester; Medical Times Publishing Co., Lond., Manager of; Dr. C. R. P. Mitchell, Malvern; Dr. H. L. McKisack, Belfast; Mr. W. T. Mills, Rhode; Mr. D. Mann, Leeds; Mr. J. Murray, Lond.; Mr. E. Merck, Lond.; Mr. J. F. Mackenzie, Edinburgh; Dr. T. Mituleseu, Bucharest; Mr. H. H. Mitchell, Cheltenham; Mr. R. H. Measures, Lond.; Mr. E. Meadows, Otley.

N.—Dr. D. G. Newton, Sheffield; Mr. W. T. Nichol, Hawick.

O.—Dr. J. F. O'Brien, Ballincollig.

P.—Mr. P. Phillips, Davos Platz; Messrs. G. P. Putnam's Sons, Lond.; Mr. J. J. Phelan, Llansamlet.

R.—Mr. C. Ryall, Lond.; Royal Society of Medicine, Lond., Secretary of; Mr. J. P. Ryan, Lond.; R. W.; Dr. J. Robertson, Port Patrick.

S.—Dr. A. Wood Smith, Harrogate; Messrs. Spiers and Pond, Lond.; Surgeon, Wood Green; Mr. D. Stewart, Glasgow; Surgeon, Llansamlet; Surgeon, Ferndale; S. P. Charges Co., St. Helens; Messrs. Stenhouse and Son, Folkestone; Senhor J. J. Martino da Silva, Oporto; St. George's Hospital Medical School, Lond., Dean of; Sister, Bexhill-on-Sea; Messrs. Swetz and Zeitlinger, Amsterdam; Mr. E. P. Staples, Strood; Scarborough Hospital, Secretary of; Mr. J. E. Scales, Mold.

T.—Dr. H. B. Tawse, Nottingham; Mr. L. Tattersall, Accrington; Dr. W. H. Tomlinson, Blackburn; Dr. D. M. Taylor, Halifax; Taunton and Somerset Hospital, House Surgeon of; T. W. P.

V.—Miss G. M. Vickridge, Worthing; Dr. F. Vaz, Oporto.

W.—Mr. M. Williams, Trefriw; Mr. V. Whitgreave, Penzance; Mr. W. F. A. Walker, Dinas Mawddwy; West Bromwich District Hospital, Secretary of; Mr. H. Walker, Leeds; W. D.; Messrs. Widenmann, Broicher, and Co., Lond.; Wolverhampton, &c., General Hospital, Secretary of; West Herts Hospital, Hemel Hempstead, Secretary of.

EVERY FRIDAY. PRICE SIXPENCE.

THE LANCET.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*	
One Year	£1 1 0
Six Months	0 12 6
Three Months	0 6 6

TO THE COLONIES AND ABROAD.	
One Year	£1 5 0
Six Months	0 14 0
Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ...
Official and General Announcements
Trade and Miscellaneous Advertisements and Situations Vacant ...
} Five Lines and under £0 4 0
} Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*
Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*
Special terms for Position Pages.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

An Address

ON

CHRONIC MASTITIS AND ITS RELATION TO CARCINOMA.

Delivered before the North London Medico-Chirurgical Society on Jan. 13th, 1910,

BY CHARLES BARRETT LOCKWOOD,
F.R.C.S. ENG.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, LONDON.

MR. PRESIDENT AND GENTLEMEN,—Chronic mastitis is often mistaken for cancer. This error usually leads to delay. As everyone is now aware, from the smallest growth in the breast cancer spreads into the lymphatic system with great rapidity. When once established in the lymphatic system the cure by operation, or any other means, is uncertain.

The information which I have collected will be taken in inverted order. First, the pathology of chronic mastitis; secondly, the clinical characters; and thirdly, the relation of chronic mastitis to cancer of the breast. Concerning each of these much remains to be learnt. Unfortunately I have not had the leisure to read what others have written. But although we may not have clear and scientific evidence on all of these three points, nevertheless we have a simple and scientific method of diagnosis leading to a rational method of treatment.

In the beginning let us try to be clear as to the meaning of terms. I cannot help thinking that the term "chronic mastitis" is apt to mislead. Anyone might infer from it that there was but one kind of chronic inflammation of the mammary glands. They might even go further and assume that that had only one cause. But I strongly suspect that there are several kinds of chronic inflammation of the breast and that they owe their origin to several causes. Eschew the dead language and translate chronic mastitis into English. Then we should speak of chronic inflammation of the breast. But that would not be correct, because we ought to say chronic inflammations of the breast. The term would convey still more to the mind if we qualified it and spoke of chronic non-suppurative inflammations of the breast. These forms of inflammation seldom or never end in suppuration. If pus appeared the disease would probably be tuberculous.

One of the most obvious effects of the various forms of chronic mastitis is to cause a tumour or tumours in the breast; at times the whole of the mammary gland is affected and its hard circular outline can be felt beneath the skin. The hardness is seldom uniform. Amongst the hard breast tissues harder nodules can sometimes be felt, and may be tense cysts. When a mammary tumour of this kind is cut into, the section is almost that of a normal gland, but is tougher, and some fluid usually jets out of the cysts; clinically this variety is the least misleading. Both breasts are usually diseased, but the clinical diagnosis is not to be trusted. For example:—

A patient of somewhat mature years was diagnosed two years before I saw her to be suffering from chronic mastitis. There was retraction of the left nipple, and beneath the areola there was a hard swelling. The surrounding mammary gland felt knotted and likewise the right mammary gland. When the hard swelling beneath the nipple was cut into, the naked eye confirmed the diagnosis of chronic mastitis, but when sections were made by Mr. Ernest Shaw we found that the lump was mainly chronic mastitis, but it had in it commencing carcinoma, so that a complete operation was done. It is reasonable to think that if the clinical diagnosis had been trusted that patient would afterwards have had extensive carcinoma of the breast.

Here is an example of the converse:—

A patient had a tumour in both breasts, and both breasts were rather hard. The left breast had been diagnosed as being cancerous, and it is said that the diagnostician gave the patient but a short span of life. However, when the left breast was cut into, the tumour contained small cysts full of a fluid rather like cream, and the sections proved to be ordinary chronic mastitis. Of course, the error of diagnosis was speedily and easily corrected by that exploration and a microscopical section.

Sometimes the chronic mastitis is confined to a lobe of the mammary gland, then the characteristic pyramidal shape can be felt, with the apex ending in a thickened duct which runs to the nipple. Here the clinical diagnosis seems clear enough. But before I conclude it will be seen that chronic inflammation of the mammary gland is often associated with carcinoma. Once when an inflamed lobe was excised it was found to be an inflamed and cystic adenoma. One of these lobular tumours, which was rather tender and exceedingly difficult to define, afterwards proved to be merely inflamed, although clinically we had a very strong suspicion that it was carcinoma. Often chronic mastitis causes a single hard tumour in the breast. Those who have faith in their powers of diagnosis are prepared to say whether this tumour is cystic or solid, but how can anyone tell in a case like this. A patient, somewhere about 50 years of age, with a very large breast, had a tumour which I think anybody would have guessed to be carcinoma. However, when that was cut into we found in its interior a cyst of considerable size. This cyst had been masked by the surrounding mastitis. It might be supposed that a cyst of large size would fluctuate. For years I have taken the greatest pains to feel these hard tumours of the breast with a view to ascertaining if they fluctuate, but as a rule the cyst in a case of chronic mastitis is surrounded by so much inflammation that it does not fluctuate. I could give numerous instances in which that was so. Here is another:—

A stout woman had in the breast a tumour which had all the clinical characters of a solid growth. Of course, it was very strongly suspected that this was a carcinoma; however, when it was cut into, the sections were those of chronic mastitis, and in the centre of it was a small cyst. I see that the note says that the mammary ducts were dilated, and contained a fluid like cream.

The tumour which chronic mastitis causes has, like most cancers, no capsule. But when tumours of the breast are in question much reliance cannot be placed upon the presence of a capsule, although a tumour which has a capsule is usually innocent. Here is a case of a carcinoma which had a fibrous capsule:—

A tumour of the left breast was cut into and microscopically examined and found to be a carcinoma. I see Mr. Shaw's report of the macroscopic characters of this tumour says, "A firm rounded mass of malignant growth 1½ inches in diameter; greyish-white in colour, and surrounded by an ill-marked capsule of fibrous tissue."

I can recall another instance in which there was not an "ill-marked capsule" but a very well-marked one full of cancer. So that it must not be inferred because a tumour of the breast has a capsule that therefore it is innocent.

On the whole, the presence of a cyst in the midst of a mammary tumour is a favourable sign. Cysts are found in innocent types of disease such as chronic mastitis and in cystic adenoma, but the presence of a cyst is not a reliable sign. In chronic mastitis the cyst is often a dilated duct and may contain a papilloma, and that may be either innocent or malignant. An innocent papilloma need not give rise to apprehension. A patient with chronic mastitis with cysts had in one of them a papilloma with a long thin stalk, and when sections were cut through the attachment of the papilloma to the cyst there was no trace of infiltration. That was innocent. But in other instances the base of the papilloma was obviously carcinomatous and spreading beyond the cyst into the surrounding breast.

Great attention should be given to the epithelium of the cyst walls. At times it is beginning to run wild and enter the lymphatic spaces, suggesting commencing carcinoma. For instance, a patient with chronic mastitis had cysts, and it was found at the histological examination that the epithelium of the cysts was beginning to infiltrate the tissues. It is not unusual in chronic mastitis to see the epithelium beginning to run wild and enter the lymphatic paths. There is no proof, but only a strong suspicion that in cases such as that carcinoma may have been beginning. Here is another instance:—

A woman had had a tumour removed from the right breast some seven years before. Another tumour appeared almost beneath the scar. This felt exceedingly hard and solid, and over it the skin was a little dimpled, of course suggesting that the lump might be a carcinoma. However, it proved to be chronically inflamed breast tissue with rather a large cyst in the centre of it. Here, again, the epithelial lining of the cyst had begun to run wild and spread into the lymphatic spaces of the breast, so that one could not help thinking that she, too, was threatened with carcinoma. This may be a wrong surmise, but I cannot help thinking that anybody who has seen many sections of carcinoma of the tongue or of the breast, and seen in them the same kind of epithelial infiltration, would be equally suspicious.

Another case of chronic mastitis with cysts proves that one should not be content with the examination of only one of the cysts:—

A woman was operated upon and the chronically inflamed breast tumour was found to contain rather a large thin-walled cyst full of clear fluid, some of which could be squeezed from the nipple. The cyst contained a papilloma and some old clot. I next met with another smaller cyst of a similar kind. When this was microscopically examined its wall contained a growth of cancer, so that had not both cysts been looked at, I might have done an incomplete operation and left the patient with cancer in her breast and lymphatics.

When the tumour of chronic mastitis is solid the macroscopic appearances are quite fallacious, and cannot be trusted in the least. This is so with other inflammatory growths. For instance, I removed the testicle of a little boy, and when cut into the naked eye appearances suggested sarcoma. However, the microscopical examination proved that it was tuberculous.

I now come to another branch of my subject and refer to some of the clinical signs. But the clinical signs in cases of chronic mastitis are exceedingly fallacious.

A woman said that she had had a discharge from her nipple for some years; the nipple was retracted and had beneath it a hard irregular tumour, and there were also enlarged axillary glands. This tumour was incised, but my pathological colleague absolutely declined to give an opinion founded on the naked-eye evidence. A cyst was opened and then the microscopical examination disclosed chronic mastitis. In another instance both the clinical and macroscopic characters were very misleading. Basing my opinion on them I removed the whole breast. Whilst this was going on the histologist proceeded to make an examination. This was done because the tumour looked like scirrhus cancer in section, because the nipple was retracted, and the axillary glands were enlarged. I did not think it was necessary to wait and see the microscopical sections and was greatly surprised to be told that it was a case of chronic mastitis. Naturally I do not now place much reliance upon the clinical signs nor upon the naked-eye appearances. Whatever the section had looked like to the naked eye, anyone would have had his mind biased by those clinical signs. The converse may hold. In another instance the macroscopic section of the tumour was said to be chronic mastitis, but it proved to be a carcinoma.

Fortunately, the morbid histology of chronic mastitis is exceedingly clear and simple. Sections of it stain well and are quite easy to recognise. Within five minutes of the exploratory incision a definite diagnosis can be made. When such sections are seen they are the easiest sections of all to interpret. In the section there are seen the duct, the branches of the duct, ending in acini, and round this little lobule of breast is the halo of inflammatory cells, some of which may be developing into fibrous tissue. Great attention should be paid to the epithelium which lines the ducts. After what I have said you would be very suspicious if epithelium was not arranged as an orderly layer within its basement membrane. With reference to the clinical signs, most cases of chronic mastitis are rather tender to the touch and sometimes there is a moderate degree of pain. Here is an instance in which the pain was excessive and led us to suppose that the tumour in the left breast would prove to be a carcinoma, but the microscope showed that it was caused by chronic inflammation.

A discharge from the nipple, especially a sanious discharge, awakens a fear of cancer; but a sanious discharge may be met with when chronic mastitis has caused dilatation of the duct. As a rule, the discharge of blood from the nipple indicates that there is a papilloma in the cyst or ampulla, but not necessarily a malignant one. Here is a case in which a dilated duct contained a papilloma with a long, thin stalk and similar to the case which I have already mentioned. But, as I have said, it is never safe to assume that these intracystic papillomata are innocent until the microscopical sections have been carried through the junction of the papilloma with the wall of the cyst. This was so in this instance in which blood exuded from the nipple. The cyst was opened, and the pathologist who was present looked at it with the naked eye and said that it was a case of chronic mastitis. However, the microscope showed that we had to deal with a duct carcinoma. To my mind the expression "duct carcinoma" is rather misleading. Sometimes I suppose it means a carcinoma growing into a duct, but at other times it means a carcinoma in which the histological structure looks as if it was made of numerous ducts with cubical or columnar epithelium. I have observed that in one part of a carcinoma there may be the ordinary appearances, whilst in another part there is an arrangement which makes you think that it consists of closely packed, ill-arranged ducts.

The position of the tumour does not help in the diagnosis. The tumour caused by chronic mastitis is met with oftenest in the lobes of the breast, but I have mentioned a case in which the tumour was situated beneath the nipple and had in it a commencing carcinoma. In another case similar tumour beneath the right nipple proved to be carcinoma. I have mentioned a case of dimpling of the skin which was misleading, the dimpling being situated over an inflammatory tumour with a cyst in the centre. As a rule dimpling of the skin awakens a suspicion of cancer. I have also mentioned cases showing that retraction of the nipple occurs not only in carcinoma but also in chronic mastitis. The tumour in chronic mastitis does not slip about in the breast as an innocent adenoma does, but elsewhere[1] I have described a carcinoma which was wrongly diagnosed for an adenoma because of its mobility, and not long ago I met with another. A patient had a moveable tumour in the right breast with a slight dimpling of the skin over it; this tumour proved to be carcinoma.

The causation of chronic mastitis is, to my mind, most obscure, and I doubt whether it has yet been properly investigated. Tubercle has, of course, been suspected, and in the following instance none was found. A woman had chronic mastitis with cysts full of fluid which looked like cream, because it contained granules of fat and oil globules. Tubercle was industriously searched for but none could be found. Once cultures were taken from that creamy fluid but with negative results.

In the following case there is some evidence that an infection may have passed along the dilated ducts and caused chronic mastitis. The patient had had for a very long period inflammation of the left nipple. When seen it was covered with a crust, which easily came off. Beneath the nipple was a hard lump and there was another in the outer segment of the breast. Both were found to be chronic mastitis. I suspect that in that particular instance the infection passed along the ducts and caused the chronic mastitis. I am quite aware that I may be straining your imaginations a little to ask you to believe that the hard lump in the outer segment had arisen in the same way.

I have also some reason to suppose that the infection in chronic mastitis may be carried by the blood stream.

A patient was diagnosed to have chronic septic inflammation of the gall-bladder with gall-stones. I was called in to operate upon the gall-bladder, but found hard tumours in both mammary glands. Clinically these were like carcinomata. Clearly it would not be right to put the patient to the risk and extreme discomfort of cholecystotomy if she was about to die from cancer of both her breasts. However, when an incision was made it was found that she had ordinary chronic mastitis; the gall-bladder was then cleared out and both breasts recovered.

On another occasion I operated upon a patient for hæmorrhoids, so she had for a time a septic wound. Whilst recovering from the operation a hard lump appeared in the right breast and for a time increased in size. It was a little tender, and the suspicion of a growth arose. It began, however, to diminish, so I have always thought that I there had to do with chronic mastitis, and that the breast might have got infected from the septic wound.

That chronic mastitis has some relation to cancer has already been seen in the case in which the cyst wall was cancerous. Here is an instance in which the centre of the inflammatory tumour had cancer in it.

---

[1] Clinical Lectures and Addresses in Surgery, C. B. Lockwood, p. 263

A woman had a hard tumour of the right mammary gland. This was removed and a portion of it was examined, and it proved to be chronic mastitis. However, the whole circumstances were so suspicious that the investigation was carried further. When the centre of the lump was examined it was found to contain a small nodule of carcinoma. Now in this instance I cannot help thinking that the chronic mastitis came first and had predisposed to the cancerous growth in its centre. If cancer were to cause chronic mastitis we should see a great deal of chronic mastitis in the vicinity of cancerous growths, but we do not. There may be a slight inflammation of the breast but there is not a condition which amounts to chronic mastitis.

The next is a case in which the right breast had been removed together with some lymphatic glands from the posterior triangle of the neck. In the following year the left breast had a tumour in it. When this was removed one side of the tumour consisted of a chronically inflamed mammary gland, but on the other side of it there was carcinoma. My note also says that no glands could be felt in the axilla, but unfortunately a great many were found after the axilla had been cleared out. This is not an unusual experience and detracts from diagnostic value which some attach to the presence or absence of lymphatic enlargement.

Now what is the relationship between chronic mastitis and carcinoma? In the tongue a long-continued chronic inflammation and ulceration is known to end in epithelioma. Everyone has seen epithelioma implanted upon a long-standing chronic ulcer of the leg. In the Cancer Research Reports[2] a graphic account is given of cancer in the inhabitants of Kashmir—here scorching of the skin of the abdomen by a hot brazier often ended in cancer, so that it is reasonable to infer that a long-continued inflammation of the mammary gland may end in its epithelium running wild and forming a cancer, as it does in the tongue and elsewhere.

In cases of chronic mastitis and also in cases of cancer there is often the history of an injury, and often that history is given truthfully. A blow causes some bruising, and the effects of a blood extravasation in the tissues are well known. After the blood has clotted it causes the neighbouring tissues (in this instance the mammary gland is the neighbouring tissue) to inflame, and if the inflammation does not subside then a chronic mastitis is established. After what has been said we cannot deny the possibility of cancer being implanted upon that chronic mastitis.

Cancer may be associated with a known form of infective inflammation—viz., tubercle. I have always been much puzzled to account for the following:—

The patient had a tumour of the right breast and it was known that she had some enlargement of the axillary lymphatic glands. The tumour in the breast was a carcinoma. The complete operation was performed, and a great many enlarged glands were found along the axillary vein. I took rather a gloomy view of the future on account of the glands and was surprised to see that the enlarged lymphatic glands contained tubercle and not carcinoma. I have not been able to guess how these diseases came to be associated.

I do not intend to enter upon the surgical treatment of chronic mastitis, but merely say that it is to my mind clear and simple. First, an anæsthetic; secondly, an exploratory incision; and thirdly, an immediate microscopical examination. That will afford information upon which the next steps are based. If the sections proved to be sections of chronic mastitis I proceed to remove the chronically inflamed part of the breast with as little scarring as possible, and should it be necessary to remove a considerable portion of the mammary gland I always endeavour to leave the nipple. In one instance in which that was done the whole right gland was removed, but the nipple was left. Chronic mastitis was known to exist in the other breast, and afterwards the opposite breast required removal. I remember the patient remarked that she did not mind having that done provided I would leave the nipple. The other day a man who was a scavenger in the City came with carcinoma of the breast. He said he did not mind having the tumour removed provided we left the nipple. What was proceeding in that man's mind I cannot imagine, but even he attached importance to the preservation of the nipple and areola.

---

[2] Third Scientific Report, Imperial Cancer Research Fund, by E. F. Bashford, p. 19.

A Clinical Lecture

ON

TUBERCULAR DISEASES OF THE SKIN AND THEIR TREATMENT.

Delivered at the Medical Graduates' College and Polyclinic on Nov. 15th, 1909,

BY J. L. BUNCH, D.Sc., M.D. LOND.,
M.R.C.P. LOND.,

PHYSICIAN IN CHARGE OF THE SKIN DEPARTMENT, QUEEN'S HOSPITAL FOR CHILDREN, HACKNEY-ROAD, LONDON; MEMBRE CORRESPONDANT DE LA SOCIÉTÉ FRANÇAISE DE DERMATOLOGIE.

GENTLEMEN,—In speaking of tubercular diseases of the skin it is well at the outset to draw a distinction between those in which the tubercle bacillus is constantly found and which give positive inoculation results in susceptible animals such as the guinea-pig, and those which do not constantly fulfil these conditions. The lesions of the first group are undoubtedly caused by the tubercle bacillus of Koch; those of the second group, commonly known as tuberculides, are caused either by the soluble toxins of the tubercle bacillus or by attenuated tubercle bacilli which have been damaged or killed by phagocytes or other defending forces of the body before they reach the skin. To the first group belong lupus vulgaris, lupus verrucosus, gummatous, suppurative, and vegetating tuberculosis of the skin. The second group, or so-called tuberculides, is made up of lupus erythematosus, lichen scrofulosorum, acne cachecticorum, erythema induratum, folliclis, and acnitis. There are also some doubtful tuberculides, which might perhaps come under the heading of tubercular diseases of the skin, but I do not propose to include these in this paper. The best known and most important member of the first group is lupus vulgaris, and there are few skin diseases which are more troublesome and require greater judgment in the matter of treatment than lupus vulgaris. The insidious onset, steady advance, and chronic course of the disease are characteristic, while the disfigurement to which it gives rise and its frequent association with other forms of tuberculosis make it a disease to be reckoned with and dreaded. And inasmuch as it most frequently attacks the humbler and poorer classes of the community, the disease has in many cases obtained a firm hold before the patient seeks advice, and the greatest difficulty may consequently be experienced in preventing such disfigurement as will in the end prevent him earning his livelihood and providing for those dependent on him. Then, again, the disease is capable of assuming diverse forms, and even when untreated is liable to periods of betterment, followed by relapse, so that, even if the lesions are correctly diagnosed, the patient or patient's friends are apt to discontinue or neglect the necessary treatment, and the nodules multiply and the lesions extend, slowly it is true, but none the less surely. In a large proportion of cases there is a definite history of tuberculosis in the family, and the patient himself may have other manifestations of tuberculosis, but lupus does not seem to be hereditary and is not often found in two members of one family.

The lupus affection of the skin may be either primary or secondary. Primary lupus, or inoculation lupus, is chiefly found on the uncovered portions of the skin, and is brought about by the entrance of tubercle bacilli into the skin of an individual who, up to the time of inoculation, had been free from tuberculosis. Such an entrance of the tubercle bacilli has been so definitely shown in certain cases as almost to fulfil the conditions of an experiment. Thus a vaccination mark, a tattoo mark, or the wound made in piercing an ear for earrings has been infected with the saliva of a tuberculous individual, and lupus has followed in the scar. Single lupus nodules have in many cases developed on the face, arms, and ears in this manner. Again, lesions of the mucous membrane due to rhinitis or eczema of the nasal orifice have often served as the point of entry of the tubercle bacillus, with resulting lupus. Primary lupus again occurs from time to time in the form of lupus verrucosus or tuberculosis verrucosa cutis on the hands of post-mortem porters, butchers, cooks, kitchenmaids, and others whose work directly exposes them to infection. In these cases the tuberculous infection may remain strictly localised or may get into the lymph or blood stream and after a longer or shorter interval give rise to general tuberculosis.

Secondary lupus may either develop through the lymph stream or the blood stream or directly from an underlying tuberculous focus with or without a communicating sinus. When development takes place through the blood stream the foci may resemble an exanthem and be disseminated in the skin, numerous foci appearing simultaneously and developing synchronously.

That lupus vulgaris is really a cutaneous tuberculosis there can be no doubt. This is conclusively proved by the histological examination of the lesions and the demonstration of tubercle bacilli in them and the pure cultures of tubercle which can be obtained from them, as also by the inoculation of guinea-pigs with the tissue of lupus foci leading to the development of general tuberculosis in the inoculated animals. It usually begins in children or young people, often on the face, as small nodules in the deeper part of the corium. These are soft in consistence, of the ordinary granulomatous structure, and of a semi-translucent appearance. The nodules increase in number and size, coalesce to form a dull red patch which is raised above the level of the adjacent skin, has an infiltrated edge, and becomes scaly on the surface. The nodules and patches sooner or later break down and ulcerate, or they may undergo involution, absorption, and atrophy. When ulcers have formed they remain as such for months, then they show a tendency to heal with formation of fibrous or cicatricial tissue, in which further nodules may develop later, causing it to break down again. Extension proceeds by the appearance of fresh nodules at the margin, which in their turn undergo ulceration, until considerable areas have become involved. The ulceration may even extend quite deeply, leading to the destruction of the cartilages and consequent great deformity.

Lupus is most common on the face, and may involve the eyelids, leading to ectropion, and simultaneously attack the conjunctiva. The nose is generally involved secondarily to the nasal mucous membrane, and from the nose the lupus may spread more or less symmetrically into both cheeks, giving an appearance like lupus erythematosus, and either remaining superficial or taking on the form of lupus serpiginosus. The alæ nasi may become hypertrophied and the nasal orifice almost closed, while the nasal cartilage is frequently involved. The larynx, the gums, and the pharynx are attacked sometimes, and especially in the former case is the disease of serious import to the patient.

Epithelioma may supervene on lupus vulgaris, and one case has been recorded in which it made its appearance as early as the age of nine.

The differential diagnosis is sometimes difficult, especially from syphilis. The history may be of assistance in making the distinction, but a careful examination of the anatomical character of the lesions should be a sufficient guide. In lupus there are small yellowish-brown nodules in the skin, from which the blood may be expressed and which on diascopic examination appear of a brownish tint. These nodules are in the case of lupus soft to the touch and permit of a probe being forced into them. In syphilis, on the other hand, the nodules are distinctly hard and infiltrated, will not permit the insertion of a probe, and diascopy does not show the same brownish pigmentation that is present in lupus. Syphilitic ulcers have a more serpiginous and clean-cut edge than lupus ulcers; the base of the syphilitic ulcer is of a more necrotic and leathery character; the syphilitic scar is harder and remains free from the nodules which are present in the lupus scar. Lupus ulceration is slow, with irregular, smoothish edge; the base is covered with clean, coarse granulations, which easily bleed. The scar is fine and somewhat wanting in sensibility and contains nodules of definite lupus character. Of course, the two diseases may co-exist, but in cases of doubt the reaction or want of reaction to antisyphilitic remedies may finally clear up the diagnosis. In lupus of the mucous membranes the disease remains more superficial than in syphilis, deeper cartilaginous and bony structures have less tendency to be attacked, the edge of the ulcer has a level, non-infiltrated appearance, and in its neighbourhood are characteristic reddish-brown nodules, while the syphilitic ulcer speedily involves deeper structures, has a definite infiltrated raised edge, and speedily responds to mercurial treatment.

From lupus erythematosus the diagnosis may be made by the absence of ulceration in the latter, the later age at which lupus erythematosus commences, its early symmetry, and the common involvement of scalp and ears. In lupus vulgaris, on the other hand, there may be a symmetrical arrangement of the lesions in later stages of the disease but not at its onset.

From epithelioma and rodent ulcer the diagnosis is easy and can usually be made from the later age at which these two diseases make their appearance, quite apart from the clinical differences.

The treatment of lupus vulgaris must depend to a large extent on the size and position of the lesion. Where the lupus patch is from one-fourth to one inch in diameter it can easily be removed, more especially if it is situated on the non-exposed portions of the body. There is no question that excision is the best possible treatment. The operation is a simple one, the result is excellent, the scar is small, the period of treatment is minimal, and a general anæsthetic unnecessary. The infiltration method produces a quite satisfactory anæsthesia, the edges of the wound can be brought together with a few stitches, and if the removal has been radical there is no recurrence. Such an operation is, of course, inadvisable where the excision of the lupus patch leads to displacement of surrounding structures, causing disfigurement, as, for instance, of an eyelid causing ectropion, or when the lupus lesion is much beyond the size described above. In some such cases excision is still possible, but instead of bringing the edges of the wound together a skin graft must be applied. This graft must be carefully measured, so that after shrinking it will exactly fill the space from which the lupus has been excised. The graft must be taken from a suitable part of the body and must consist of epidermis and dermis excised as deep as the fat layer and applied as rapidly as possible to the area from which the lupus patch has been removed. In ten days, under a simple gauze dressing, the wound will have completely healed, and after a few weeks the cosmetic result will be extremely good. In some extensive cases it is advisable to apply a graft which still remains attached to its original position by a pedicle conveying a sufficient blood-supply, which pedicle is cut through after the graft has taken. Such grafts can, of course, only be cut from a few positions, such as the arm, but are invaluable when it is required to reconstruct a nose or a lip. Thiersch grafts—i.e., grafts shaved very thin with a razor from the superficial layers of the epidermis—may also be used in certain cases with advantage, and I have seen most admirable results obtained by their use. They cannot, however, be employed to fill up a cavity, and when the excision of the lupus has been very thorough and deep these particular grafts are not suitable.

A less radical, and therefore less satisfactory, method of treatment is scraping. One or two small patches of lupus on the limbs or trunk can be removed by a thorough application of the sharp spoon, and here again a general anæsthetic is seldom necessary. The scraping should be followed by the application of pure carbolic acid or the actual cautery to the wound, in order to destroy any lupus tissue which may have escaped the sharp spoon, and then the chance of recurrence will be small. But if any tuberculous tissue or encapsulated bacilli are by inadvertence left behind, it is only a matter of time as to when recurrence will show itself. And this is the great danger when methods such as scarification or the application of caustics are adopted. Scarification consists in destroying the lupus tissue by a knife fitted with numerous parallel blades. Caustics like zinc chloride and pure nitric acid destroy all the tissues with which they come into contact; others like pyrogallic acid and arsenic are said to have a selective action on tuberculous tissue, but in any case their penetrating power is slight and fibrous tissue surrounding tuberculous foci is very apt to escape their attack, thus giving great probability of future recurrence. Perhaps the best of such applications is a plaster or ointment containing 10 to 25 per cent. of pyrogallic acid, or a 20 to 25 per cent. solution of resorcin applied on gauze and renewed every six hours for four or five days. At the end of this time the resorcin will have set up an acute inflammatory reaction, which must be soothed by applications of boric ointment, and the resorcin application then renewed. A paste which is very commonly employed is one containing 20 grains of arsenious acid to the ounce of lard or lanolin, applied night and morning for three days. The whole area so treated swells up and a superficial slough forms, and separates, causing the destruction of the diseased tissues. But so much pain is caused that it is often necessary to give morphia, and even if morphia or some anæsthetic, such as orthoform, be mixed with the original paste the pain is, nevertheless, sufficiently great, in my opinion, to prohibit this method of treatment. Very small nodules can be well treated by inserting sharp-pointed wooden probes soaked in acid nitrate of mercury or in 40 per cent. carbolic acid. In the latter case the wooden spicules are allowed to soak for two days before insertion ; they are pushed rapidly into the lupus nodules, the projecting ends are cut off and a piece of carbolic plaster is applied over them for two or three days. When it is removed the wooden spicules are found lying loosely in the lupus tissue, the inflammatory reaction of which is quieted by zinc ointment or plaster. The chief danger in this method is the overlooking or incomplete destruction of some of the lupus tissue, with the possibility of subsequent recurrence of the disease. When excision is impracticable and caustics are considered inadvisable, the lupus tissue can often be satisfactorily destroyed by the Paquelin cautery or hot-air applications. In the latter method air is passed through a metal tube heated by a Bunsen burner on to the diseased tissue, the air having attained a temperature of 250°–300° C. The diseased surface becomes pale and blanched, and it is dangerous to carry the reaction beyond this stage, otherwise lupus tissue and healthy tissue become irrevocably destroyed and very considerable scarring results. The method is of service only in practised hands, and is very painful, not only at the time of employment, necessitating a general anæsthetic, but also afterwards. Healing takes place by granulation, and the resulting scar is not unsightly if a correct application has been made.

The question of the scar is a most important one when the disease has involved the neck or face. In these cases the cure of the lupus is, of course, the first consideration, but in women especially the appearance of the resulting scar may make all the difference whether they can earn their living in service or not or, if unsightly, seriously compromise their chances of marriage. I have already said that for lupus of non-exposed parts excision, if possible, is by far the best treatment. A small linear scar, if skilfully placed, may also cause little disfigurement on the face, and even a good graft may give a satisfactory cosmetic result, but the scars caused by caustics and the cautery often leave much to be desired. Apart from the want of suppleness the colour of the scar is frequently different from that of the surrounding healthy skin, and therefore unpleasantly noticeable. To a certain extent this can be got over by tattooing the dull white skin graft with a suitable pigment, but the operation is not an easy one.

It becomes, therefore, necessary to seek a method which gives a more supple and natural scar. Such a method we have in Finsen light treatment, which consists essentially in focussing the chemical rays of sunlight or electric arc light on the diseased tissue, which has been rendered anæmic by pressure. The orange and red rays, or heat rays, are excluded by passing the light through a filter containing a solution of copper sulphate, or a stream of cold water, while the violet and ultra-violet rays pass through and are concentrated on the lupus patch, from the superficial vessels of which the red blood corpuscles have been removed by pressure. The patient experiences no discomfort at the time of treatment, even if it be continued for an hour or more at each sitting. The treatment is followed after each application by a reaction, which, when repeated sufficiently, often has a beneficial action on the lupus, leading to its cure and the formation of a soft, thin, and supple scar. The cosmetic results thus obtained are undoubtedly excellent in lupus of the face, and when the patient is wealthy and has plenty of time at his disposal this method of treatment is highly to be recommended for lupus of the face or neck. But lupus patients do not often come into the above category, and it has then to be remembered that the Finsen treatment is very slow, occupies a great amount of time, and requires a vast amount of patience both on the part of the operator and the patient.

When a sufficient quantity of radium is available, most excellent results can be obtained from the application of the pure salt for the comparatively short periods of an hour on successive days until a reaction has been obtained, and subsequent applications when this reaction has been recovered from. By the use of a thin aluminium screen the effect of the more penetrating rays alone can be employed and more deeply-seated nodules treated, but the exposure must then be longer. I have myself got very good results by using a less active specimen of radium sulphate spread on linen with the varnish used by the Radium Institute in Paris, and applied for 24 hours consecutively. The radium must be covered with thin india-rubber tissue to protect it from moisture, or its activity is seriously impaired for some time. The resulting scar is supple and very good.

A third method of radio-therapeutic treatment is by means of the X rays, and this is more rapid than the preceding. The results are also very satisfactory, and not only can the lupus be cured but an excellent scar obtained. The method is, however, somewhat tedious, and numerous exposures to the rays are necessary, leading in some cases to the appearance of abundant telangiectasis round the diseased patch, and consequently excessive prominence of the white scar. X ray ulcers have also been known to develop and cause considerable trouble, but if these dangers are avoided, and the experienced operator need not fear them, the final results are good, and little inferior to those obtained by the Finsen method.

The results both of the Finsen treatment and of the X rays in lupus appear to me to be due to the inflammatory hyperæmia induced rather than to any selective action on the bacilli which are causing the disease, and it is well to bear in mind that radio-therapeutics are not the only method of treating lupus vulgaris, and that recurrence has occurred even when the disease has been apparently cured by actinic treatment. In cases where the tendency to recurrence is great and in many other cases of lupus vulgaris the so-called "opsonic treatment" gives most excellent results. The method is somewhat complicated and has been described at length by me in The Lancet,[1] and cases treated successfully by this method were reported by Pernet and myself in 1906.[2] In two cases I have used liquid air with considerable success.

But whatever the local treatment adopted for any particular case of lupus, and the choice of the most suitable method of treatment will depend largely on the experience and skill of the dermatologist, the general health of the patient must also be treated, and the tendency to tuberculosis, of which the disease is evidence, combated as energetically as possible.

Lupus verrucosus presents some differences from lupus vulgaris in that it is the form of tuberculosis seen in butchers, post-mortem porters, pathologists, and others who directly inoculate their hands from a tuberculous body. The lesions are nodular, crusted, sometimes markedly hypertrophic, usually single, rarely multiple. On removing the crust pus may sometimes be squeezed out. The typical soft, reddish-brown nodules of lupus vulgaris are entirely absent, the lesions being essentially firm and hard. The disease is very chronic and may persist for years, but patients appear to be prone to develop tuberculosis elsewhere as well.

Tuberculous ulcers, tuberculous gummata, suppurating and vegetating tuberculous disease of the skin are of interest chiefly from the point of view of diagnosis, and this can usually be cleared up by the estimation of the opsonic index and determining the results of injection of tuberculin or by histological examination and the inoculation of a guinea-pig.

The tuberculides are characterised by successive eruptions of lesions, at first either papular or nodular, more or less deep, of slow growth, sometimes becoming pustular, or ulcerating and healing with the formation of a cicatricial scar. They may be lichenoid, as in lichen scrofulosorum ; papular, as folliclis and acnitis ; acneiform, as in acne cachecticorum ; or erythemato-atrophic, as lupus erythematosus.

The tuberculides occur, as a rule, in individuals who are suffering from some form of tuberculosis. This rarely takes the form of phthisis but is more commonly a slowing developing form of tuberculosis often of the glands or bones or joints, that is to say, some variety of tuberculosis which is seldom fatal but rather capable of cure.

---

[1] The Lancet, Jan. 19th (p. 144) and March 23rd (p. 803), 1907.

[2] British Journal of Dermatology, October, November, and December, 1906.

Microscopic examination of these lesions sometimes shows giant cells in considerable numbers and lymphoid and epithelioid cells having a tendency to caseous degeneration Such are the appearances in lichen scrofulosorum and acnitis. In lupus erythematosus, on the other hand, and in folliclis the lesions are found to consist of columns of round cells encircling the dilated vessels of the derma. Such lesions do not contain the tubercle bacillus, and inoculation of the guinea-pig seldom gives a positive result except in the case of lichen scrofulosorum and one recorded case of erythema induratum.

I do not at present intend to deal with the tuberculides in detail, either from the point of view of clinical characteristics, differential diagnosis, or treatment. I would merely mention that the general treatment is that usually adopted in tuberculosis, including, of course, the use of tuberculin controlled by estimation of the opsonic index, and the local treatment is that best suited to the local lesions, whether they be those of lichen scrofulosorum, Bazin's disease, lupus erythematosus, or other tuberculide. In connexion with lupus erythematosus I would, however, call attention to the excellent results obtained in different cases of ionisation, radium, solid carbonic oxide, and liquid air. Only recently I had the pleasure of demonstrating to some of you the successful results both of the use of liquid air and ionisation.

A CASE OF PONTINE TUMOUR PRODUCING DISSOCIATED HEMIANÆSTHESIA.

By W. P. HERRINGHAM, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL, ETC.;

AND

C. M. HINDS HOWELL, M.D. OXON., M.R.C.P. LOND.,
PATHOLOGIST TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC; PHYSICIAN TO GREAT NORTHERN CENTRAL HOSPITAL, ETC.

THE following case deserves to be placed on record for two reasons. First, it is, so far as we know, the only case yet published in which hemianalgesia and hemithermo-anæsthesia were produced by a tumour, while the sense of touch was preserved (dissociated hemianæsthesia); secondly, it carries the localisation of the track of sensations of pain and of heat higher up the central nervous system than has yet been reached.

FIG. 1.

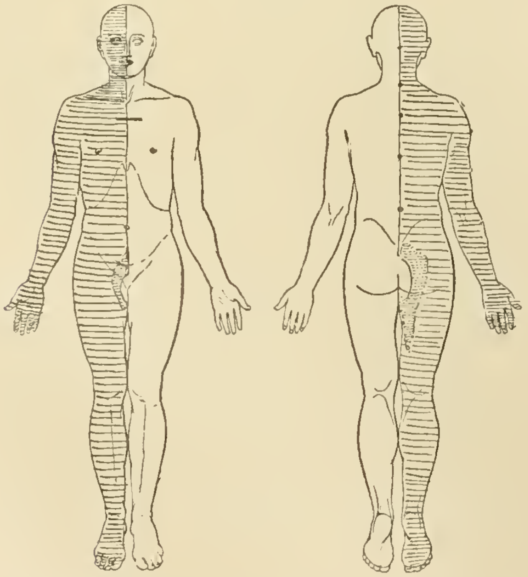
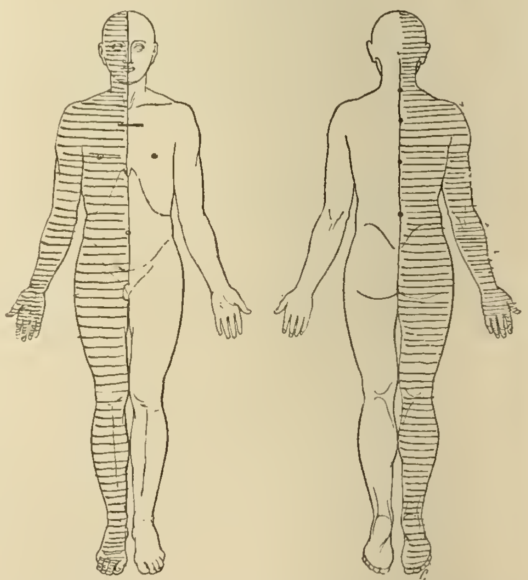


FIG. 2.



A man, aged 36 years, a gardener, was admitted on Dec. 10th, 1908, and died on April 21st, 1909. His father and mother were each alive, and over 70 years of age. He had been married for several years, but had had no children. He had had a sore on the penis seven months ago, but no secondary symptoms. He was treated by iodide of potassium and mercury, pushed to salivation, but fruitlessly. One year ago he had been treated for neuralgia. Six months ago he had begun to attend in the out-patient department for left facial paralysis. He then swayed when standing and had unequal pupils and diplopia. As he did not improve he was admitted.

While in the ward the patient had: (1) persistent occipital headache; (2) repeated vomiting; and (3) the following localising symptoms:—

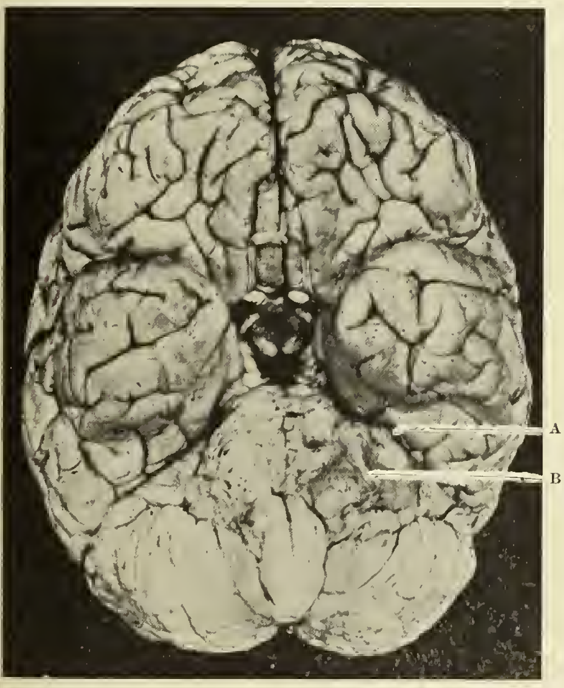
A. *Sensory.*—Tactile sensation was preserved everywhere, except upon the left side of the face and on the mucous membranes of the mouth and nose. These will be described separately. The superficial sensation of pain (pin-prick) was entirely lost over the whole of the right half of the body from the crown of the head to the sole of the foot (Fig. 1), with the exception of the penis and scrotum and a small area round the anus. Here a pin-prick was felt naturally. A small area round each of these parts showed relative analgesia. The deep sensation of pain was apparently also lost upon the same side, for pressure which produced pain upon the left half of the body and on the left limbs produced no pain upon the right. The vibrations of a tuning fork were either not felt at all on the right side, as at the knee and on the crest of the ilium, or were felt less or for a shorter time than on the left side. The sensation of heat was completely lost and that of cold was only recognised as producing a stinging pain over the whole of the right side, with the exception that on the scrotum and penis the extremes of heat and cold were distinguished as hot and cold (Fig. 2). The sense of position of the limbs was natural.

B. *The sensory condition of the face and mouth* was peculiar. It was explained by a second tumour which had not been suspected during life. Tactile sensation was lost over the left face and cheek from the eyebrow to below the mouth and was weak over the forehead, temple, and lower jaw. The sense of pain and the thermal sense were preserved over these areas. The mucous membranes of the nose, cheek, palate, tongue, and lips were anæsthetic on the left side, but not on the right, to the touch of cotton-wool. Of the mucous membrane of the cheeks and lips the left side was analgesic though the skin on the left cheek felt pain, while the right side felt pain though the skin of the right cheek did not. There was anæsthesia to cold on the dorsum and on the under surface of the left half of the tongue, but anæsthesia to heat was complete over the whole dorsum and partial over the whole of the under surface. Cold was felt inside both cheeks and on both lips, but heat was not felt inside either cheek and was delayed on the lips.

C. *Motor.*—Equilibrium was lost. The patient swayed greatly when standing or walking. There was weakness of the left sixth nerve and diplopia was produced by looking to the left. There was nystagmus in every direction except downwards. The right pupil was always larger than the left, but each pupil reacted naturally to light and to accommodation. There was some weakness of the left external pterygoid, none of the masseter. There was slight weakness of the facial muscles on the left side of the mouth. The eye closed naturally and the frontalis also acted naturally. The tongue was protruded straight; swallowing and speech were natural; the palate and the vocal cords moved equally and well (Mr. W. D. Harmer's report). There was no muscular wasting. The power of the right arm and leg was equal to that of the left, and when lying in bed coördination was natural on both sides. The right knee-jerk was the greater; there were ankle clonus and extensor response of the great toe on the right side.

D. *Special senses.*—Vision was natural with each eye separately. The fields were not contracted. The optic discs had been several times examined and had been found natural. On April 13th the note is as follows—Right eye: optic disc blurred and swollen; vessels obscured; large hæmorrhage on inner side. Left eye: optic disc swollen, less so than right; small hæmorrhages round it. Hearing was bad. A watch was not heard beyond 8 inches from the right ear and 4 inches from the left. But in this ear the membranes were normal and bone conduction was unimpaired (Mr. C. E. West's report). Taste was lost over the left half of the tongue.

FIG. 3.



Reproduction of photograph of the base of the brain showing tumour, B, lying on the left lateral aspect of the pons. The left fifth cranial nerve, A, is seen projecting from the cystic part of the growth.

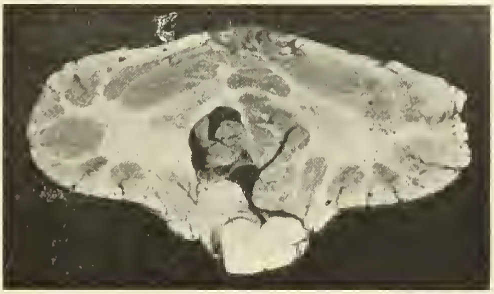
Several cases have been recorded of late years in which dissociated hemianæsthesia has been due to softening in the lateral region of the medulla, produced, in the cases which were examined after death, by thromboses of the posterior inferior cerebellar artery. References are given by Dr. Kinnier Wilson, to whose paper we refer below. These cases have, however, differed from ours in that the functions of the pharynx and larynx have been involved. The absence of these symptoms in our case led us to localise the lesion at a rather higher level. The severe occipital pain and the constant vomiting led us to suspect that the disease was tumour rather than softening, and this diagnosis was confirmed by the eventual appearance in April of double optic neuritis.

The patient went downhill steadily, and eventually died. When the brain was removed post mortem a rounded growth was seen occupying the position of the sella turcica, but not infiltrating the brain in any way, though its posterior part was to some extent compressing the ventral aspect of the pons. A second tumour, partly solid and partly cystic, was also observed, apparently embedded in the left lateral aspect of the pons.

The first tumour.—The sella turcica was removed entire and the mass lying in its centre was found to be composed of a tumour which was growing from the nasal mucous membrane. This had infiltrated through the bone and projected as described within the cranial cavity. It was roughly circular, measuring three centimetres in diameter. It was of a dark red colour and contained a certain amount of viscid fluid. Microscopically it was a myxo-sarcoma.

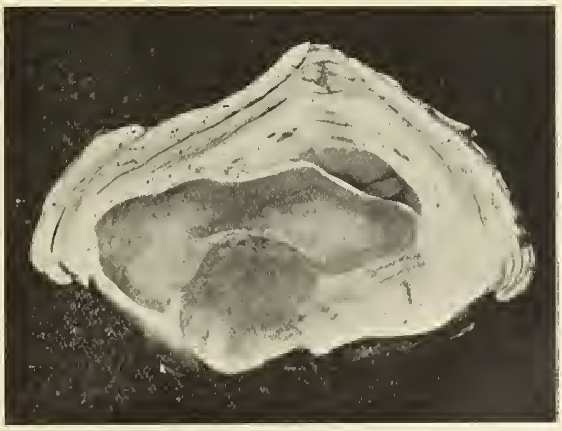
As regards the intracranial relation of this tumour, it in no way infiltrated the brain, but, as stated above, had somewhat compressed the pons posteriorly; anteriorly it reached the pituitary gland and infundibulum, but these were lying quite distinct from the growth and showed no sign of disease. The chiasma and optic tracts were not involved in any way. Of the cranial nerves the tumour had involved the right fifth, which was spread out and flattened to a considerable extent over the right side of the growth. The left sixth nerve passed through the dura mater just at the edge of the tumour, and appeared to be partly involved in it.

FIG. 4.



The commencement of the cystic portion of the tumour within the fourth ventricle is seen. The striæ acousticæ are seen just below the cyst. Section viewed from below.

FIG. 5.



Shows the tumour lying in the middle peduncle and involving the left lateral aspect of the pons. The cyst in connexion with it is seen almost completely filling up and dilating the fourth ventricle. A match has been introduced into the Sylvian aqueduct. Section viewed from below.

The second tumour.—This lay apparently in the left cerebello-pontine angle in the position of the inferior and middle peduncles. The surface of the tumour was smooth and covered with pia mater—in part it felt hard and in part was evidently cystic, the latter portion forming the anterior and lateral part of the tumour as it lay *in situ* (*vide* Fig. 3). Through the lateral aspect of the growth, which here was cystic, the left fifth cranial nerve emerged. The solid part of the tumour compressed the left seventh and eighth cranial nerves and exercised some pressure, though less, on the ninth, tenth, and eleventh. The sixth and twelfth nerves were not involved.

The brain stem was divided just below the posterior corpora quadrigemina and parallel sections were made through the pons and medulla. The tumour was then seen to be growing from the left side of the pons and to have a single large cyst in connexion with it. The solid part of the tumour lay on the left lateral aspect of the pons, and though it compressed the upper part of the medulla and olive of the left side it did not infiltrate them at all. The solid part of the growth formed a projection within the dilated cavity of the fourth ventricle, and extended throughout the inferior two-thirds of the pons. The cystic part of the tumour filled the cavity of the fourth ventricle completely and commencing below at the level of the striæ acousticæ extended as far up as the commencement of the iter. The left superior cerebellar peduncle lay spread out on the surface of the cyst and the middle peduncle passed through its cavity in part and partly over the ventro-lateral surface of the tumour.

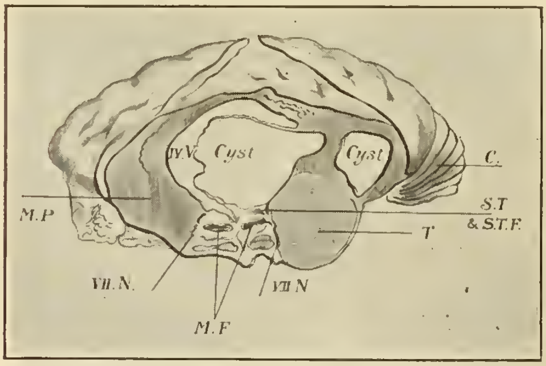
Sections were made throughout the whole spinal cord and brain stem and examined by the Marchi, Weigert-Pal, and hæmatoxylin and Van Giessen methods.

Hæmatoxylin and Van Giessen.—The tumour was found to be a glioma, which, however, was fairly circumscribed and did not infiltrate the surrounding parts to any extent.

Marchi method.—Spinal cord. There was no degeneration. Medulla: some degeneration in the intra-medullary fibres of the ninth, tenth, eleventh, and twelfth nerves, though not to any great extent. Throughout the medulla a fine diffuse degeneration was seen. There was, however, no clearly defined tract degeneration and no definite degeneration of the spinal root of the fifth nerve on either side. Throughout the pons, mid-brain, subthalamic region and the basal ganglia a diffuse degeneration was present. This, however, did not affect the pyramidal fibres to any extent, but was best seen in the fibres of the tegmentum and in the peduncles of the cerebellum. It was not more marked on one side than on the other, except that the fibres of the left middle peduncle were largely degenerated.

Weigert-Pal method.—Sections were made through the tumour and cerebellum, and they illustrate very well the relationship of these. The semi-diagrammatic drawing (Fig. 6) is from one of these sections. They showed very well the degeneration in the left middle peduncle. The cyst was found to be divided in one plane into a larger central and a smaller outer part by surviving fibres of this peduncle.

FIG. 6.



Semi-diagrammatic drawing from a Weigert-Pal preparation showing the tumour and its relations at the level of the seventh cranial nerves. C, Cerebellum. M.P., Middle peduncle. M.F., Mesial fillet. T., Tumour. S.T., Spino-tectal fibres. S.T.F., Spino-thalamic fibres.

We must now see how far the clinical symptoms can be correlated with the pathological findings. The curious sensory disturbances in the areas of the right and left fifth cranial nerves are to be explained by the fact that both nerves were implicated by the two tumours, though in neither case was their degeneration, as judged from the methods employed, very extensive.

With regard to the crossed dissociated hemianalgesia and hemi-thermanæsthesia, clinical observation has established the fact that the fibres carrying afferent impulses of thermal or painful type, cross very soon after entering the spinal cord and ascend in the antero-lateral columns. In this position there ascends the tract of Gowers, which is probably also a crossed tract, though this has not been definitely accepted.[1] Gowers's tract can be divided into three long afferent paths—the ventral spino-cerebellar, spino-thalamic, and spino-tectal. Of these, the two latter reach as far as the thalamus and the upper part of the mid-brain, as their name implies. It would seem probable that these at all events constitute a path by which impulses of the kind we are considering may travel, though no doubt there are secondary paths formed by short relays, but these, too, probably lie in the lateral columns of the cord. The lesion produced in thrombosis of the posterior inferior cerebellar artery, which gives rise to symptoms somewhat analogous to those seen in our case, involves an area in the medulla through which the fibres under consideration run.[2] Our case would seem to afford further confirmatory evidence of the function of these fibres, for owing to the position of the pontine tumour they must have been seriously involved, although unfortunately we could not demonstrate that they were affected out of proportion to other tegmental fibres in the pons.[3] However, tumours are notoriously unsatisfactory lesions on which to base conclusions, either as to anatomical distribution or physiological function, and we can only urge the probability of the view which we have advanced.

The case shows, at all events, that in the pons, as in the medulla, the fibres carrying impulses of pain, heat, and cold are still distinct from those carrying tactile sensations.

ACUTE PRIMARY PHLEGMONOUS GASTRITIS:

NOTES OF A CASE DUE TO THE PNEUMOCOCCUS.

BY J. E. ADAMS, M.B., B.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, E.; LATE RESIDENT ASSISTANT SURGEON TO ST. THOMAS'S HOSPITAL.

OWING to the rarity of this condition, and the exceptional opportunities afforded by the following case for microscopical and bacteriological investigation, it has seemed desirable to place it on record together with some account of previously described instances of this lesion. My case was admitted to St. Thomas's Hospital in February, 1909, under the care of Dr. Hector W. G. Mackenzie, and to him my best thanks are due for permission to publish this account of it.

Before giving a detailed description of the case it will be as well to consider other cases which I have found collected in the literature of the subject. The best account of the disease was published some thirteen years ago by Leith,* and, while further instances have been added since this date, no better clinical or pathological description is to be found. The larger text-books of medicine contain brief descriptions of the disease in accordance with its rarity, and they speak of a circumscribed and a diffuse form, and it is this confusion between what should be termed "abscess of the stomach wall" and the true phlegmonous inflammation of its wall that makes it difficult to ascertain exactly how many cases of the latter disease have been recorded. There is little difficulty in differentiating between "abscess" and "cellulitis" in the subcutaneous tissues, and it is to be hoped that future cases will be classified with greater accuracy. Again, not sufficient stress has been laid on the occurrence of "primary" and "secondary" inflammations of the stomach wall, and a number of the cases of phlegmonous gastritis in the literature were secondary to gastric ulcer or carcinoma, or operations on the stomach, and should therefore be termed "secondary" phlegmonous gastritis. By acute primary phlegmonous gastritis, therefore, we should understand a diffuse inflammation of the gastric wall for which no cause, other than a bacterial infection, can be assigned. The infiltration of the stomach wall affects all the coats, but the main incidence is in the submucosa, and here there is usually a layer of thick pus, often macroscopical as well as microscopical.

---

[1] Page May: The Afferent Path, Brain, vol. xxix., p. 742.

[2] See Kinnier Wilson, Proceedings of the Royal Society of Medicine, vol. ii., Neurological Section, p. 52, for account of a case and bibliography.

[3] The spino-thalamic and spino-tectal fibres which lay at the mesial edge of the tumour would at all events be more directly exposed to œdema or other vascular disturbance than the fibres of the mesial fillet which lay more remote and quite free from the growth.

* Edinburgh Hospital Reports, vol. iv., 1896.

Leith, up to 1896, collected 43 cases of diffuse inflammation of the stomach wall, and it may be well to reconsider the essential details of his, the forty-fourth, case.

The patient was a well-developed man of 49. He had enjoyed excellent previous health, but was very irregular as to the time of his meals, sometimes going from early morning till late at night without food. After these long fasts he was accustomed to overload his stomach. He was very temperate in drinking. The illness began with a feeling of malaise for 24 hours. On the second day the patient vomited, bringing up a quantity of whitish fluid containing mucus and granules of solid matter but no pus; he then experienced nausea, but very little pain. On the third day he was awakened by gastric pain, with nausea, followed by vomiting, at first of mucus, as before, and shortly afterwards the vomit was tinged with bile. The vomiting became more frequent, and the patient suffered from severe pain in the left side of the abdomen.

The man's condition four days after the onset of the illness was as follows: Face anxious and shrunken; frontal headache; very restless, with slight delirium; slight general sweating; tongue dry and covered with dirty white fur; temperature 101° F., pulse 110, full and rather tense. There had been no action of the bowels for two days, but there was no general abdominal pain. The patient complained of severe pain in the region of the stomach, aggravated by pressure or the lightest percussion. There was no sign of distension of the stomach, and the rest of the abdomen could be palpated without causing discomfort. Poultices were applied over the epigastrium, and a mixture containing bismuth and hydrocyanic acid was given internally.

On the sixth day of the illness the vomiting had become less frequent, but the epigastric pain and tenderness persisted, and had spread also to the right iliac fossa and the left hypochondrium. The temperature was 102°, and the pulse 86, full and not thready. The patient was very restless but quite conscious. An enema containing turpentine in soap and water was given, but no action of the bowels resulted. The next day there was general distension of the abdomen; a diagnosis of general peritonitis was made, and abdominal exploration was carried out. The visceral peritoneum was noticeably injected, and the coils of bowel were covered with a little sticky lymph; this condition was most marked in the right iliac fossa. The appendix was removed, but found to be normal. No cause for the peritoneal infection could be discovered, and the operator contented himself with lavage and closure of the abdominal cavity. The patient died seven hours after the operation.

Necropsy.—A post-mortem examination was made 14 hours after death. The peritoneal cavity contained about three ounces of blood-stained serum but no pus, the serous coat of the small intestine was intensely injected, and the coils were stuck together by a little lymph. As the stomach was reached there was slight increase of the inflammation, and, at a point an inch and a half from the pylorus on the lesser curvature, there was an area of diseased stomach wall, the size of a sixpence, covered with a thin layer of purulent lymph; the serous coat beneath was injected, and this inflammation appeared to be older than the rest of the peritonitis. Section of the stomach revealed a greatly swollen mucous membrane with a little adherent mucus; there were no ridges on its surface and the colour was pale for the most part. A few small excoriations were exhibited near the pylorus. The submucosa was everywhere thickened, and measured from three-eighths to half an inch in depth all round the circumference for two to three inches on the gastric side of the pylorus. Its thickness lessened as the œsophageal orifice was reached. Dead white in colour, firm and solid; no fluid exuded on pressure. The change was accurately limited by the pyloric ring, and the duodenum was normal. There was no sign of perforation of the stomach wall. There was some injection of the serous coat; most marked in the region of the patch mentioned above. The glands along the lesser curvature of the stomach were a little swollen and injected. The mucous membrane of the small bowel was slightly swollen and injected in those parts where the serous coat was most inflamed. All the other organs, thoracic and abdominal, were healthy.

Leith's description of the microscopical appearance of the stomach wall is as follows:—

Submucous coat.—Infiltrated almost everywhere with small round cells, obscuring other structure. Where the infiltration was less dense the round cells lay deeply placed close to the muscular layers. No red blood corpuscles seen, but abundant fibrin. Blood-vessels of muscularis mucosæ dilated.

Mucous coat.—Infiltration with round cells between the gland tubes in many areas, reaching the surface in some situations, where exudation of a fibrinous character was in evidence, with a few red cells. Blood-vessels considerably dilated. Muscularis mucosæ stained well though a little swollen in parts.

Muscular coat.—Small masses of round cells found between the muscle bundles, reaching just to the serous coat. Muscle fibres not altered.

Serous coat.—Unaltered for the most part; at the situation of the fibrinous patch revealed at the necropsy it showed well-marked fibrinous inflammatory exudation.

Résumé.—Microscopy revealed no evidence of previous gastric inflammation, but only recent inflammatory changes. Multinuclear cells were the infiltrating leucocytes for the most part.

Bacteriology.—Films and sections showed large numbers of streptococci, separate cocci, and several groups of staphylococci. All stained well by Gram's method. Most abundant in submucosa, and mainly extra-cellular but occasionally within the leucocytes. A few in the mucous coat, and in the serous coat in the neighbourhood of the lymph patch. Films from peritoneal surface of intestines showed the same organisms. No bacilli seen. Cultures not obtained.

It will thus be seen that Leith's case comes well within the definition of acute primary phlegmonous gastritis, since there was no other lesion of the stomach present, nor could the inflammation be ascribed to metastasis, as has occurred in some cases of pyæmia, usually of puerperal origin. It is a pity that the bacteriology rests on the microscopical findings alone, and, as will be seen, this applies to the majority of the cases described.

Since Leith's paper was published the number of recorded cases has increased twofold, so that Robson and Moynihan,[2] eight years later, were able to give clinical and pathological details of 85 cases. It is clear, however, that not all these were strictly primary phlegmonous gastritis, so that I will now describe my own case, which is complete in its pathological details, though the clinical history might have been fuller, if the nature of the lesion had been suspected before operation, and if the patient had been an adult instead of a young child.

Acute primary phlegmonous gastritis; pneumococcal peritonitis.—The patient, a girl, aged 13 years, was admitted on Feb. 16th, 1909. The family history was good. The previous history showed that the patient had always been a delicate child and had been brought up in very poor surroundings. When 16 months old the child was taken into Lambeth Infirmary for diarrhœa and vomiting. She remained there two and a half years, and during that period exhibited thrush and sores on the buttocks, and she also contracted measles. At the age of eight the child was admitted to Wandsworth Infirmary with bronchitis and pneumonia. In 1907 the girl was found to be suffering from a vaginal discharge which was of gonorrhœal origin. Since this time the mother had noticed that her child often complained of pain in the stomach and headache, and there had been progressive loss of weight. Vomiting had not been a common occurrence, and the bowels had acted with regularity.

The history of present illness is as follows. In the evening of Friday, Feb. 12th, after having felt quite well all day, the child was suddenly seized with acute abdominal pain, which was soon followed by vomiting. The vomit was coloured with bile, yellowish-green, and watery. The girl was put to bed, but she obtained no sleep, and a special feature of the case is that delirium set in on the first night. The symptoms of acute abdominal pain, vomiting very shortly after the ingestion of food, and restlessness, with attacks of delirium, continued up to the date of admission to the hospital, with no amelioration, on Feb. 16th. An aperient, liquorice powder, had been given on the 12th, but the bowels did not act until the 14th, when the stools were loose and offensive. It should be noted that the child was unable to localise her pain to either the upper or lower segments of the abdomen.

On examination the child looked extremely ill; her face was pale, with a flush on each cheek and sunken eyes with darkened rings beneath them. Her respirations were rapid and shallow, and she was very restless. The temperature was 100·8° F., the respirations were 30, and the pulse was 122. The tongue was dry and thickly furred. Abdominal respiratory movements were restricted to the upper segment. On palpation there were general tenderness and some rigidity, but this was most noticeable in the right ilia fossa and across the middle line to the left hypochondrium. In both flanks the abdominal wall was soft, though in this situation there was dulness on percussion. Elsewhere the percussion note was resonant, and there was no mass to be felt. Rectal examination revealed nothing abnormal. No peristalsis could be seen, or heard with the stethoscope. The thoracic viscera showed no physical signs of disease. The urine, drawn off by catheter, contained a trace of albumin and some mucus.

For this description I am indebted to Dr. J. F. Windsor, the house physician in charge of the case.

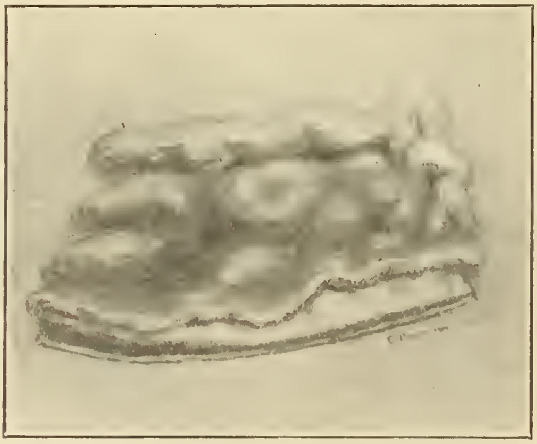
A not unreasonable diagnosis of general peritonitis, due to perforative appendicitis, was made, and immediate operation was decided upon. On opening the peritoneal cavity through a low right rectus incision a little turbid seropurulent fluid escaped; this was not offensive, and examination of the appendix proved that this was not to be blamed for the condition. There was a little lymph on the coils of bowel examined, which were for the most part collapsed, and the fluid had collected in the pelvis where the Fallopian tubes were found to be healthy. As no assignable cause for the condition could be found through this incision, I opened the abdomen through the upper half of the right rectus close to the middle line, with a view to exploring the stomach. Here also there was a little fluid, but no lymph, and no sign of perforation of stomach or duodenum. The only noticeable feature was the extraordinary thickness of the stomach walls, which, when the viscus was drawn down into the wound, were fully one inch in thickness when held between the fingers; this condition was found to be present throughout the stomach, but it was much more noticeable in the pyloric half than towards the œsophageal opening; the thickening stopped short at the pylorus and the duodenum was normal. There was some injection of the serous coat of the stomach but there was no loss of peritoneal polish, nor were there any alterations in colour suggesting the presence of pus in the subserous tissue. In the absence of any other causative lesion the diagnosis of acute primary phlegmonous gastritis was made, and it was decided that little good could come of incising the stomach wall as the peritoneum was already infected; therefore some of the peritoneal fluid was collected in a sterile test-tube and the abdomen was closed, leaving only a drainage-tube into the pelvis. The condition of the patient at the end of the operation was grave, so that the abdomen had to be hastily sewn up.

---

[2] Diseases of the Stomach, Robson and Moynihan, 1904.

After the operation the child was allowed brandy and water by the mouth, injections of strychnine were given, and an attempt at continuous rectal infusion with saline was made; this, however, was not retained owing to restlessness, and subcutaneous saline infusion was therefore substituted. There was some temporary improvement but this was not maintained, and though the temperature was normal on the third day and vomiting became less frequent, yet restlessness and mild delirium were constantly present and the pulse became more rapid and feeble. Death occurred four days after operation, and during this period there had been occasional vomiting of bilious material but no pus, and the child's bowels had not acted. Morphia had to be resorted to occasionally to keep the child from throwing herself out of bed.

FIG. 1.



Pyloric end of the stomach enlarged about one-third.

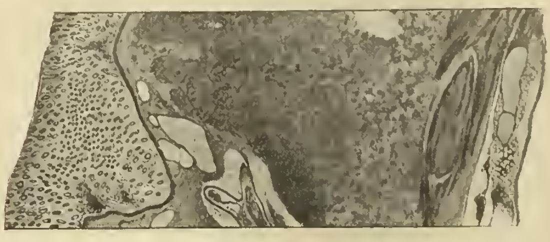
The fluid removed at operation from the peritoneal cavity yielded a *pure culture of the pneumococcus.*

Within half an hour of the child's death the upper abdominal incision was reopened and the stomach was removed; cultures were then taken from the serous coat, the submucous layer, and the mucous membrane. The results of these cultivations will be indicated later. The appearance of the stomach, which is shown in Fig. 1 (reproduced from a coloured drawing executed within two hours of the patient's death by my friend Mr. G. Thornton), may be thus described:—

The *mucosa* was greatly swollen with well-marked ridges on its surface. In colour it was noticeably reddened with small areas of ecchymosis on the free surface of the thickened ridges. There was no pus or mucus seen upon its surface and no ulceration even of the size of a pin point which would have allowed exudation of pus from the submucous layer. The *submucosa* was thickened throughout, but not uniformly; the most evident changes occur as the section approaches the pylorus, seen to the right in Fig. 1. The colour is yellowish-white, with a little exudation of whitish fluid on pressure. It had the appearance of coagulated pus and had raised the mucous membrane from its bed and encroached considerably on the muscular coat, which in several regions was replaced by this dull yellowish-white infiltration. *Muscular coat:* where this was free from naked-eye invasion it was seen to be reddened and congested. The *serosa* showed no appreciable thickening, but some injection on its free surface.

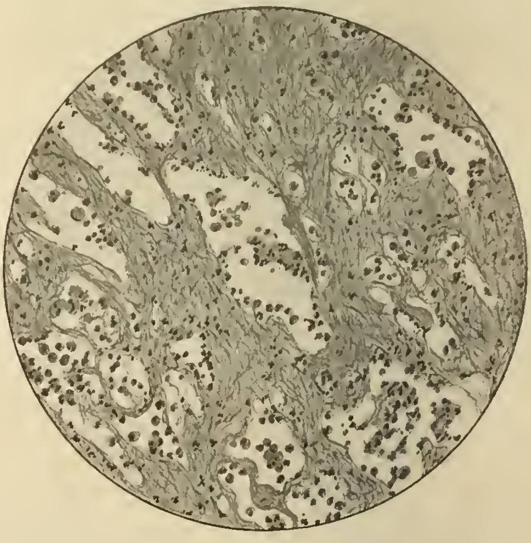
The other organs showed very little change, with the exception of inflammatory lesions of the serous sacs. There was general peritonitis, with injection of the serous coat of the bowel uniformly distributed, with some pus in the pelvis and around the liver, the right lobe of which was coated with lymph. There were a few old adhesions in the lower part of both pleural cavities, but these sacs contained no fluid. The surface of the right auricle exhibited three patches of recent pericarditis. These lesions may well be accounted for by a pneumococcal infection of the serous sacs.

FIG. 2.



Section through the stomach wall showing greatly thickened submucosa consisting of fibrinous reticulum with masses of leucocytes. Leucocytic infiltration of the deep layers of the mucosa is also seen. 2-inch objective.

FIG. 3.



Submucous coat showing fibrin and entangled leucocytes with diplococci scattered throughout the section. $\frac{1}{6}$-inch objective.

Microscopy.—The *mucosa* was not much altered. In places, however, the intertubular spaces were densely packed with polynuclear neutrophiles. The *submucosa* was greatly thickened, consisting of a dense fibrinous reticulum with large numbers of polynuclear leucocytes entangled in the meshes. Small round cells were also present, but for the most part the cells were leucocytes, collected in a number of small clumps. Diplococci, staining by Gram's method, were abundant. The *muscular coat* exhibited leucocytic infiltration with some degeneration of the muscular bundles. The *serous coat* was very little altered. It was, however, noticeable that the number of diplococci seen in the sections were more numerous as one examined the microscopic field from mucous to serous coats.

Film preparations of the purulent fluid removed from the peritoneal cavity at the operation revealed the presence of numerous diplococci, mainly extra-cellular, but in some cases within the leucocytes. The microscopical appearances are well shown in Figs. 2 and 3.

Bacteriology.—From the peritoneal fluid the pneumococcus was obtained in pure culture. From the mucosa we obtained the colon bacillus and an atypical diplococcus, while from both the submucous and the serous coats pure cultures of a diplococcus, having all the characteristics of the pneumococcus, were obtained.

For the results of the microscopical and bacteriological investigation I am indebted to Mr. Dudgeon, the director of the St. Thomas's Hospital laboratories.

Of the 85 cases of which details are given by Robson and Moynihan, only 63 can properly be classed as instances of phlegmonous gastritis, and since 1904 not many cases have been added to the records. Huguenin[3] states that the number of described cases of the primary form is 70, and he then describes a case in a man, aged 73 years, who had a chronic pyloric ulcer, so that his case should not be added to the number of primary infiltrations of the submucous coat of the stomach. Another case, secondary to carcinomatous ulcer, is described by Lorenz Zeimnan,[4] who states that the diagnosis has only twice been made by exploratory operation. He also adds that a leucocytosis up to 30,000 has been found, and that herpes labialis and facialis have been noticed concurrently with this disease.

Cotterill,[5] in 1905, published a case which was undoubtedly one of primary phlegmonous inflammation. The patient was a man of 40 years, and a fortnight before his fatal illness he had consumed some foreign salmon which caused gastric pain and diarrhœa. From this attack he made a complete recovery, and after a day on the golf links, and shortly after a small breakfast, he experienced severe gastric pain and a sensation of having a heavy load on his stomach. He vomited a quantity of frothy fluid, was very thirsty, and very restless. Frequent emesis occurred and there were spasmodic pains in the stomach. The temperature on the second day was 103° F., pulse 120, and respirations 24. All these symptoms increased in severity the next day and the patient became cyanosed. The man's mind was fairly clear but he had no idea that he was so near to death. This occurred in coma two and a half days after the onset of his illness. At the necropsy the submucous coat of the stomach was found to be infiltrated with pus; the mucosa was congested and exhibited superficial petechial hæmorrhages. Microscopically there was leucocytic infiltration extending from the submucous layer to both mucous and muscular coats. The other organs were healthy. No bacteriology is described.

In 1906 Schnarrwyler[6] reviewed 83 cases which he had found in the literature, paying especial attention to the causes to which the onset of the disease was attributed. He also added 3 cases of his own, 1 secondary to carcinomatous ulcer at the pylorus, 1 secondary to puerperal infection with peritonitis, and 1 a primary phlegmonous gastritis. In this last case no cause save alcoholism could be discovered, apart from the infecting organism, which in all three cases was a streptococcus. More than three-fourths of Schnarrwyler's cases were described by continental writers, so that the number of cases occurring in this country is small, and, as shown by the accompanying table, where assignable causes are given for 46 out of the 83 cases, there were primary gross lesions of the stomach in 12 instances, and in several others the condition may be attributed to metastatic inflammation, a part of a systemic pyæmia.

Causation of Acute Phlegmonous Gastritis in 46 Cases (after Schnarrwyler).

Alcoholic excess	8	Ulcer of leg	1
Dietetic error...	5	After gastro-enterostomy for carcinoma of pylorus	2
Chill	2	Gastrostomy	1
Food and drug poisoning	6	Chronic ulcer	4
Previous gastritis...	1	Carcinoma	4
Trauma	2	Convalescence after typhus ...	1
Puerperal fever	2	Articular rheumatism	2
Pyæmia	2	Bronchiectasis	1
Ulcerative stomatitis	1		
Septic œsophagitis	1		

With regard to the organisms found in these cases a streptococcus is almost always to blame; in only a few cases have cultures been taken, but the microscopical evidence showed streptococci present in large numbers in 14 cases; in one a diplococcus[7] was also present. This was the case mentioned in the above table where an ulcer of the leg was regarded as the source of infection.

Before discussing further the causation of this interesting and unusual pathological condition it may be well to note some other authors who have described typical cases in recent years. Cayley[8] recorded an excellent example of the disease in a woman of 26, where death occurred from general purulent peritonitis. In this case cultures grew only the colon bacillus, while streptococci were present in film preparations. Hopkins and Weir[9] described the case of a man of 38, whose acute symptoms made their appearance after he had been in hospital for six weeks. He died at the end of ten days' irregular fever from general purulent peritonitis. The chief organisms seen microscopically were diplococci; a few bacilli were also present; unfortunately, no cultural results were obtained. A beautiful specimen was exhibited before the Pathological Society of London in 1906 by Bernstein.[10] The diagnosis was not suspected during life, but at the necropsy the stomach was found to be infiltrated from cardia to pylorus. There was no ulcer or lesion of the mucous membrane, but the submucous coat was fully half an inch in thickness, and consisted of a dense layer of leucocytes with fibrin surrounding them. Cultivations yielded a pure growth of a streptococcus. This stomach was removed from a woman of 65, of chronic alcoholic habits, and the onset of the disease was attributed to a drinking bout. The specimen is preserved in the Museum of the Royal College of Surgeons.

One of the effects of a pneumococcal infection of the stomach was well shown by a case described by Foulerton[11] in 1902, in which a man, aged 26, who had been shortly before treated for quinsy, died from intense toxæmia, evidenced by severe epistaxis, facial petechiæ, fever, and restlessness. At the post-mortem examination the stomach was found to be lined with an exudative membrane, so that the stomach had the same appearance as is produced by a strong mineral acid. The histological appearances showed necrosis of the glandular layer on its surface. The submucosa was only slightly thickened, and the other coats were practically unaltered. Cultures yielded growths of the diplococcus pneumoniæ and bacillus mesentericus vulgatus. Two varieties of bacilli and Gram-positive diplococci were seen only in the false membrane, and just beneath the muscularis mucosæ in the submucous coat. A similar case of superficial ulceration due to the pneumococcus is described by Dieulafoy.[12] These two examples of pneumococcal infection are types of superficial inflammation and belong to the class of membranous gastritis. An instance of this disease is also recorded by Otto Grünbaum,[13] but here no bacteriology is recorded except that a few staphylococci were seen in the stained specimen of the false membrane, which was vomited by the patient.

GENERAL CONSIDERATIONS OF THE DISEASE.

Etiology.—That the disease is due to bacterial infection of the submucous coat of the stomach there can be little doubt, and the most obvious suggestion is that the path of infection is through some small abrasion in the mucosa, which may or may not be revealed by microscopical examination. If this be the case the disease is strictly comparable to cellulitis of the subcutaneous tissues, which is often due to infection through a defect in the skin which has healed long before the cellulitis is observed. However, under these circumstances, one would expect the lesion to occur more often than it appears to in cases of ulcer of the stomach, simple or malignant, whereas these are assignable causes in only 10 per cent. of the cases. Probably some other factors are necessary for the production of this condition, and they may be concerned with the nature of the organism, and alterations in the bactericidal properties of the gastric juice.

Sex.—Males are affected far more frequently than females, the ratio being 5 to 1 in favour of males. Unless the prevalence of alcoholic excess among males as compared with females be accepted no explanation of the male liability can be offered.

---

[3] Revue Médicale de la Suisse Romande, 1903, vol. xxiii., p. 727.

[4] Ein Beitrag zur Casuistik der Gastritis Phlegmonosae, Halle, 1904;

[5] Scottish Medical and Surgical Journal, vol. xvi., 1905, p. 236.

[6] Archiv für Verdauungs-Krankheiten, Band xii., 1906.

[7] Matthes: Inaugural Dissertation, Leipsic, 1905.

[8] Transactions of the Pathological Society, 1902, p. 282.

[9] Brit. Med. Jour., 1904, vol. ii., p. 1406.

[10] Transactions of the Pathological Society, 1906.

[11] Transactions of the Pathological Society, 1902, p. 286.

[12] Clinique Médicale de l'Hôtel Dieu de Paris, vol. iii., 1898-99, p. 219.

[13] Transactions of the Pathological Society, 1903, p. 314.

Age.—The commonest decade appears to be between 20 and 30, but cases have occurred in patients as young as 11 and as old as 70; my patient was only 13 years of age.

Alcoholic excess.—The fact that in nearly 25 per cent. of the recorded cases there is a history of abuse of alcohol lends colour to the view that the gastric insufficiency produced by chronic alcoholism favours the infection of the stomach by organisms, owing probably to the diminished bactericidal action of the gastric juice.

Dietetic errors.—These also are noticeable in the history of several cases. Actual poisoning by food or drugs may readily play a part in assisting the invasion of the deep layers of the gastric wall by micro-organisms. Pilliet[14] in 1893 produced a hæmorrhagic phlegmonous gastritis in animals by experimental ingestion of caustics such as sulphuric acid and croton oil, but the stomach wall in these cases showed no bacteria.

Pathology.—The essential lesion is a widespread inflammatory change in the submucous coat. It is greatly thickened, usually of yellowish-white colour, and much softened, so as to resemble pus. Microscopically the appearance is that of fibrin with masses of leucocytes entangled within it. This change is nearly always more marked in the pyloric half of the stomach. This may bear some relation to the anatomical situation of the oxyntic, or acid producing, cells of the gastric mucosa. The muscular coat shows varying degrees of infection and degeneration of the muscular elements. The serous coat is unaffected in a number of cases, but it may show leucocytic infiltration, especially in those cases where a secondary purulent peritonitis is present, as in the case here described. The mucosa in a large number of instances is to all appearances normal, but in others it is acutely inflamed, and raised from its bed in ridges; in others again there is atrophy of the deeper layers of glandular tubules, while in a few of the recorded cases the mucous surfaces have been pitted with tiny apertures so as to resemble a sieve, through the meshes of which pus could be squeezed from the infiltrated submucous layer. In my case there were conical masses of leucocytes wedged in between the deeper glandular tubules, and had the child lived longer the process of leucocytic infiltration might have reached the free surface of the mucous membrane. The duodenum is very rarely altered, and then only the mucosa is inflamed. Of secondary lesions, peritonitis, sero-purulent or purulent, is the commonest, and it has been found in rather more than half the cases. Pericarditis, pleurisy, abscess of the liver, and parotitis have also been observed.

Bacteriology.—The information on this point is somewhat meagre and in only a few instances have cultural results been obtained. Microscopical evidence, however, shows an organism of the streptococcus class to have been present in some 20 per cent. of the cases, and the form of inflammation is just such as one would expect to find associated with an infection of this type. Streptococci are by far the commonest causative organisms in diffuse subcutaneous cellulitis, and the isolation of the pneumococcus from the present case is not surprising, inasmuch as this organism bears a close resemblance to the streptococci, both in cultural reactions and in clinical manifestations of its activity. It should also be noted that diplococci were seen microscopically in two other cases. That the pneumococcus may produce diffuse inflammation of the mucous membrane itself is shown well by Foulerton's case, referred to above, a case which may be comparable to gastric erysipelas, whereas the cases we are dealing with are gastric cellulitis, the difference resting, not upon the nature of the organism, but the seat of its entry in the wall of the stomach. Pneumonia itself is a sufficient example of the diffuse character of the inflammation usually caused by this organism. Although peritonitis has been such a common secondary complication of phlegmonous gastritis, the nature of the organism found in the peritoneal fluid has only once or twice been recorded, and these have been streptococcal peritoneal infections. In my case the peritoneal fluid yielded a pure culture of the pneumococcus, and I leave to future investigation to show whether the stomach may not be to blame in some cases of so-called primary pneumococcal peritonitis.

Symptoms.—The most notable symptoms of the disease are epigastric pain, vomiting, and restlessness, often accompanied by delirium and some degree of collapse. These symptoms are seen at the earliest stage, but the symptoms due to peritonitis supervene so rapidly in many of the cases that the diagnosis becomes obscured. The pain is usually constant, and localised at first to the epigastrium; as a rule it is increased by pressure over this region. Local rigidity is also usually present. Vomiting has been absent in only about half-a-dozen of the recorded cases. The vomit is at first watery with the addition of mucus, then tinged with bile, either yellow or green. In no case of true phlegmonous gastritis has pus been found in the vomit, even where post-mortem examination has revealed a cribriform condition of the mucous membrane. Jaundice was present in 9 of Leith's series of cases. Fever is usually moderate, in only a few cases rising as high as 104° F. With regard to the action of the bowels, constipation is rather more common than diarrhœa, but in some cases constipation has been followed by diarrhœa. The tongue is dry and furred; the appetite is lost, but the patient usually suffers greatly from thirst. Mental phenomena are usually exhibited; they may be only represented by restlessness and mental anxiety, conditions present in nearly all the cases, or there may be actual delirium; the restlessness, as a rule, ceases only when collapse and coma supervene.

Diagnosis.—The difficulty of this is made sufficiently clear by the fact that no author claims to have diagnosed the condition, and, on only two or three occasions, has the diagnosis been made by exploratory operation. The acute onset, the local epigastric pain, tenderness, and rigidity, associated with a history, in 25 per cent. of the cases, of chronic alcoholism, appear to be the chief points which will aid us in the diagnosis, but when it is realised that the condition has to be differentiated from perforation and perigastric abscess due to ulcer or carcinoma of the stomach, from toxic gastritis, acute pancreatitis, liver abscess, and peritonitis, it will be allowed that diagnosis without exploratory operation is hardly to be expected. A history of chronic alcoholism will probably form the best guide, but the nature of the lesion will often be obscured by the symptoms of the consecutive peritonitis which is the cause of death in more than half the cases.

Prognosis.—Leith, up to 1896, found no authentic cases of recovery, and in the records of cases since that date it appears probable that such few instances as are stated to have recovered were really instances of abscess of the stomach and not primary phlegmonous gastritis.

Treatment.—One apparent contradiction to the foregoing statement is afforded by a case recorded by Bovee[15] only last year in which he describes a successful laparotomy for this disease, but a careful examination of his statement reveals the fact that the case presented a localised abscess of the stomach wall. His patient was a woman who was six months pregnant, and the abdominal exploration was undertaken on account of severe gastric pain of three days' duration, associated with vomiting and constipation. The stomach was found to be three-quarters of an inch thick in the middle of the greater curvature, and in the anterior wall of the pyloric portion there was a mass of the size of a man's fist. A long excision was made to explore the interior of the stomach and no primary lesion, such as ulcer, could be discovered; this incision was closed, while a smaller incision into the soft pyloric mass gave vent to two or three ounces of greyish pus; the abscess cavity was wiped out with gauze and a drainage-tube was inserted with gauze packing around it. The woman made a satisfactory recovery. The thickening of the greater curvature of the stomach was no doubt the customary inflammatory swelling which is met with at the periphery of most acute abscesses. Gastrostomy, or gastro-enterostomy, is suggested by Robson and Moynihan as the appropriate method of dealing surgically with the lesion, but it is a little difficult to see how the latter is going to cure a cellulitis of the stomach wall. Probably incisions down to the submucous coat, with free exposure of the stomach wall and packing off of the peritoneal cavity with gauze, left in position for several days, would offer the best chance of recovery. This is the treatment of cellulitis in the subcutaneous tissues, and if it could be effected without infecting the general peritoneal cavity it seems reasonable to hope that satisfactory results might be obtained. If the nature of the organism be ascertained the appropriate vaccine should be given, and probably these measures should be adopted even in the presence of a secondary peritonitis, together with cleansing of the peritoneal cavity by dry sponging and pelvic drainage if the amount of exudation is abundant.

---

[14] Bulletin de la Société d'Anatomie de Paris, 1893, No. 22, and Bulletin Médical de Paris, Dec. 3rd, 1893, and Jan. 17th, 1894.

[15] American Journal of the Medical Sciences, 1908, p. 662.

Wimpole-street, W.

TWO CASES OF ACUTE DERMATITIS DUE TO BICHROMATE OF POTASSIUM.

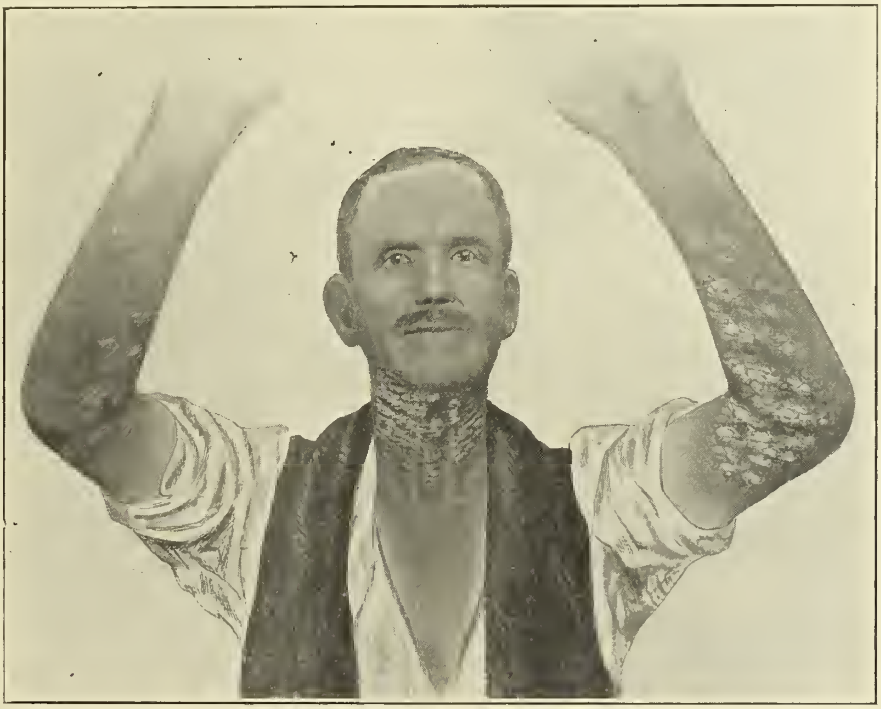
By R. PROSSER WHITE, M.D. EDIN., M.R.C S. ENG.,
HONORARY MEDICAL OFFICER, WIGAN INFIRMARY.

ONE of these cases was kindly referred by my colleague, Dr. F. Rees, to the Skin Department of the Wigan Infirmary.

CASE 1.—The patient was a man aged 57 years. For six weeks he had been engaged in the dyeing of stockings. Sometimes he would work all day in the dye-house, but more usually for a few hours only three or four days in the week. Up to the end of the fifth week of his employment he saw no rash and felt no trouble or inconvenience. His arms then began to feel rough and his hands swelled. The back of the hands also felt itchy, but not severely so, and never at any time had he the least pain or smarting even when the rash was at its height. The rash underwent many remissions and exacerbations, depending upon whether he was employed in dyeing occasionally or for a longer period. At the same time that the rash appeared on the arms he noticed it also on the under part of the chin. The whole rash slowly disappeared if he left his work for a day or two. At the end of the seventh week he noticed that the inner surface of the elbows began to weep, and as the rash spread over the whole of the face he, being anxious, came to the infirmary.

The condition of the patient was then as follows. Upon the back of the hands, both forearms and arms as high as the rolled up sleeves, the front of the chest where his shirt was open, under the chin, round the throat in a gradually narrowing line to the back of the neck, the whole of the face and back and front of the ears were covered with a bright red diffuse erythematous rash, in parts peeling in yellowish-white flakes. A few varying sized patches of healthy coloured skin were dotted about the extensor aspects of the arms and upon the forehead, especially towards the outer borders of the rash. The initial lesion appeared to be a scaly papule with a red spreading areola. At the inner sides of both elbows, particularly the left, the inflammation was most intense, and moisture was exuding freely from beneath the thin scaly crusts.

CASE 2.—A man, aged 30 years, was employed occasionally in the same room and at the same work as the patient above. This man developed no rash until after the end of three months. He never used gloves and lifted the hose out of the chrome vat with his naked hands. The rash affected his hands, arms, throat, and the under part of the chin, but never spread further; it was slightly itchy and occasionally sore. He said it never got hold of him severely, because on its first appearance he would either stay at home a few days or do some different kind of work. I saw him when he had been absent from work for nearly a week. There was then present redness of his arms, forearms, and front of the neck, with some thin desquamation; the palms of the hands were peeling in thick flakes. The palms of this man's hands were very moist, unlike those of the other man, which were very horny, thick and dry, and round the periphery of whose palms were deep cracks and fissures. One would rather expect workers in chrome to have dry hands, as I find a useful prescription for hyperidrosis is a paint of 4 per cent. solution of chromic acid.



A case of potassium bichromate dermatitis (Case 1).

Both cases readily improved, getting quite well in a few weeks, under simple, soothing treatment.

The process of dyeing.—The stockings are first washed in a dolly tub with soap and cold water and are then rinsed and dried in the hydro-extractor. After this they are placed in the dye vat, containing 1¼ pounds of bichromate of potash dissolved in 200 gallons of water, and are boiled for one hour. The stockings are stirred mechanically during boiling in the vat. The liquor is boiled by forcing jets of steam through the bottom of the vat into the liquor. When sufficiently boiled the articles are lifted out by a pole, about 5 feet in length, on to a moveable tray, which is then wheeled to the dolly tub into which they are placed, and afterwards dried. They are next placed into a second dye vat, containing 2½ pounds of logwood in 200 gallons of cold water, and are again rinsed and dried. From three to six charges of bichromate of potash are weighed by these men during the day; at these times they use indiarubber gloves.

The dangerous parts of these processes would appear to be, first, the weighing of the chrome; this is very unlikely to be the cause of the rash, as it is only done occasionally. Secondly, the continual standing over the boiling chrome vat whilst removing the stockings, and continual exposure to the steam in the dye-house. The injurious effects due to the manufacture of bichromate of potash and chrome lead dyes are well known to experts in industrial hygiene, and stringent regulations are enforced (*vide* Dr. T. M. Legge's article in Oliver's "Dangerous Trades"), but I am not aware that this particular form of dermatitis has been reported in medical literature, although I am informed that it is of common occurrence amongst unskilled workers in this particular process.

The men worked in trousers and shirt (shirts unbuttoned at the throat), and were engaged for considerable periods of the day, standing over the boiling chrome vat. Much steam was generated, and condensed as warm water upon the uncovered surface of the skin. Particles of bichromate of potash are carried up in the vapour from the boiling liquid of the vat. The inflammation is very severe at the bend of the elbow. This was particularly noticeable on the left arm of the first case. His left arm would be held during work much nearer the surface of the liquor, as with this hand he held the centre of the lifting rod, and with his right the end of it. The man wore long gloves reaching above the elbow, and the condensed solution of bichromate of potash would trickle to this part, be confined by the rubber gloves, and cause irritation by the friction of the gauntlet.

That particles of bichromate of potash are carried up by the steam is shown by the following experiments; they confirm similar ones carried out by Dr. Heise in Germany. I was not aware of his investigations until after those cited below had been performed. Bichromate of potash is not a volatile body, and therefore can only be carried mechanically in the steam. To settle this question a steam-jacketed copper pan was filled with bichromate solution within three inches of the brim, and over the same were arranged, parallel to the surface of the liquor, strips of white blotting-paper at intervals of 3 inches, ascending to the height of 2 feet from the surface of the liquor. Steam was then turned on, and the contents were vigorously boiled for one hour. Afterwards the strips of blotting-paper were examined, and it was found that they were stained in varying intensity up to the height of 18 inches, thus showing that particles of liquor were carried up with the issuing steam. This experiment was repeated three times and in each case the limit of the chromate spray varied from 15 to 18 inches. The height to which the spray can ascend no doubt will depend upon the size of the pan, rate of ebullition, local conditions of air currents, such as draughts, and the ventilation of the dye-house.

A noteworthy point in the clinical history of these two men is the very slight subjective symptoms complained of. Chrome sores are well known to be painless, and in these cases we have a severe and extensive inflammation of the skin, with very trifling feelings of irritation. Dr. Legge says that this salt in solution does not attack the unbroken skin. Generally speaking, this statement is quite correct, but the above cases prove that if associated with heat and moisture its activity is greatly increased. Any crack or sore into which the salt gains access may develop into the indolent chrome ulcer, and it is interesting in this connexion to inquire why chrome ulceration is so common an occurrence on the septum of the nose in men who work in an atmosphere of chrome dust.

Dr. Legge states that this particular "site of election is due to deficient blood-supply in this special piece of cartilage." The first symptom perceived when working with powdered chrome dust or entering a room containing it suspended in the air is itching or more severe irritation in the nose, sometimes accompanied by sneezing. The vibrissæ of the nasal openings are very efficient filters. I have shown elsewhere ("Catarrhal Fevers") that healthy nasal mucous membrane beyond the vibrissæ is sterile in man and animals. If such comparatively light things as micro-organisms can be prevented from penetrating further, denser particles will be the more readily. The orifices of the noses of workmen do not usually get carefully cleaned. Thus the continual breathing of the dust-laden air would result in the constant presence of an accumulation of chrome dust at this particular place; here also are found heat and moisture, the ideal conditions necessary to set up irritation and ulceration.

To remedy the risk of exposure no person should be allowed to bend or work over any open structure containing a boiling solution of bichromate of potassium within a distance of a few feet. Any instrument used to lift out articles from such solution should be provided with a flange to prevent the liquid running down upon the hands. Each workman who comes in contact with either the wet solution or dust ought to wash the parts exposed, and amongst others the orifices of the nose, with a reducing agent, such as a weak solution of bisulphite of soda. This should specially be enforced as a matter of routine when work is done. This precaution is considered so important in some well-regulated works that each person employed before leaving has to sign a paper to the effect that this regulation has been complied with. Greasing the skin is said to be helpful in preventing this form of dermatitis.

Wigan.

A CASE OF

SPINAL MENINGOCELE; OPERATION WHEN FORTY HOURS OLD; RECOVERY.

BY R. LEONARD LEY, M.B. CANTAB.

I SAW the following case in consultation with my partner, Mr. William Wyllys, on Sept. 14th, 1909, when he gave me the following history:—

The patient, an infant, was born on the evening of Sept. 12th, and at birth he noticed a mushroom-shaped swelling over the lumbo-sacral vertebræ which swelled up when the child cried, forming a globular mass of the size of a fives-ball. The greater part of the tumour was covered by healthy skin, but in the centre was a circular transparent portion, and on looking through it a black hole could be seen at the bottom, which he took to be the channel by which the sac communicated with the spinal canal. He covered the tumour with a pad and bandage, but as it grew rapidly larger, and was obviously in danger of bursting, he got me to see the case to judge as to the desirability of operating.

When I saw the child the mass was of the size of a tennis-ball, and the skin at the thinned edge where it joined the clear portion formed by the meninges had commenced to ulcerate. The baby, a male, was well formed and healthy. There was no deformity of the feet, sensation was normal, and the deep and superficial reflexes were normal. From the absence of dimpling and any sign of the cord when looking into the sac, I concluded that the case was one of meningocele rather than meningo-myelocele, and the absence of deformity and the normal sensation and reflexes were, I thought, against the diagnosis of syringo-myelocele. I decided to operate at once on the grounds that if left alone the baby must inevitably perish from rupture of the sac, and that if he survived an operation for removal of the sac there was no reason why he should not become a healthy and useful member of society.

At the operation Mr. Wyllys gave chloroform and ether by the open method, and the child was placed with his belly on a pillow and with his head hanging over the edge of the table, so that as little cerebro-spinal fluid as possible should escape. A nurse held the legs during the operation. I opened the sac away from the middle line, in case my diagnosis was incorrect, and having confirmed it, continued the incision to the base of the tumour and cut away the whole sac flush with the skin of the back. There was now left a large circular wound with a diameter of about 2½ inches, and in the centre was an island formed by the base of the meningeal sac about 1 inch in diameter. In the centre of this was a valve-like opening closed by a fold of the sac in its collapsed condition, through which cerebro-spinal fluid gushed with each breath of the child. This, no doubt, when the sac was tense corresponded with the round black opening my partner saw. One side of the valve-like opening was quickly stitched to the other, and then the rest of the sac was bunched up with through-and-through sutures. The cellular tissues and skin were sewn up in four separate layers.

The operation from start to finish lasted 20 minutes. The wound was dressed with iodoform gauze, as I feared cyanide would injure the skin. The wound healed perfectly and all the stitches were removed in 12 days. After the operation the child never had a bad symptom of any kind, but I kept it always with the buttocks raised above the head.

When all the stitches had been removed there was left at the site of operation a tri-radiate scar with a long vertical limb and a short horizontal limb to the right; when the child cried or struggled it bulged slightly in much the same way as the fontanelle, and the range of movement from rest, when there was a slight depression, to the fullest bulging was not more than a quarter of an inch. This bulging has gradually decreased and at the time of writing (Nov. 22nd) there is only about an eighth of an inch range of movement. The child is well and weighs 10½ pounds, and would have weighed more, no doubt, but that the mother's milk gradually failing has necessitated his weaning. Apart from the scar on his back he seems perfectly normal.

The case seems worth recording for two reasons. First, on account of the rarity of the condition, as it is apparently the most uncommon protrusion met with in spina bifida, the order being, according to Mr. J. Bland-Sutton in his book on "Tumours" (though I quote from another manual): (1) myelocele, these cases all of necessity die; (2) meningo-myelocele; (3) syringomyelocele, usually associated with club-foot and trophic phenomena; and (4) meningocele, which is the least likely to be associated with any malformations. Taking into consideration the rarity of these conditions generally, meningocele must be very uncommon. Secondly, I think the case is of interest as an instance of an infant surviving a severe operation on the second day of life, and not only surviving it, but suffering practically no shock from it.

The book treatment of this condition is varied. Most of the text-books seem to favour injection of Morton's fluid, though they admit the possibility of—(1) suppuration; (2) diffusion of the fluid; and (3) leakage of the sac, all of which conditions are likely to prove fatal. It seems to me that an operation is without the second of these risks and gives a much better chance of permanent cure than any other method. Given a patient otherwise healthy with an inguinal hernia, the orthodox treatment is to remove the sac and to close and support the aperture of exit, and not to inject Morton's or any other irritating fluid; and if this is the right treatment for one sort of hernia it should apply to all sorts of herniæ. By an open operation it is possible to remove the sac and to close and support the opening, whereas by the injection of Morton's fluid the closure of the sac is quite problematical and no support is given. In a case such as the present the only hope of saving life lies in immediate operation, as the tension and thinness of the sac render rupture imminent.

Great Yarmouth.

THROAT AND EAR HOSPITAL, BRIGHTON.—Opportunity was taken at the annual meeting of the Brighton, Hove, and Sussex Throat and Ear Hospital, held at Brighton on Jan. 22nd, to emphasise the need of the original plans for the hospital being carried out. The accommodation now so much needed would have been provided when the building was erected had funds permitted, and although now possessing suitable wards and operating theatre there is no patients' waiting-room (the hall is now used for this purpose), and the committee has to assemble in the nurses' sitting-room. The demands upon the hospital have been in no small degree increased during the past year as the result of the medical inspection of school children, and thus more than ever has the existing accommodation been severely taxed. The hospital serves large numbers from the townships and villages in the county of Sussex, but invariably the out-patients' letters are found to have been provided by Brighton and Hove subscribers. A strong appeal was made at the meeting with the hope of securing more subscribers residing in the country towns and rural districts. In 1909 the in-patients numbered 343 and the out-patients 1490. A warm tribute was paid to the honorary medical staff and the honorary dental surgeon for their excellent work.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF RETENTION PNEUMONIA.

By FRANK J. HATHAWAY, M.D. EDIN.,
PHYSICIAN TO THE KING EDWARD VII. HOSPITAL, WINDSOR.

I AM induced to report this case because it has many points of interest. First, the history is interesting in that the patient had previously suffered from, and was confined to bed with, a most irritating cough, no physical signs to account for which could be found. The abdominal pain of the distressing cough induced her to refrain from the act of coughing as much as she could, and in this way, I have no doubt, retention pneumonia was brought on by accumulation of secretion. Secondly, it is interesting because, except for the first and second days, the temperature did not rise above 99° F., while the general condition of the patient all through was excellent; the respiration-pulse ratio was quickened, and the signs of lobar pneumonia were particularly well marked and did not begin to clear up until the tenth day of the disease. Thirdly, the bacteriology is interesting in that the report on the sputum was: "Almost a pure culture of the pneumo-bacillus of Friedländer."

The patient was a strong, well-built girl, 22 years of age, unmarried, and a student in a training college. On the morning of March 21st, when she had already been for a few days under treatment, I was asked to see her again. She was not so well; her temperature was 100·6°, and her pulse and respirations were respectively 108 and 24 per minute. There had been no rigor, and there were no pleuritic pain and no definite signs in the chest. I saw her again that evening and found commencing signs of left basal pneumonia. Her temperature was 101·4°; her pulse and respirations were respectively 120 and 30 per minute. The next morning (which was the second day of the disease) I saw her again and found that her temperature was 99°, her pulse and respirations being respectively 100 and 24 per minute. I had her removed to Princess Christian's Nursing Home, Windsor. The signs of pneumonia were then well developed—namely, cough, dulness on percussion, well-defined bronchial breathing, and bronchophony. The sputum was not rusty; there was no pleurisy; there was some malaise, but she did not feel very ill. The course of the disease was then peculiar—the temperature never reached more than 99·4°, most of the time it was normal in the morning and 99° at night, the pulse ranging from 100 to 96, and the respirations from 28 to 20. Yet I never heard more typical signs of lobar pneumonia, which I was able to demonstrate to the nurses with the greatest ease.

There was no crisis. On the tenth day I found the dulness and bronchial breathing well marked, but there were fine redux crepitations on inspiration. On the eleventh day dulness was still present, but only a small area, the size of a five-shilling piece, of bronchial breathing and bronchophony, and the redux crepitations much coarser. On the thirteenth day the dulness had almost cleared up; there was no bronchial breathing, and the redux crepitations were clearing up. From this day on she made an uninterrupted recovery and was soon able to go home.

On the sixth day of the disease I sent a specimen of the patient's sputum to the Laboratories of Clinical Pathology with a short history, and in reply I received a report "that there was almost a pure culture of Friedländer's pneumo-bacillus but no pneumococci." I regret I have not the opportunity of consulting further literature, but on looking up my text-books I find practically no mention of a similar condition in Allbutt and Rolleston's "System of Medicine."

Professor W. Osler in his "Practice of Medicine" states "that the bacillus pneumoniæ of Friedländer may cause broncho-pneumonia and other affections, but is probably not a cause of genuine lobar pneumonia. ...... Czerny suggests that the relation of these ether pneumonias to abdominal operations is associated with the pain on coughing, which leads to an accumulation of secretion, and through this to retention or aspiration pneumonia." Again, Osler states, "One occasionally meets with afebrile pneumonia"; and again, "That ether pneumonia is often lobular in type."

Windsor.

AN INFANT AS A CARRIER OF ENTERIC FEVER INFECTION.

By Alice Oberdorfer, M.B., Ch.B. Vict., D.P.H. Camb.,
ASSISTANT MEDICAL OFFICER OF HEALTH, EASTBOURNE.

The following notes on a series of cases of enteric fever are of interest in that the cases were apparently due to a "carrier," and that the probable carrier was an infant of the age of eleven months, although the disease is so rare at such an age and the child had at no time definite clinical signs of enteric fever.

During the summer of 1909 about twelve cases of enteric fever occurred in and around a village of East Sussex. This epidemic was traced by the medical officer of health, Mr. H. Stott, who has kindly given me notes of the same, through milk to a polluted water-supply. The first case notified was that of Mrs. A on June 13th, 1909. Her illness commenced about May 23rd and she was removed to the isolation hospital on the day of notification (June 13th), remaining there until August 21st. During Mrs. A's stay in hospital her baby, aged eleven months, which was breast-fed until the day of the mother's removal to hospital, was taken charge of by Mrs. B, who took the child on June 13th. She commenced to be ill with typhoid symptoms about July 1st, was notified as a case of enteric fever on July 23rd, and died from that disease on August 3rd. As the baby was without anyone to look after it, a friend living in Eastbourne, Mr. C, went to the East Sussex rural district on July 23rd to bring the child back to his home, and returned to Eastbourne with it the same day, without having had anything whatever to eat or drink while in the rural district. On August 19th Mr. C, who had been sleeping with the baby, was notified as a case of enteric fever and admitted to the Eastbourne isolation hospital suffering from that disease, and on the following day his daughter, a child aged nine years, was admitted and died from enteric fever on August 29th. There was no enteric fever in Eastbourne and no local cause of the illness could be discovered. A bacteriological examination of the dejecta of the baby was made, but no typhoid bacilli were found.

The baby was now returned to the rural district, and Miss D had charge of it from August 22nd to Sept. 9th, and also did washing for the child up to Sept. 10th. About the 4th to the 9th of September Miss D sickened and was notified as a case of enteric fever on Oct. 7th.

As the baby had been ailing for some time and had had measles while in Eastbourne, on its return home it was seen by a medical man, who found the baby wasted and suffering from diarrhœa. There were, however, no other signs of enteric fever. A Widal test of the baby's blood was made on Sept. 5th and found to give a positive result.

Although it might be suggested that the cases in the rural district connected with the baby were due to the original cause of the epidemic, yet the sequence of the cases and the result of investigations made show that this possibility can be eliminated, and the Eastbourne cases confirm the deduction that the baby acted as a "carrier" and that infection from it was the cause of each case in the series.

Eastbourne.

Liverpool Medical Institution.—At the annual meeting held on Jan. 20th the following list of office-bearers and members of council was adopted:—President: Dr. Thomas Robert Bradshaw. Vice-Presidents: Mr. Robert A. Bickersteth, Dr. Richard I. Richardson, Dr. J. E. McDougall, and Mr. G. P. Newbolt. Treasurer: Dr. J. Lloyd Roberts. General Secretary: Mr. Thomas Bushby. Secretary of Ordinary Meetings: Dr. W. B. Warrington. Secretary of Pathological Meetings: Mr. Ernest E. Glynn. Librarian: Dr. W. B. Paterson. Editor of the Journal: Dr. John Hay. Council: Dr. W. T. D. Allen, Mr. A. P. Hope Simpson, Dr. A. Nimmo Walker, Mr. T. H. Bickerton, Mr. T. C. Litler-Jones, Dr. Herbert R. Hurter, Dr. Joseph Unsworth, Dr. Richard Humphreys, Dr. John Owen, Dr. A. A. Mussen, and Dr. J. Graham Martin. Auditors: Dr. Hubert Armstrong and Mr. W. N. Clemmey.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A meeting of this society was held on Jan. 24th, Dr. Samuel West being in the chair.

Dr. F. Parkes Weber showed a case of Functional Abdominal Disease accompanied (formerly) by vomiting of fæces and enemata. The patient was a woman, aged about 36 years, who suffered from frequent attacks of vomiting, abdominal pain, and tympanites. She was usually very constipated, and often complained of headache. No evidence of organic disease could be detected. During the last 14 years she had been in various hospitals in London and elsewhere, and sometimes her condition (tympanites, vomiting, abdominal pains, &c.) had been considered desperate. On various occasions laparotomies had been performed (four times altogether), and the stomach, colon, and all the abdominal viscera had been thoroughly explored; on the last occasion (in a large London hospital, August, 1909) two incisions were made, one above and one below the umbilicus, but no evidence of any organic disease had ever been detected. At intervals the patient appeared to have been able to work hard as an expert cook. The history of the case up to 1903 had been described by Dr. Parkes Weber in *Brain*, 1904, Vol. XXVII., p. 170. In the years 1896 and 1897 vomiting of formed fæces and of oil enemata or enemata coloured with methylene blue was observed, and Sir Frederick Treves had given an account of the case in the Transactions of the Medical Society of London, 1898, Vol. XXI., p. 224.—Dr. L. G. Guthrie discussed the condition from the point of view of enterospasm, and Mr. A. E. Barker gave the details of a case in which he considered there might have been a communication between the colon and the stomach.—Mr. T. H. Openshaw said that he had operated on a case in which the patient was thought to have been suffering from reflex peristalsis; there was a distinct lump along the greater curvature of the stomach and at the operation he found there was a communication between the stomach and the colon.—Dr. Parkes Weber, in replying, pointed out that an important point in regard to these cases was the appearance of scybala in the vomited fæces.

Mr. V. Warren Low showed a case of removal of Carcinoma of the Pelvic Colon 18 months after operation. The patient was now in good health and had increased in weight to the extent of 10 or 12 pounds since the operation. His bowels were now perfectly regular and he had no inconvenience of any sort. Mr. Low had examined him with the sigmoidoscope a week ago and had not found any evidence of recurrence. The sigmoidoscope passed easily for 8 inches and the lumen of the bowel, when inflated, could be inspected beyond that distance. The instrument could not be passed easily beyond that point owing to the shortening of the attachments of the bowel, as there did not appear to be any definite stricture. According to a note on the removed growth by Dr. B. H. Spilsbury the cancer formed a polypoid mass projecting into the lumen of the bowel. A separate mass of growth was situated on the opposite wall and infiltrated the mucous membrane and muscular coats along the line of incision of the bowel. It was probably the result of transplantation from the polypoid mass. The peritoneum at the back of the growth was puckered but was not invaded by growth. There was marked muscular hypertrophy of the bowel. Microscopically the growth was adenocarcinoma.

Dr. Guthrie and Mr. Arthur Edmunds showed a case of Paresis of the Left Cervical Sympathetic with Retarded Growth of the Left Upper and Lower Extremities and Wasting and Paresis of Intrinsic Muscles of the Left Hand associated with Caries of the Cervico-dorsal Spine. The patient was a girl, aged 6 years. At three years of age "paralysis" of the left arm was noticed and some time later of the left leg. Her left arm and hand were much smaller than the right. Her left hand and forearm were paler than the right. The radial pulses were equal. There was no paralysis of any muscles of the shoulder, the arm, and the forearm, but all the muscles were less developed than those of the right side. There were wasting and paresis of the intrinsic muscles of the left hand. The fingers were more slender and tapering than those of the right hand. She could not approximate the fingers; the two middle fingers were extended at the metacarpo-phalangeal joints. The middle phalanges were flexed and the distal phalanges were extended. There was dimpling between the knuckles on the left but not on the right hand. The left palm was flattened and the hypothenar and thenar regions were slightly wasted. Her left leg and foot were distinctly smaller than the right, but there was not any paralysis nor rigidity. The condition pointed to a lesion in the neighbourhood of the eighth cervical and first dorsal segments, probably tuberculous.

Sir **JOHN BROADBENT**, Mr. **WILLMOTT EVANS**, and Dr. **WILFRED HARRIS** showed cases of Syringomyelia.

Mr. **OPENSHAW** showed a case of Nævus of the Forearm and two cases of Paralysis of the Spinal Accessory Nerve after removal of the cervical glands.

Dr. **F. S. PALMER** showed a case of Weakness and Wasting of the Muscles of the Right Forearm and Hand following an injury to the elbow-joint.

Dr. **F. J. POYNTON** showed a case of Cretinism and Psoriasis.

Dr. **W. HILL** demonstrated by means of a new improved direct-vision laryngoscope a Benign Laryngeal Growth in a woman.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Glycosuria and Graves's Disease.—Treatment of Gastric Ulcer.

A MEETING of this section was held on Jan. 7th, Dr. **JOHN M. FINNY** being in the chair.

Dr. **HENRY C. DRURY** read a paper on Glycosuria and Graves's Disease, in which he drew attention to recent observations which tended to show that the combination of these two conditions was sufficiently marked to warrant the idea that there was some connexion between them. He supplemented these remarks by detailing a case recently under his care in Sir Patrick Dun's Hospital, Dublin, the patient being a girl, aged 18 years, suffering from Graves's disease, which had existed for several months, and who had recently developed diabetes with severe symptoms, including acetonuria. The patient was being kept under observation and was getting worse.—Dr. **FINNY** said that he had examined several cases of Graves's disease with relation to the question as to whether glycosuria was present or not, and it had been a surprise to him to find that a patient, who had no sugar in the urine at first, subsequently developed sugar. This patient was a girl, aged 18 years. She had been under his care and daily observation since the autumn. Sometimes the sugar was in distinct quantities; at other times it could barely be demonstrated; the previous day a quantitative analysis had shown 0·4 per cent. The case was a well-marked one of Graves's disease, with all the phenomena peculiar to the condition.—Dr. **JOHN A. MATSON** recalled a case of exophthalmic goitre of very rapid course. The urine at the time of admission to a hospital was free from sugar. About the tenth day sugar and diacetic acid were found in the urine. Just before death the sugar disappeared, but the peculiar fruity smell from the patient's breath still persisted. —Dr. **JOHN LUMSDEN** cited a case which had been under observation for four or five years. The woman had at first signs of Graves's disease. She suffered from tachycardia, when the pulse-rate ran up to as much as 200. About nine months before death she developed glycosuria and signs of undoubted diabetes. She passed up to 200 ounces of urine in the 24 hours and had a corresponding thirst. Diacetic acid was also present. She wasted rapidly and died with well-marked diabetic coma.

Dr. **JAMES CRAIG** read a paper on the Treatment of Gastric Ulcer.—Dr. **FINNY** said that the raw egg and milk treatment of Lenhartz was very valuable.—Dr. **T. P. C. KIRKPATRICK** said that, apart from any medicinal or dietetic treatment, the most important thing for the patient was absolute rest. It was even more difficult to know when permission might be given for the patient to move than to know when the diet might be increased. The condition of the teeth was a matter of very great importance. If a patient had a septic mouth there was very little use in treatment until the condition of the mouth was improved. It seemed to him, *a priori*, that rectal feeding, especially at the beginning, ought to give admirable results; but he thought that the cases would be few in which it would be tolerated for any length of time, and even where it was borne satisfactorily it was really only starvation. The most difficult of all points in connexion with gastric ulcer was to decide what should be done for patients with gastric hæmorrhage. Immediate operation had not been found satisfactory, but if they waited for a second hæmorrhage it might prove fatal.—Dr. **LUMSDEN** spoke in approval of the ice-bag.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 21st, Dr. J. W. Martin (Sheffield) being in the chair.—Dr. W. K. Walls (Manchester) was elected President and Mr. W. Fingland (Liverpool) treasurer for the year 1910.—Mr. R. Favell (Sheffield) showed a large Solid Ovarian Tumour which he had recently removed from a girl, aged 15 years, who had never menstruated. There was a little ascites. Microscopically the growth was a papillary adeno-carcinoma.—Dr. A. Donald (Manchester) and Dr. T. B. Grimsdale (Liverpool) doubted if the tumour, in spite of its microscopical appearances, would prove to be malignant. They had several years ago removed precisely similar growths from girls aged 7 and 18 years respectively, and in neither case had there been a recurrence.—Dr. W. E. Fothergill (Manchester) showed an example of Ruptured Cornual Pregnancy, consisting of a fœtus four inches long and a thick-walled ruptured cornual gestation sac of the size and shape of a large hen's egg. The patient had borne four children in the left cornu of the uterus, and then pregnancy in the right cornu led to its rupture, which demanded an "emergency" operation. The cornu was excised by a V-shaped incision, the ovary and tube being left. The patient is now again four months pregnant. Dr. Fothergill also showed the corpus of a much hypertrophied uterus removed from a woman, aged 43 years, who had not been pregnant for six years. Hæmorrhage of a month's duration had caused profound anæmia. The uterine wall was 1½ inches thick. The hyperplasia was shared in due proportion by the endometrium and the muscle, the blood-vessels of which were not more thickened than is usual in a woman of the patient's age. The glands, stroma, and vessels of the endometrium were normal. Dr. Fothergill protested against the use of the name chronic metritis in cases of this kind, which were commonly found in patients who had no history, no symptoms, no physical signs, and no pathological change indicating the existence, at any time, of any infective or inflammatory process.—Dr. Grimsdale recounted his experiences with a case of Uretero-vesico-vaginal Fistula in order to indicate the advantages of the finest silk over catgut as a suture material in such cases. The patient was a virgin, aged 24 years. Another surgeon had removed a ureteral calculus by the vaginal route, the fistula resulting. Several plastic operations in which catgut was used failed, leakage occurring on or after the fifth day. On one occasion fine Japanese silk, No. 0000, was used, and the fistula was reduced to a pinhole. An attempt to close this with catgut failed, and a large fistula resulted. Several unsuccessful operations with catgut followed. Finally, the silk was again used and with complete success. Dr. Grimsdale believes that coarse catgut tears the sodden delicate structures, whilst fine catgut is absorbed too quickly.—Dr. A. W. W. Lea (Manchester) and Dr. A. J. Wallace (Liverpool) pointed out the advantage of using Schuchardt's paravaginal incision to facilitate getting at such a fistula when the vagina is very small.—Dr. D. Lloyd Roberts (Manchester) reported a case in which a woman, aged 39 years, suffering from metrorrhagia had noticed gradual enlargement of the abdomen for 12 months. Two months before operation an attack of severe left-sided abdominal pain occurred. A very tender cystic swelling was felt on the left side of the large fibroid tumour. Torsion of the pedicle of a fibro-cystic uterine tumour was suspected. On opening the abdomen an ovarian cyst with twisted pedicle was found. The fibroid uterus was also removed.—Dr. W. Fletcher Shaw (Manchester) showed a Uterine Fibroid which had undergone red degeneration. It had been removed by Dr. Walls from a nulliparous woman, aged 39 years. The tumour was a rapidly growing one, and there had been malaise, raised temperature, and quickened pulse for two days. Progress was favourable until the ninth day, when the temperature rose to 102° F. and two days later it reached 105° and was accompanied by a rigor. Acute ulcerative endocarditis was diagnosed by a physician, and anti-rheumatic serum was used, though no culture could be obtained from the blood. She eventually made an excellent recovery. Microscopically the tumour showed an enormous number of small thin-walled blood-vessels, many of which were thrombosed, the others being engorged with blood. No micro-organisms were found by microscopical examination. Cultures could not be made owing to the presence of preservative fluid.—Dr. W. Blair Bell (Liverpool) showed a Bicornuate Uterus with a cystic ovary on one side and a fibroma of the ovary with a large cyst of the hilum on the other.—Dr. A. Stokes (Liverpool) showed some specimens of Fœtal Deformities, including one of cervical spina bifida, which had presented by the brow, and one of cyllosomus, with which had been associated hydrorrhœa for two and a half months and a partial placenta prævia.

West London Medico-Chirurgical Society.—A clinical meeting of this society was held on Jan. 7th, Dr. Neville T. Wood, the President, being in the chair.—Arising out of Mr. Keetley's lamented death, the President proposed the following motion :—

> The West London Medico-Chirurgical Society takes this opportunity of expressing a deep sense of obligation to its distinguished founder, Mr. Charles Bell Keetley, and hereby records a vote of sincere condolence with his nearest relatives.

This was seconded by Dr. Seymour Taylor and carried unanimously.—Dr. Seymour Taylor showed a case of Tabes Dorsalis with signs of Early General Paralysis, the patient being a man, aged 61 years, with a history of having had a hard sore 12 or 14 years ago, for which no treatment was given. The interesting points in the case were: (1) the coexistence of probably tertiary manifestations in a muscle, namely, a mass in the right tibialis anticus; and (2) degenerative changes (fourth stage) in the central nervous system.—Dr. J. A. Coutts showed a well-marked case of Juvenile Rheumatoid Arthritis in a child 6½ years old. All the large joints and all the first inter-phalangeal joints of the fingers and toes were involved; there was persistent pyrexia; the disease had continued for two years.—Dr. E. A. Saunders showed a case of Diabetes occurring in a girl aged 14 years. He first saw her in January, 1907, when she was admitted into a hospital complaining of polyuria and thirst. There was sugar in the urine, the specific gravity being 1032. Under a strict diet the urine became sugar-free and the thirst and polyuria disappeared. Since her discharge from the hospital sugar had been present from time to time, though she had been kept on a fairly strict diet, having only the carbohydrate present in gluten bread and the lactose of milk. At the present time she was well nourished, with a clean, moist tongue. Her skin was perhaps a little rough. Acetone and diacetic acid were now present in the urine as well as glucose. He pointed out the unusual benign course the disease had run so far in a child.—Dr. Frederick Palmer showed a case of Recurrent Carcinoma affecting the Cerebro-spinal System in a woman, aged 42 years, whose right breast had been removed four and a half years ago. The present condition began eight or nine months ago with ptosis of the right eyelid. There was now some local recurrence of the disease and besides the ptosis there was abnormality of some of the ocular muscles and of the plantar and knee reflexes.—Dr. Palmer also showed a well-marked case of Tabes Dorsalis in a man aged 41 years, whose wife was delivered of twins only four months ago.—Dr. P. S. Abraham showed a case of Mycosis Fungoides. The lesions, which included desquamating eruption and some ulcers and scars of old ulcers, were very much like those of syphilis, and the man gave a history of having had venereal disease some years ago. Dr. Abraham had nevertheless come to the conclusion that it was a case of mycosis fungoides.—Dr. Leonard Mark said that in a case of this disease which he had seen there were numerous brown patches over the trunk and limbs, and ulceration over some dozen of them.—Mr. N. Bishop Harman showed a case of Abnormal Congenital Pigmentation of an Eye. The patient, who was a child aged 2½ years, showed an almost black iris and dark-brown mottling of the sclera of the right eye, the left iris being of an ordinary brown and the sclera normal.—Mr. Saunderson showed (for Mr. L. A. Bidwell) a man from whom Mr. Bidwell had removed the Left Half of the Tongue completely. The wound soon healed, and movement had returned to the tongue.

Bristol Medico-Chirurgical Society.—A meeting of this society was held on Jan. 12th, Dr. James Swain, the President, being in the chair.—Dr. J. R. Charles read a paper entitled "Some Cases of Bacillus Coli Infection of the Urinary Tract." In it a series of cases were described in which general symptoms with pyrexia and rigors were present without obvious urinary symptoms. Bacteriological examination revealed the presence of bacillus coli in the urine. In treating the cases, urotropine had been found valuable, and serum-therapy was occasionally useful, but vaccines derived from bacillus coli had not proved reliable, their effect being only temporary and relapses occurring.—The President said that he had seen vaccines prove effective.—Mr. E. W. Hey Groves described three groups of infection of the urinary tract with bacillus coli—namely, (1) cases with general symptoms and absence of urinary symptoms such as Dr. Charles had dealt with; (2) cases with irritable bladders, usually cystitis and occasionally ulceration of the bladder; and (3) cases of advanced pyonephrosis or renal abscess. He related his experiences in operating on the last class.—Dr. E. Emrys-Roberts remarked on the acuteness of the cases Dr. Charles had described, and suggested that in acute cases treatment, especially with vaccines, was likely to prove more efficacious than in chronic cases.—Mr. G. Munro Smith dealt with the historical aspect of the subject, reminding the meeting that 15 years ago surgeons scouted the idea of infection of the urinary tract except by catheterisation, and that it was to Guyon that the credit of first insisting on the possibility of direct infection from the intestinal canal was due.—Dr. Carey F. Coombs spoke of "bacillus coli bacilluria" in children without urinary symptoms. He said that in children urotropine was generally useless, but the cases could be successfully treated by giving full doses of sodium citrate until the urine became alkaline.—Dr. J. M. H. Munro described the vaccine therapy of mixed urinary infections, particularly cases in which bacillus coli was secondary to tubercle. Injections of tuberculin should be first given and afterwards vaccine derived from bacillus coli. He pointed out that the antitoxic serums were apt to produce severe constitutional symptoms, but vaccines were free from this drawback.—Mr. C. F. Walters made a preliminary communication entitled "Jejunal Ulceration, not Post-operative," in which he directed attention to examples of catarrhal ulceration of the jejunum, sometimes terminating in perforation, a condition which appeared hitherto to have been undescribed and unexplained.—The President mentioned that he had met with such a case occurring during the puerperium.—Mr. W. Roger Williams read a paper on Malignant and Non-malignant Tumours of Bilateral Origin, in which he argued for a developmental predisposition to tumour formation.—Dr. Emrys-Roberts, Dr. J. Michell Clarke, and Dr. J. A. Nixon discussed the paper.

Windsor and District Medical Society.—A meeting of this society was held on Dec. 16th, 1909, Dr. Francis H. Hawkins, the President, being in the chair.—Mr. J. O. Skevington showed a woman who had suffered from an Unreduced Dislocation of the Shoulder for 14 weeks. Excellent movement in the shoulder-joint had resulted from the operation of excision of the head of the bone.—Dr. Norman Glegg (Datchet) showed a Horny Excrescence Removed from a Boy's Neck; it was three-quarters of an inch in length and exactly simulated a horn in appearance.—Mr. A. Douglas Crofts read a paper upon Purpura. He divided cases of purpura into two main classes—namely, (1) those in which the purpura was secondary to some well-known morbid process, and (2) those in which the purpura was the essential feature. Under the first heading cases due to infectious, toxic, senile, nervous, and mechanical causes, and also those due to chronic disturbances of nutrition were included. Each of these causes was taken separately, special reference being made to those conditions which frequently occurred but were liable to be overlooked, such as jaundice, Bright's disease, cirrhosis of the liver, and some others. The primary purpuras were divided into four groups—namely, (1) purpura simplex, (2) purpura rheumatica, or rather purpura with arthritis, (3) purpura hæmorrhagica, and (4) Henoch's purpura. A comparison between Stephen Mackenzie's well-known analysis and the one given in Osler and Macrae's latest work was made to emphasise the fact that those cases years ago which were supposed to be due to rheumatism were in reality, according to these authorities, quite distinct from that disease; and Dr. H R. Dean's cases were quoted in which an analysis of 52 cases of primary purpura was made and in none of them was a history of rheumatism forthcoming. The close connexion between urticaria, erythema, Henoch's purpura, purpura rheumatica, and angioneurotic œdema, was mentioned at some length. The differential diagnosis of Henoch's purpura from intussusception and from those cases where there was œdema into the wall of the bowel was discussed, and the paper concluded with a description of the condition of the blood in purpura.—Dr. W. M. Sadler (Slough) read notes of a case of Henoch's Purpura. Abdominal symptoms were present at an early stage of the illness and the patient subsequently underwent operation in King Edward VII. Hospital, Windsor, but the result was unsuccessful.—Dr. C. R. Elgood gave an account of the post-mortem appearances observed in the above case. —Dr. Norman Glegg related a case of Fœtal Purpura that had come under his notice.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 21st, Mr. C. Gordon Watson, the President, being in the chair.—Dr. Alexander Morison read a paper on a Study of a Case of Mitral Constriction. He considered the signs presented by it in a condition (1) of diminished cardiac force, and (2) when cardiac force was restored. In the former, two stages were discussed—namely, that in which a tachycardia of regular rhythm and without bruit was present, and that in which, with a slow heart and regular auriculo-ventricular action, a faint diastolic bruit alone was heard together with triple rhythm at the apex and reduplication of the second sound at the base. With restored cardiac force he discussed the prolonged crescendo murmur of the mitral constriction which became pronounced. In considering the nature of the triple rhythm, he expressed his belief that it was a regularly recurring extrasystole closely approximated to the preceding systole, and only associated with one auricular pulsation. As regards the crescendo murmur he suggested that the three factors which participated in its production were auricular systole, ventricular systole, and ventricular diastole, the only phases in the cardiac cycle *inactive* being auricular diastole and the last phase of ventricular systole.—Dr. W. Langdon Brown and Dr. T. Grainger Stewart took part in the debate and questioned the physiological possibility of ventricular diastole having any share in the production of the crescendo murmur.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society, held on Nov. 16th last in the Royal Infirmary, Dr. W. Ward-Smith being in the chair, Dr. F. W. Eurich read a paper on Brain Abscess, in which he especially referred to the differential diagnosis between abscess, middle-ear disease, sinus thrombosis, and meningitis, and illustrated his remarks with charts and notes of 40 cases. In conclusion he particularly pointed out: (1) the inconclusive results of lumbar puncture; (2) the unreliability of the knee-jerks as a localising symptom; and (3) the value of the absence of corneal and conjunctival reflexes.—The discussion on the paper was adjourned until Jan. 18th, when Mr. F. W. Goyder opened the discussion by reading a few notes on the Treatment of Cerebral Abscess. He described the various methods for exposing the brain according to the position of the abscess, and urged that as the greater proportion of cerebral abscesses were due to ear disease more attention should be given to running ears in school children. —Dr. Eurich asked for details from the general practitioner of the early symptoms of brain abscess, and wondered if the use of the chisel in operation had anything to do with the bad results.—Dr. A. Bronner said there were no early symptoms. They came on suddenly without any previous warning. He thought that no operation should ever be undertaken without first doing a lumbar puncture. As regards discharging ears, their importance was chiefly when they ceased discharging.—Dr. A. Manknell said there was a great difficulty in getting patients to consent to operation because there was a discharging ear and thought it best to leave them alone till there were definite symptoms of cerebral abscess.—Mr. J. Wherry Willson thought that getting consent to an operation was merely a matter of educating the public.—Dr. J. Gilmour and Dr. J. B. Lockerbie also spoke.—Dr. Bronner read notes on the treatment of certain Diseases of the Tonsils by Hartmann's and Arelli's tonsil compressors and showed the instruments.—Mr. J. Phillips read a paper entitled "A Recent Experience with a Certified Midwife," showing that in spite of their training and teaching their ideas of asepsis were still a negative quantity, and also that in spite of their dirty methods the patients as a rule had a perfectly normal convalescence.—The paper was discussed by Dr. Gilmour, Dr. Lockerbie, Dr. W. E. Heilborn, and Dr. Eurich.

Reviews and Notices of Books.

A System of Clinical Medicine, Dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners. By THOMAS DIXON SAVILL, M.D. Lond., Physician to the West-End Hospital for Diseases of the Nervous System; Physician to St. John's Hospital for Diseases of the Skin, London. Second edition, revised by the Author, assisted by FREDERICK S. LANGMEAD, M.D. Lond., Casualty Physician to St. Mary's Hospital, Assistant Physician to the Seamen's Hospital, and Physician to Out-patients at the Paddington Green Children's Hospital; and AGNES F. SAVILL, M.A. St. And., M.D. Glasg., Assistant Physician to St. John's Hospital for Diseases of the Skin. London: Edward Arnold. 1909. Pp. 963. Price 25*s.* net.

OUR review of the second edition of this valuable work appears in very sad circumstances. As all our readers know, the original and talented author met a sudden death at Algiers about a fortnight ago, where he had gone to take a well-earned holiday on the completion of his literary labours.

During the middle of the last century many text-books of medicine were written in what might be called a narrative style, the features of particular diseases being outlined and illustrated by descriptions of actual cases. This method, so admirably used by Sir Thomas Watson and by Trousseau with their charming literary style, served to render the descriptions singularly vivid and interesting, and their works have survived as medical classics. During this period, when the study of medicine was largely clinical and when the routine of the physical examination of patients were being developed, this method was of great value and assisted in the differentiation of numerous diseases, especially when combined with observations in the post-mortem room. Pathological research, however, soon tended to dominate the classification of disease, and the modern type of descriptive or systematic text-book was evolved. According to this general plan diseases were grouped together on a pathological or etiological basis and described each separately as a morbid entity, causation, pathology, morbid anatomy, symptoms, diagnosis, and treatment being discussed. The advantage of this method from a didactic standpoint is obvious. It groups together the phenomena of disease and enables a general conception to be formed of the clinical features and usual course of a given morbid condition. On the other hand, its disadvantage has frequently been pointed out—viz., that it elevates what is really an abstraction into an entity: in other words, describes the disease without special reference to the patient with the disease.

To Dr. Savill occurred the original, and as he admits the ambitious, idea of writing a text-book of medicine which should be clinical in its method, so as to enable the cardinal symptoms presented by the patient to be referred to their true cause—in other words, of following the method which must of necessity be adopted in practice, working from the effects back to the cause. Such a work, if well carried out, should obviously be of value to the senior student in the wards and to the practitioner, and should occupy a position analogous to that of a practical or laboratory handbook in other sciences, the descriptive work being comparable to the systematic handbooks. In our review[1] of the first edition we referred to the admirable manner in which Dr. Savill had carried out his idea, at the same time indicating some of its limitations, and we wished his book the success it deserved. We learn from the preface that the first edition has been out of print for nearly two years, and Dr. Savill, with the valuable assistance of his wife, Dr. Agnes Savill, and Dr. F. S. Langmead, has taken the opportunity of making certain changes in this edition. In the first place it now appears in one volume instead of two, which renders it more convenient. This has been effected without producing a too bulky volume. In the second place, two main types are now used instead of three, the smallest type being no longer employed. The arrangement and scope of the work are unchanged, and, as Dr. Savill states, clinical medicine moves less rapidly than pathology, so that no very extensive alterations have been necessary. For these reasons no detailed criticism is here needed. The subject matter appears to have been brought well up to date, and such changes as have been made are in the nature of improvements. It may, however, be of interest to indicate briefly again the manner in which Dr. Savill treats the subject, having regard to the large new audience which the volume may now command. After the introductory sections on case-taking and diagnosis in general and on the facies or external appearances of disease, each chapter is devoted to an organ or anatomical region of the body and is divided into three parts. The first deals with the symptoms which may indicate disease of that organ or region and the fallacies incidental to their detection. It also includes a brief differential account of the various causes which may give rise to them. The second part deals with the physical signs produced by disease in that region and the methods of investigating them. The third, which forms the largest part of each chapter, begins with a clinical classification of the maladies affecting that organ or region and a summary of the routine procedure to be adopted in their diagnosis, after which the individual diseases are described, the descriptions being adequate rather than exhaustive. Treatment is also discussed, or, to be more accurate, indicated in outline, and some useful formulæ are given in an appendix.

Dr. Savill's method of classification on a clinical basis facilitates reference, and should, therefore, be of great assistance to the senior student in the wards and to the practitioner in elucidating the nature of a difficult case. It lends itself more readily to a convenient and easily remembered grouping in regard to some organs or regions than others; thus the sections on the urine and on diseases of the skin may be mentioned especially as examples of its success; in other instances conditions with no very obvious relations save the possession of one common symptom are grouped together, as in the chapter on General Debility, Pallor, and Emaciation; or, again, the association may be one of simple contiguity—e.g., in the inclusion of diseases of the thyroid in the chapter on the Upper Respiratory Passages. Diseases of the nervous system are dealt with in an interesting manner, and the grouping of the various conditions is convenient.

The essential feature of Dr. Savill's book is its practical character. It aims at teaching a practical method of diagnosis, and the directions given in regard to all diagnostic procedures are thorough and often comprise useful hints. Cross references are abundant, and useful footnotes are given to journals, monographs, or text-books in which special information may be found. We can again confidently recommend Dr. Savill's book as a helpful and practical work on clinical diagnosis, and deeply regret that this renewed commendation of his work can never meet his eye.

Military Sanitation for Soldiers Serving in Hot Climates. By Major ROBERT J. BLACKHAM, D.P.H. Lond., R.A.M.C., of the Middle Temple, Barrister-at-Law, Honorary Associate of the Order of St. John; Divisional Sanitary Officer, First Division, Indian Army; Fellow of the Society of Medical Officers of Health and of the Royal Institute of Public Health; Member of the Royal Sanitary Institute. With Illustrations and Charts. Bombay: Thacker and Co. 1909. Pp. 144.

AS its name implies, this is not a work on general sanitation but a book dealing with the subject of military sanitation entirely from the point of view of the rank and file of the army. It is dedicated by permission to Lieutenant-General Sir James Willcocks, K.C.M.G., C.B., D.S.O., who is General Officer Commanding the First (Peshawar) Division of the Indian Army, and whose deep interest in every detail affecting the well-being of the soldier is familiar to all classes throughout the British Empire. The scheme of the book is based on a senior course of lectures delivered by the writer to officers and non-commissioned officers of His Majesty's troops at Devonport while he was acting as specialist sanitary officer of the Western Area of the Southern Command. These lectures have been carefully revised and adapted to meet Indian requirements, and were delivered recently to officers and non-commissioned officers at Peshawar in accordance with the scheme of garrison winter instruction promulgated by Lord Kitchener. The book is simply and clearly written in non-technical language and can thus be easily understood by non-professional readers. Good chapters on the communicable diseases of soldiers, the clothing, feeding, housing, and "the making" of the soldier are given. Professor Chittenden's researches on diets are lucidly mentioned in the chapter on feeding, the conclusion being that men in good health, who are training or undergoing military manœuvres, may without any increase of non-nitrogenous food continue to remain in good health and gain in strength and activity on one-third to one-half the amount of the nitrogenous food usually considered essential. This fact is a matter of supreme importance to military commanders, as in time of siege or during expeditions, where the amount of proteid food is limited, its knowledge may enable them acting on medical advice to formulate a dietary which would economise the food-supplies available, without any marked deterioration in the strength and activity of the troops.

Professor Chittenden's experiments and conclusions have, however, been adversely criticised by Professor W. D. Halliburton and Dr. Robert Hutchison in England, as they believe in allowing a reserve of proteid in a dietary to assist the organism to resist disease, and there is unquestionably very much to be said in favour of their view, which, we may add, was markedly proved from the dietaries of the men of the Natal Field Force under General Buller in 1899–1900 when contrasted with those operating under more limited dietaries in other areas during the Boer war. It is also pointed out that cheese is an article of diet with a higher fuel value than beef, and that it is one of the best of the common articles of food. With the single exception of occasional issues in South Africa, little or no attempt has been made to supply such cheap and excellent forms of food as cheese and oatmeal, although these articles would undoubtedly form excellent means of supplying a pleasant change from the everlasting "bully beef" and biscuits on active service. The value of sugar in the field ration of the soldier is another matter which Major Blackham thinks is not appreciated as fully as it might be in continental armies, although the British field service emergency ration uses it in combination with cocoa paste. Some sound advice is also embodied in the chapter on clothing. Munson's method of waterproofing garments with a solution of lanolin in benzine is fully described, as is also the subject of boots and socks. We would like to see the question of the provision of sleeping suits or pyjamas taken up, as under present conditions the British soldier does not have such articles issued to him and he has either to sleep in his ordinary day shirts or to purchase sleeping suits out of his pay.

---

[1] THE LANCET, April 25th, 1903, p. 1174; August 19th, 1905, p. 525.

In the chapter on the "making" of the soldier particular stress, we are glad to note, is laid on the maxim that "a man is only as strong as his heart," and that no muscular development is of any value which is obtained at the expense of an over-worked heart. This section is of particular interest at the present moment, not only to military surgeons but also to general practitioners, as it suggests the amount of cardiac damage that may ensue from the non-professional "physical culture" quacks who advertise so freely in the lay press. Under the present system of gymnastic exercises in the army recruits are trained in physical exercises, being taken easily at first, as many of the young recruits on joining come to the ranks as inveterate cigarette-smokers and from a semi-starved condition of poverty in civil life. There are other important sections dealing with the care of the soldier in camp and on the march, with sanitary organisation in peace and in war, and with the prevalence of venereal disease in the army.

The book concludes with a chapter of examination questions which have been set for officers for promotion to the rank of captain in the subject of sanitation in its application to military life, the passing in which subject is now compulsory for all branches of the service. 126 such questions have been reprinted, and references are embodied as to where their respective answers may be found in the official manual on sanitation.

The book ought to prove of great value for junior officers and others interested in military hygiene.

Forensic Chemistry and Chemical Evidence. By WILLIAM JAGO, Fellow of the Institute of Chemistry, Fellow of the Chemical Society, of Lincoln's Inn, Barrister-at-Law. London: Stevens and Haynes. 1909. Pp. 256. Price 5*s.* net.

IT is somewhat surprising that chemical literature has not hitherto included a work on forensic chemistry. There are well-known works, of course, dealing with the analytical side of toxicology or of medical jurisprudence, and with the cases in court which arise out of the proceedings taken under the Sale of Food and Drugs Act, but until the publication of Mr. Jago's most interesting volume many questions which claim an equal attention at the hands of both the chemist and the lawyer have not been treated in a collective form. Mr. Jago's book will be of considerable help to the lawyer whose knowledge of chemistry is not a strong point, and to the chemist whose acquaintance with the procedure of the courts is not a very familiar one. The former will find in its pages a clear account of the way in which the latter arrives at his results, and the chemist will readily appreciate the plain observations which Mr. Jago makes (for he is both chemist and lawyer) upon the practical working of legal processes. The book contains eight chapters, and some idea of the ground they cover may be gained from their headings, which are as follows:—I., Introductory; II., Adulteration of Food; III., Adulteration of Drugs; IV., Use or Non-use of New Manufacturing Processes; V., Use of Preservatives and Colouring Matters; VI., More Important Criminal Matters; VII., Chemical Evidence in Civil Actions; and VIII., Practice. Throughout the author gives illustrative examples and cases, quoting many a *cause célèbre* connected with food and drug law, patent law, contracts, poisons, abortion, and so forth. These chapters one and all will be valued by those who are concerned to prepare and handle chemical evidence in a way acceptable to the courts and effective from the point of view of their side of the case. The book does not, of course, exhaust what is after all a very wide subject, but it relates to a very important portion of it, and the author deserves considerable praise for the excellent way with which he has dealt with that portion. We hope he will find it possible soon to issue an extension of a work which has been so well begun.

Personal Hygiene in Tropical and Subtropical Climates. By ISAAC WILLIAM BREWER, M.D. Philadelphia: F. A. Davis Company. 1908. Pp. 130. Price $1.00 net.

THIS little work has been written for the use of foreigners residing in the Philippines, Cuba, and other portions of the tropics. Although small in scope, the sojourner in the above tropical countries will find it to contain in a concise compass all the essentials appertaining to leading a healthy life in these regions. The author at the commencement rightly observes that the failure of the white races to colonise in the tropics is due not only to the heat and intense light met with, but also to the fact that the laws of hygiene have not been observed, and how to observe these laws is the purport of this work. The extent of the British Empire and the facilities of transit make it now probable that any medical man may be consulted as to the regulation of life in any latitude or longitude on the map, so that such information, if given precisely, will find a welcome.

Imprimis, the intending sojourner in the tropics must start in good health. He should be, of course, examined with regard to this by a physician, and amongst the points to be observed as especially important are the possession of good teeth and the absence of visual defects; the individual should be vaccinated before departure, which should be so timed as to enable him to reach the tropics in the most healthy season of the year. Individuals suffering from tuberculosis, disease of the stomach and intestines, and malaria are warned against entering that region.

The author then tells us what to take with us, and enters upon the important subject of work and exercise, the latter being especially necessary; he well points out that lack of exercise is a besetting sin in the tropics. We are glad to note in the remark concerning clothing that light woollen garments should be worn next the skin, and especially that the helmet should be lined with material of a scarlet colour to interrupt the chemical rays of light which have recently been shown to play their part in sunstroke. The subject of the water-supply is next considered, and the dangers of drinking impure water set forth, inducing, as it does, dysentery, cholera, enteric fever, and other diseases. Domestic purification of water is most satisfactorily carried out by boiling for at least 20 minutes, and the process must be supervised by the individual himself and not entrusted to any native servant, who will most probably scamp the work. A wise word of caution is uttered, "Under no circumstances should the boiled water be filtered," in view of the great danger of subsequent contamination in passing through the filter; if it be filtered this process must precede the boiling; and with reference to filters the Forbes sterilizer as used in the United States Army is well spoken of. Another important point is stated, namely, that cold shower baths are not adapted for use in the tropics—the water should be tepid. The subject of food next claims attention and the use of alcohol is considered, the author advising that none should be taken except at meals, and then only to the amount of one to one and a half ounces per diem. The subjects of dwellings and the disposal of excreta are fully discussed, and as regards latrines, it is directed that each stool must be covered as soon as passed to prevent flies from carrying infection.

After these general remarks malaria and its connexion with mosquitoes are described; next yellow fever, in the prevention of which we owe everything to the Americans; filariasis, dengue, Malta fever, tetanus, dysentery, cholera, enteric fever, beri-beri, plague, tuberculosis, and the important subject of animal parasites; and the work concludes with a short account of the necessary points to be followed in the care of children. In an appendix there is given the treatment of some of the more common diseases met with in the tropics.

This little work, as we have shown, contains much valuable matter in a short space, and is strongly to be recommended to those about to visit the tropics. We have noticed only one important omission, and that is the recommendation of inoculation against enteric fever; this is important, as the evidence in its favour is by now very strong; we trust that in a future edition this omission will be rectified.

Outlines of Bacteriology (Technical and Agricultural). By DAVID ELLIS, Ph.D. Marburg, D.Sc. Lond., F.R.S.E., Lecturer on Bacteriology and Botany to the Glasgow and West of Scotland Technical College, Glasgow. London: Longmans, Green, and Co. 1909. Pp. 262. Price 7*s.* 6*d.* net.

THIS book is intended to serve as an introduction to bacteriology in all its branches, but, as we learn from the preface and subtitle of the work, special attention is directed to those subjects which are of technical or agricultural interest. The particular needs of the student of medicine are considered to a very slight extent, and the author chastens those who consider "bacteria" as "small organisms that breed disease" by pointing out that of some two thousand known species only about thirty are pathogenic to man. This part of the subject, together with the bacterial diseases of the vegetable kingdom, is disposed of in 14 pages.

In its general plan the book follows the lines of Dr. Newman's work on "Bacteria" but with less attention to matters of hygiene and rather more to certain technical processes. The early and more general chapters discuss the morphology and physiology of micro-organisms, and these subjects are dealt with in some detail and rather from the point of view of the systematic botanist. Naturally, also, since the book is intended for the use of a large variety of readers, many groups of organisms are considered which are not usually dealt with in the more restricted medical works. Amongst them are the sulphur and iron bacteria, the photogenic organisms, and the thermophilic and thermogenic groups. Somewhat special attention is devoted to the motility of micro-organisms, as the author's researches lead him to believe that organisms (cocci and bacteria) not usually considered motile can be rendered active by appropriate culture methods. The later part of the book deals with the practical applications of bacteriology, commencing with the subject of food preservation. The nitrogen-fixing and nitrifying organisms naturally occupy a prominent place, since they are of vital importance both to agriculture and to the modern methods for the disposal of sewage. In considering this subject certain researches by Paul G. Frankland are referred to; this seems to be a misprint for P. and G. Frankland. The ferments and fermentation processes which serve the practical purposes of the brewer, the distiller, the dairyman, the tanner, &c., are considered, and there is a short final section on sewage purification. Here there is a slip; the B. enteritidis of Gaertner does not ferment lactose.

The book appeals to, and will no doubt be of service to, a large circle of readers. It contains much generally accurate information. It seems to us, however, that the author has not quite decided whether he was writing a popular work or one designed for the serious scientific student, and his book is of more value as a source of information than as a means of education. It is very well printed on good paper and is of attractive appearance. There are a good many illustrations. Many of these are diagrammatic, but even in a diagram it is wise to draw to scale, as a representation of B. anthracis as a small organism compared with B. tuberculosis or the influenza bacillus is very misleading. The author constantly uses the form "flagellæ" as the plural of "flagellum."

An Introduction to the Study of the Comparative Anatomy of Animals. By GILBERT C. BOURNE, M.A., D.Sc., Linacre Professor of Comparative Anatomy in the University of Oxford. Second edition, revised. London: George Bell and Sons. 1909. Vol. I.: Animal Organisation; the Protozoa and Cœlenterata. Pp. 299. Price 6*s.*

To any of those, and unfortunately they seem to increase in number, who doubt the wisdom of including the elements of comparative anatomy as an essential subject of study for the medical student, we would recommend a perusal of this most excellent book by Professor Bourne. He has recognised that the majority of those who study comparative anatomy are destined for the medical profession, and has, as far as the regulations of examining bodies will allow, framed his work to serve as an introduction to the study of the most elementary forms of living matter. The present volume deals with animal organisation as represented by the frog, the protozoa, and the cœlenterata. The malarial parasite affords a most useful introduction to the study of pathogenic protozoa—a chapter which could not have been written nine years ago when the first edition of this work appeared. Progress of knowledge has also entailed a new account of the various changes which occur in the dividing and multiplying cell and in the maturation of the ovum and spermatozoon. The student is made familiar with the structure and the intracellular changes which are so obscure and difficult to follow in the cells of the mammalian body, but which have a diagrammatic representation in the simple unicellular organisations. The plan of the book and the accuracy of the text and figures make this an ideal text-book for medical students. On the whole we are in agreement as to the types which Professor Bourne has selected for the student's attention. In many ways the dog-fish has much in its organisation to recommend it as a typical vertebrate rather than the frog, but either type serves perfectly well. But it must also be recognised that the study of types, a form of study introduced and championed by Huxley, has also its disadvantages. The student does not obtain the conception of the animal kingdom as a whole and the relation of one form of life to another that was obtained by those of a past generation who were brought up on more systematic works. It is impossible to know all, and the selection made by Professor Bourne is as near the ideal as we may hope for.

LIBRARY TABLE.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMANN, M.D., Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine; Proctologist, Harper Hospital, &c. With 147 illustrations, mostly original, including two coloured plates. St. Louis: C. V. Mosby Medical Book and Publishing Company. 1909.

Pp. 374. Price $4.—The recent increase in the number of books dealing with the diseases and surgery of the rectum is one of the most remarkable phenomena of modern medical literature. All acquainted with this branch of surgery will agree that up to very lately there was a lamentable lack of knowledge of this important group of diseases amongst a very large proportion of those recently qualified, and this must be attributed in no small degree to the lack of teaching which then existed at many medical schools. Unless there be a member of the hospital staff who specially devotes his attention to diseases of the rectum it is remarkable how little teaching there may be on this subject, and the average candidate at a final examination not uncommonly appears to imagine that hæmorrhoids, fistulæ, and malignant disease comprise the whole of the diseases of this region. Of late years the teaching and the specielised literature have greatly improved, so that now it is competent for any student or qualified practitioner to obtain a satisfactory knowledge of the subject. One of the most important effects of this has been an extension of the number of cases in which morbid conditions of the rectum can be treated under local anæsthesia in place of the employment of a general anæsthetic. This volume is intended primarily for the use of those who desire to deal with diseases of the rectum which do not require confinement to bed; in fact, for what is called in America "office practice." All other operations are omitted. We have tested the book and are satisfied that it contains much valuable material within the scope for which it is designed. The illustrations are numerous and useful. A chapter on Dysentery has been contributed by Dr. J. L. Jelks of Memphis, Tennessee; this is well written, but hardly seems to fall within the scope of the work.

Letts's Nurses' Report Book and Diary for 1910. London: Cassell and Co. Pp. 105. Price 2*s.*—This is a handy little book containing an almanack, certain information likely to be of use to nurses, pages ruled for the chief headings of a case report, and index, and a diary showing a week at an opening. It would make a useful little present for any nurse engaged in private work.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) IODURASE; (2) BROMIASE; AND (3) LACTIMASE.

(ROBERTS AND CO., 76, NEW BOND-STREET, LONDON, W.)

(1) and (2) The association of bromides or iodides with yeast in therapeutics was suggested on account of the favourable action of yeasts in furunculosis, acne, and eczema. When ordinary beer yeast was administered to patients undergoing treatment with bromides or iodides the disagreeable effects known as "bromism" and "iodism" respectively were avoided. Acne, for example, was not manifested nor was there any appearance of mucous catarrh or gastrointestinal disturbance. The bromides or the iodides are now therefore combined with a special yeast preparation known as levurine, the resulting compounds being known as iodurase and bromiase respectively, the particular combination being due to M. Couturieux. It is said that these compounds enable the administration to be made of quite large quantities of bromide or iodide without disagreeable results. (3) M. Couturieux has also prepared lactimase which contains in a dried state, as we have found, an active and healthy lactic ferment obtained by symbiotic cultivation of the lactic-acid bacillus of a special yeast endowed with marked phagocytic properties. The preparation is reported to give excellent results in the suppression of the microbes of putrefaction in the bowel. We found that lactimase produced lactic acid readily when sown in fresh milk kept at normal body temperature.

WHITE CROSS MILK.

(THE BRITISH WHITE CROSS MILK CO., LIMITED, 34, NORTH-ROW, GROSVENOR-SQUARE, LONDON, W.)

An interesting departure in the methods of securing the distribution of a clean supply of milk, as well as of milk of standard quality, has been introduced by the above firm, and since great care is taken in the process the venture deserves to succeed. White Cross milk is a concentrated milk, the final product representing one-fourth of the volume of the original milk. The cream is first separated and in this process all dirt is eliminated. The skim-milk is then concentrated at a temperature of 140° F., during which process a current of filtered air is vigorously blown through it. This rapid current of air, of course, promotes evaporation. At the same time, the cream is similarly treated, but in a separate vessel. When the skim-milk has been reduced to one-fifth of its bulk and pasteurised the cream is returned to it in proportions according with the composition of cow's milk at the given concentration. The advantages of the process are that the concentrated milk keeps well, that it is of a definite and uniform composition, that it contains no pathogenic organisms, and finally presents a simple way of preparing milk of ordinary strength not wanting in any one of its various food elements. We have analysed the milk diluted according to directions, and the result is a milk particularly rich in fat and with a high value for total solids. It is somewhat difficult, however, to obtain a uniform sample for analysis on account of the rapid separation of the cream.

BREAD MADE FROM STONE-GROUND FLOUR.

(P. ZOLLER, 22, CARNABY-STREET, REGENT-STREET, LONDON, W.)

The loaf examined was excellent in regard to both texture and flavour. It possessed the peculiar clean flavour of bread which makes it an attractive article of diet. On analysis it showed as much as 9·26 per cent. of protein, which is considerably in excess of the amount usually found in bread. A tenth of its weight proved to be soluble in water, while the mineral matter amounted to 1·50 per cent. This bread will appeal favourably to all those who are concerned in the supply of an unimpoverished loaf—that is to say, of a loaf which possesses undiminished nutritious and digestive qualities and is pleasing to the palate.

POULAIN'S COCOA.

(H. VITRAC, GIRAUD AND CO., 12, IDOL-LANE, LONDON, E.C.)

This cocoa is remarkable for its solubility in the cup and its elegance of flavour. It is one of many examples supplied by the French of successful manufacture in regard to comestibles. Its solubility is due to some extent to the presence of an excess of mineral salts, the total mineral matter amounting to 7·45 per cent., which showed an alkalinity equivalent to 4·33 per cent. of potash. It is also very finely ground.

PIUTINOL.

(A. AND M. ZIMMERMANN, 3, LLOYD'S-AVENUE, LONDON, E.C.)

Piutinol is a clear, reddish-brown fluid containing pine oils and sulphur dissolved in alcohol and glycerine. With lead acetate it gives on heating a strong brownish-black precipitate due to the presence of sulphides. Piutinol gradually turns turbid and bright yellow when diluted with water owing to separation of sulphur. It is designed for application as a sulphur bath in the treatment of gout, rheumatism, and skin diseases. Evidence is quoted showing that a distinct absorption of sulphur takes place on immersion in a bath containing piutinol. We may point out that piutinol may discolour certain glazes used in baths, and if the glaze happened to be an alkaline one it could not be cleaned with acid, as is suggested, owing to the destructive effect of the acid on the alkaline enamel.

ISHAM CALIFORNIA WATER.

(THE ISHAM CALIFORNIA WATER CO., LIMITED, ALBION HOUSE, NEW OXFORD-STREET, LONDON, W.C.)

The natural waters of Isham, San Diego, California, have recently attracted considerable attention on account of the benefits derived from their copious ingestion in cases of rheumatism, gout, and renal disorders. According to our analysis the water contains 68 grains per imperial gallon of mineral salts. These proved to consist chiefly of salts of lime, magnesium, and sodium in the form of carbonates and chlorides. It is probable that the water possesses marked diuretic properties, and therefore the free imbibition of it is likely to give relief in uric acid diatheses.

GERIL BREAD.

(J. ALLMANN, 9, CULLUM-STREET, FENCHURCH-STREET, LONDON, E.C.)

This bread is recommended on account of its laxative properties. It shows a very rough texture and contains a considerable amount of fibre. It resembles, in short, whole rye bread, and gives results on analysis which agree with those obtained with that substance. As much as 20 per cent. of the bread is soluble in cold water, and the solution contains reducing sugars. We have seen reports which testify to its value in constipation. The bread keeps moist for a considerable time and is supplied in sealed tins.

TABLOID THYROID GLAND (STANDARDISED).

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

It is an obvious advantage to employ thyroid gland substance which has been standardised by chemical means controlled by physiological tests. The tabloid thyroid gland is stated to contain not less than 0·2 per cent. of iodine in organic combination; we have put this statement to the test and as the result of our analysis we obtained the figure of 0·32 per cent. calculated on the desiccated gland as the mean figure of three determinations. We are informed that special care is taken that the tabloid thyroid gland shall represent the whole substance of carefully selected healthy glands of the sheep, containing the essential activity of the normal thyroid gland unaltered and undiminished.

CYDER (WOODBINE BLEND).

(H. WHITEWAY AND CO., LIMITED, THE ORCHARDS, WHIMPLE, DEVON.)

When cyder is sound there can be little doubt that it affords a wholesome beverage, but it must be sound. Rule-of-thumb processes for its production are now happily disappearing, with the result that a uniform sound product is produced by those manufacturers who adopt progressive methods. Amongst the cyders which are of distinct merit and which may be trusted for their soundness of condition are those produced in the orchards at Whimple in Devonshire. They are interesting to the palate and are clean, dry beverages, with no other acidity than that normally due to the acid of the apple itself. The reputation which cyder has as a beverage suitable for, if not helpful to, gouty patients has some foundation in fact. It is well known, at all events, that the acid salts in cyder metabolise into alkaline salts in the body, and therefore cyder, if it be sound, is an alkaliser of the blood. Our analysis of the Woodbine blend is as follows: alcohol by volume, 6·55 per cent.; extractives, 2·225 per cent.; sugar, 0·91 per cent.; mineral matter, 0·10 per cent.; and malic acid, 0·201 per cent. It will be seen that the sample contains a minimum of sugar, of alcohol, and of extractives. It is neither syrupy nor sour and belongs to the light delicate class of cyder.

COLOUR-BLINDNESS.

THE CASE OF MR. TRATTLES.

THE case of Mr. Trattles, which has recently been tried by a court specially constituted by the Board of Trade, is of such far-reaching importance that it is desirable to bring a comprehensive report to the notice of the readers of THE LANCET.

The chief points in the history which leads up to the final inquiry just concluded are as follows. In February, 1904, Mr. John Trattles, then an ordinary seaman, presented himself for examination for the certificate of second mate. He passed the examination, including the colour vision test, and was granted his certificate. In July, 1905, he went up for examination as first mate and failed in the colour vision test. He appealed and was specially examined by Sir William Abney and Captain Harvey and again failed. In September, 1905, having refused to surrender his certificate as second mate, a local marine board was called to inquire into his competency. The board found that he was not incompetent to hold his certificate by reason of colour-blindness. In May, 1906, he was examined for a certificate of competency as first mate; he passed his examination, including the sight test. The Board of Trade was not satisfied, and he was offered and accepted a special examination by Sir William Abney and Captain Harvey. It took place in May, 1909; he again failed to pass the colour vision test. As Mr. Trattles still declined voluntarily to surrender his second mate's certificate a special court was constituted to investigate the case by the Board of Trade under the Merchant Shipping Act. The President of the Board of Trade nominated Sir Francis Mowatt president of the court, with Mr. J. Dickinson, stipendiary magistrate, as legal assessor.

At the examination in May, 1909, certain scientific bodies were invited to send representatives to witness the tests. Mr. Trattles was not the only candidate examined, and the representatives were not informed that there was any likelihood of their evidence being invited with regard to any individual case. Dr. W. H. Rivers, F.R.S., and Mr. J. Herbert Parsons, F.R.C.S., were present, representing the Royal Society and the Ophthalmological Society respectively. Mr. Trattles was tested by Holmgren's wools and by various spectroscopic tests, including the method with colour patches and that of simultaneous contrast. The inquiry before the special court commenced on Dec. 2nd, 1909, at the Imperial College of Science and Technology, South Kensington. Sir William Abney was examined at length. He said that Mr. Trattles was red-blind. He explained the nature of the defect and described the methods of examination. Dr. Rivers described Mr. Trattles as being red-green blind, explaining that this was a mere difference in terminology, as he agreed in all the facts of the case with Sir William Abney. Mr. Herbert Parsons confirmed the opinion expressed by the previous witnesses. Confirmatory evidence was supplied by Captain Harvey, Captain Fulton, his nautical assistant, and Fleet-Surgeon Prynn, R.N., who examines recruits for the navy in colour vision. Mr. Trattles was invited to submit to examination by Sir William Abney before the court. His counsel submitted that if he agreed it was only fair that he should be allowed to demonstrate his competency by a practical test carried out under ordinary nautical conditions at night. Sir William Abney demonstrated his methods before the court. He said: "I am only showing you the methods (of my examination), and I was not proposing to base a report on this public examination. If I had occasion to examine Mr. Trattles it would be in the laboratory with a more refined apparatus."

As regards the two previous examinations, which were held in his own laboratory, and in conditions with which he was entirely satisfied, he said that the tests and the results obtained in each case were as follows: 1. Trattles confused a white light with a bluish-green colour, and this showed that he was colour-blind. 2. When a darkish red light was placed beside white of the same brightness Trattles said that the white was brightest, and when the white was diminished to a faint glimmer he said they about matched. This showed at once that he was red-blind. 3. When a white light was superimposed on red he frequently called it green, or in the case of extreme red he would call it white. This showed absolutely that he was red-blind.

Mr. Trattles's witnesses included himself; Captain Peel, marine surveyor, holding an extra master's certificate; Captain Way, marine surveyor, holding pilot's certificates; and Captain Toms, retired master mariner, formerly a member of the Advisory Committee of the Board of Trade. Mr. Trattles as an A.B. acted regularly as a look-out man, and as a mate always took one of the night watches. Since 1905 he must have been in charge of the vessel on some 1200 nights. During that time he never had an accident, nor, so far as could be known, did he make any mistake. His experiences included navigation in the North Sea, the Baltic, the Channel, the Atlantic, the Mediterranean, and the Black Sea. His witnesses had separately taken him up and down the Mersey at night. The examination by Captain Peel was on a dark night, with moonlight; that of Captain Way on an ordinary night after the moon had risen. They were unanimous in declaring that Trattles made no mistake throughout the whole of the examination and that he appeared to be rather above the average in the range of his vision.

Sir Francis Mowatt consented to allow a practical test in the presence of representatives of the Board of Trade. The Trinity House Brethren were consulted, and they nominated Commander Wilson-Barker, R.N.R., to conduct such an examination. They were also good enough to place one of their steamers at the disposal of the court for the purpose.

The examination took place on the evening of Dec. 30th and there were present Mr. Dickinson, representatives of the Board of Trade, Trattles's solicitor, and one other person selected by him. The question referred to Commander Wilson-Barker was whether he considered Trattles competent in respect of colour vision to discharge the duties of mate, and he was authorised, if what he saw on the first night did not enable him to arrive at a definite conclusion, to continue his examination on subsequent nights.

Commander Wilson-Barker reports that the evening on which the examination took place was "calm with some haze on the horizon, but that later on the sky became cloudy and the horizon clearer; the evening was dark and the conditions most favourable for the tests, as any deficiency in colour vision would have been accentuated by the slight haze prevailing." "Trattles had no difficulty whatever," reported Commander Wilson-Barker, "in picking up the lights. He had vision of a quality equal to that of myself and of the look-out man, and he gave me a number of different lights which he distinguished accurately and without difficulty."

The Commander instanced two tests to which he attached special importance. They were: 1. On approaching the Nore Light at some distance off Trattles hesitated, questioning if it was not a reddish light. He was correct, the light being a new white light in which some ruby rays are retained as an experiment in penetrating the fog. 2. Trattles was asked to describe the colour of two stars which the Commander pointed out to him from the deck: he did not recognise them, but he correctly described one of them (Mars) as reddish.

Another witness called on Trattles's behalf was Captain Townsend of the *Kingfield*, with whom he had sailed as second officer continually since October, 1905. This evidence is of importance, and should be stated in some detail. The captain had been informed of Trattles's failure to pass the sight test in the previous July, and he stated that this knowledge had caused him a deal of uneasiness at first. "My life," Captain Townsend said, "and the crew's lives are at stake when he is on the bridge if this suggestion is true. I tested him. When the look-out man sang out a light I used to ask Trattles what light is it, and before he answered I would examine it through my binocular. In my experience, and under all conditions of weather, that man never made a mistake. The vessel was engaged in the Black Sea, the River Plate, and different trades, and Trattles during that time has been in the most difficult navigation in the world—the Channel, the Bay, the Mediterranean, and the Black Sea."

Sir Francis Mowatt, in the course of his judgment said: I next come to the experiments which Sir William conducted in my presence, and which were on the same line as those above described. In some instances I found them difficult to follow, and I was precluded from asking questions since they and their answers might have assisted Trattles to guess. I should add that the shorthand notes, taken under great difficulties and in complete darkness, do not in every instance agree with my own impressions. I gathered that when a white, a red, or a green light of the colour, size, and brightness of a ship or coast light was shown upon the screen Trattles distinguished it correctly. When two or more lights were rapidly varied or superimposed one upon the other he became confused and made some mistakes as between green and red, but these were to some extent explained by the constant flickering and variation of the light, which made it difficult to distinguish the lighter shade. Moreover, the questions were not always put very clearly to the witness, who was in a state of some nervous excitement, and occasionally failed to understand them. Nevertheless, as I have said, the tests applied show clearly that Trattles's colour vision was defective.

Finally, as to the wool test. Out of a large heap of wool skeins of different colours Trattles was shown in succession skeins of light green, pink, red, purple, and yellow (their colours not being mentioned), and he was told to select from the heap skeins of corresponding colours and of various shades of those colours. He picked them out with deliberation, and frequently with hesitation. Some he examined carefully before selecting or rejecting them. The following are the results:—

Green.—He picked seven green (two almost blue) and two browns.

Pinks.—He picked nine pinks, of which two were so dark as to be almost a brown red.

Reds.—He picked seven reds, one almost pink.

Yellows.—He picked six yellows, one almost a light green.

Purples.—He picked four purples and one blue-green.

On being shown the purple Trattles said that colour was never used at sea.

As in the case of the spectrum examination, the test clearly showed that Trattles had a defective colour vision, but I do not think that the selection of wools by daylight, as I saw the test applied, affords a conclusive test of a man's ability to pick up lights at night under the open sky, or to distinguish between the three colours in use at sea.

In conclusion he says: On a very careful consideration of this evidence I have come to the conclusion that Trattles is not incompetent from colour-blindness to discharge the duties of a mate, and I direct that his certificate as second mate be returned to him.

THE JOHN HERBERT WELLS FUND.

THE following is the twelfth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	s.	d.		£	s.	d.
Dr. J. N. Kilner	10	0	0	Mr. J. E. Williams... ...	1	1	0
Mrs. F. Hartmann... ...	5	0	0	H. A. T. F.	1	1	0
Dr. Frank Hathaway ...	2	2	0	Dr. E. H. Addenbrooke...	1	1	0

ADAMS *v.* POMEROY.

OVER £75 have now been collected for this Fund. It is confidently hoped that the small sum still required (£25) will be given quickly so that the Fund may be closed without longer delay. Contributions will be gratefully acknowledged by the honorary secretary, Dr. L. Garrett Anderson, 114A, Harley-street, London, W. During last week the following donations were received:—

	£	s.	d.		£	s.	d.
Dr. Amy Sheppard... ...	1	0	0	Dr. David Lawson, Banchory	1	1	0
A. M.	1	0	0		£11	5	0
Anonymous subscriptions	6	12	6	Already acknowledged ...	64	1	6
Dr. McNeill, Wolverhampton...	0	10	6	Total sum received	£75	6	6
Dr. D. J. Robertson, Oldham	1	1	0				

THE LANCET.

LONDON: SATURDAY, JANUARY 29, 1910.

Report of the Medical Officer of the Local Government Board for 1908-09: Interesting Figures.

THE most noteworthy feature of this report is that it takes a broader and more comprehensive view of preventive medicine than has hitherto been the case. An investigation into the prevalence of hernia is not a subject which, so far as we are aware, has up to the present attracted much attention from medical officers of health, but this fact is in itself obviously no justification for abstaining from consideration of a condition which, especially in certain age groups and among certain classes, is responsible for a large amount of disability and inefficiency; and preventive medicine liberally interpreted has as much concern with the production of efficiency as it has with the prevention and limitation of a few communicable diseases; and this is surely the whole spirit of the most recent development of preventive medicine—the medical inspection of school children. Dr. ARTHUR NEWSHOLME, the principal medical officer to the Local Government Board, in his introduction to the report makes some very interesting observations upon the general death-rates of different sections of the community, and he prefaces his comments by pointing out the inconvenience which arises from the fact that the annual reports of the Registrar-General do not furnish the vital statistics for separate sanitary areas, those for registration counties and districts being alone given, and it is but rarely that the registration and sanitary areas coincide with one another. We have pointed out recently, in reviewing the report of the new Registrar-General for 1908, that Mr. BERNARD MALLET thinks it may in future be possible, except as regards the smaller districts, to redistribute the returns according to administrative areas, as the area of collection does not necessarily govern that of presentation.[1]

Dr. NEWSHOLME takes for consideration the provisional statistics which are contained in the Registrar-General's annual summary and which relate to 29 metropolitan boroughs, 76 large towns, and 142 smaller towns. Although these statistics relate to only 247 out of 1789, in so far as districts are concerned, they have reference in the matter of population to more than 21,000,000 of the total 35,000,000 which England and Wales were estimated to comprise in 1908. Over 16,000,000 of the total 21,000,000 spend their lives under the conditions which obtain in the 76 great towns, inclusive of the metropolis, which have each a population of over 50,000, while the remainder live in 142 smaller towns with populations ranging from 20,000 to 50,000. The general death-rate during 1908 of the country as a whole was 14·7 per 1000, while the death-rate (corrected for age and sex distribution) per 1000 of population in each instance of the 76 great towns, with London, was 15·8; of the 142 smaller towns 14·7; and among the 14,000,000 people living in the smaller urban and in the rural districts it was 13·8.[2] Having given these figures Dr. NEWSHOLME draws attention to the disparities in the death-rates amongst the 21,000,000 comprised in the metropolis and in the 217 provincial towns already referred to. Of these, 2 per cent. (about 398,000) had a death-rate—per 1000 in each case—under 10; 16·8 per cent. of 10·0 to 12·5; 33·5 per cent. of 12·5 to 15·0; 29·4 per cent. of 15·0 to 17; 18·3 per cent. of 17·5 to 20·0; and 0·3 per cent. of over 20. It is then pointed out that had the towns referred to had a death-rate of 13·8 per 1000, which was the average death-rate of the 14,000,000 people living under the conditions existing in the remainder of England and Wales, the total number of deaths in the country for 1908 would have been 33,831 fewer than was actually the case. Dr. NEWSHOLME regards this saving of life as attainable, and he draws attention to the fact that the death-rate in towns of very various sizes and having together a population of over 4,000,000 was under 12·5 per 1000. It is an admirable notion to put a concrete view of this sort before the public, and the ideal suggested raises most interesting issues as to practicability and cost. We shall doubtless see the subject discussed in fuller detail in subsequent annual reports, and a differential analysis will be made of all the causes of death in the several groups alluded to. It is important to remember that the figures are already corrected for age and sex distribution, and thus that one important statistical fallacy has been removed. The difficulty in the fascinating study of death-rates is to ascertain to what extent the differences are due to purely social conditions and to what extent they are attributable to conditions which may be fairly regarded as within the scope of public health. Probably it will be found practicable to study the precise conditions existing in certain typical towns of each class by way of securing some sort of standard data; while as regards distinction between purely social and purely public health influences is it not impossible to draw any hard and fast lines, for are not these factors inextricably bound up with one another? But is it not true also that among the most potent social forces of the present day is that which is exercised through the agency of sanitary reform?

Dr. NEWSHOLME makes a somewhat similar comparison with reference to infantile mortality-rates, and, dealing with the same populations as before, he shows that 6·2 per cent. had an infantile mortality per 1000 births of 90; 9 per cent. of 90 to 100; 12·7 per cent. of 100 to 110; 8·8 per cent. of 110 to 120; 11·6 per cent. of 120 to 130; 15·5 per cent. of 130 to 140; 20·3 per cent. of 140 to 150; and 15·9 per cent. of over 150; and he draws attention to the fact that if the same rate of infantile mortality as obtained in the rest of this country prevailed amongst the 21,000,000 to which the above figures relate there would have been 9959 fewer deaths than actually occurred. That the high infantile mortality which at present exists in many parts of the country can be very substantially reduced is a question which admits of no doubt whatever; and the work of Dr. E. W. HOPE, who found in Liverpool that the *personnel* of the parents was a very dominant factor in promoting or reducing infantile mortality, holds out promises in this direction. The Notification of Births Act—a measure which the medical profession can, for obvious reasons, be only half pleased with—and the systematic employment of tactful and well-trained health visitors, will assist in the performance of these promises. And as to both these points, the report before us contains some instructive details. Of the total population of 21,000,000 dealt with above, districts comprising a population of nearly 13,000,000 have already adopted the statute in question, and in those districts which have done so there are at work some 115 health visitors. In the near future this number will no doubt undergo great expansion, more especially as, through the teaching of hygiene in schools and the work of medical inspection, the enormous importance of preventive medicine becomes more fully realised by the public.

---

[1] THE LANCET, Jan. 1st, 1910, p. 39.

[2] Compare provisional figures for 1909 on p. 326.

We refer now only to one more point dealt with by Dr. NEWSHOLME in his interesting report, and that is the manner in which enteric fever has behaved in Nottingham and Leicester respectively, for most important general lessons can be drawn from this comparison. Both towns some years ago possessed two features in common: a conserving system of excrement disposal and a high death-rate from enteric fever. Nottingham has made but slow progress in the adoption of the water-carriage system; in Leicester the progress has been rapid. As regards enteric fever, the death-rate in Nottingham is still high, while that in Leicester has undergone a very marked diminution. Dr. PHILIP BOOBBYER, the medical officer of health of Nottingham, has for many years past drawn attention to the association between enteric fever and houses furnished with midden-privies or pail-closets as compared with those supplied with water-closets, but his appeals have met with only a very partial response; and as to the history of these two towns Dr. NEWSHOLME writes: "A gigantic experiment has been performed on these two communities under circumstances which enable fairly trustworthy comparison to be made; and at the present time it remains, then, that in Nottingham a large number of deaths from diarrhœa and from enteric fever are occurring year by year which would cease to occur were this city in every part of it to adopt, like Leicester, a more cleanly system of disposal of excremental matter." We are glad to hear that during 1908 the Local Government Board communicated with various urban sanitary authorities urging them to use the powers which they possess for the conversion of conservancy systems into water-carriage systems; and in next year's report we are promised some valuable data as to the rapidity of conversion which has taken place in different towns. Many other matters of interest in the report will be discussed further in our columns.

The Difficulties of Dispensing.

AT the conclusion of an inquest held on Jan. 4th at Fulham the jury asked the coroner to lay the facts of the case before the notice of the Home Secretary, "in order that legislation providing for a distinctive form of bottle might be brought about." Regulations as to the methods of storing and dispensing poisons have been in existence more than 40 years. They were framed by the Pharmaceutical Society, with the consent of the Privy Council, and under an Act of Parliament it is an offence to fail to comply with those regulations. The regulations are in all cases applicable to the shops of dispensing chemists, but not to all medical practitioners of medicine who may happen to dispense drugs. For Section XVI. of the Pharmacy Act, 1868, as all our readers know, exempts from the first 15 sections of the Act any "legally qualified apothecary," while shortly after this Act was passed, the question having been raised whether medical practitioners other than Licentiates of the Society of Apothecaries were comprehended by these words, in order to make the matter perfectly clear, an amending Bill was introduced into Parliament and passed in 1869. The introduction of this Bill was mainly due to THE LANCET, and its provisions specifically exempted all medical practitioners registered at the time of the passing of the Act, and those registered subsequently, who in order to obtain diplomas shall have passed an examination in pharmacy. It is clear, therefore, that those practitioners are exempted from the provisions of this Act who are Licentiates of the Society of Apothecaries, who became registered before August 11th, 1869, or who have become registered since that date but have passed an examination in pharmacy. There are comparatively few practitioners who dispense their own medicines who have not passed such an examination.

There are therefore few practitioners amenable to the restrictions of the Pharmacy Act; but this fact in no way lessens the obligation of medical men who dispense to carry out the same methods of safety to the public as if that Act was obligatory upon them. All poisons should be properly stored and bottled, and no poisonous preparations for external use should be issued to patients in any but proper poison bottles. But if the law imposes little "legal" responsibility on practitioners in the important matter of dispensing poisons, it imposes none in the more difficult and responsible duty of writing prescriptions. And while the medical man has direct responsibilities with regard to dispensing, he has also indirect ones of equal importance. He has to prescribe many poisons, and it is his duty to do so with all care and attention. Though there are traditional methods and forms for writing prescriptions, the former have become of late years too much neglected and the latter too much abbreviated. We received some time ago a paper upon the subject from Mr. DONALD MCEWAN, read by him before the Pharmaceutical Society of Great Britain, containing many points bearing on this very situation upon which comment may be useful to our readers. The relationship between the prescriber of a formula and its dispenser should never produce any difficulty, but it is obvious that occasionally this does happen, and the question arises first what ought the dispenser to do. As an example, if an unusually large dose of some drug is ordered without any statement or indication that the dose is unusual, should the dispenser merely take a careful note of the prescription, with a special comment, dispense the drug as ordered, and await what may prove to be a catastrophe? Undoubtedly, if possible, the druggist should communicate with the prescriber, even at the risk of exciting suspicion in the mind of the patient or his friends, for it is unquestionable that the prescriber should indicate in some way that he has a good reason for ordering an unusual dose. This may be done in various ways, as by underlining the drug and dose, or by adding "(*sic*)" in brackets or by a footnote. It would undoubtedly be better if some uniform practice in this respect were adopted, and no better method could be employed than a short footnote. The dispenser may not be able to communicate with the physician—he may not even know the latter's name. Many prescriptions are only signed with initials, and have no address stating where the prescriber lives. Both these omissions ought to be avoided; all prescriptions should, in our opinion, be signed in full and the address of the signer given, unless the paper bears the patient's address, when, of course, the prescriber can be readily traced.

All pharmacists will probably agree with us that when it is absolutely necessary to modify a prescription the dispenser should exercise his own judgment in doing so, but that he should, if possible, communicate with the writer of it. We think that in most cases the medical practitioner will welcome this attention to his interests rather than resent it as an interference. The prescriber should remember that the pharmacist who refers back a prescription is following a safe and prudent course in the interests of everyone concerned. The discretion of the dispenser must, however, be carefully restricted, and there is no doubt that this point is clearly and honourably recognised by pharmacists. On the other hand, all medical practitioners should recognise with equal force the fact that the responsibility for a prescription rests ultimately with them, and that if a prescription presents doubt or difficulty that doubt or difficulty should be cleared up at the time of writing the prescription. Serious mistakes in prescriptions are rare, but possibly no one is such a good judge of their frequency as the dispensing chemist, who is usually a discreet person and holds his tongue. In Mr. McEwan's paper is a collection of instances which have come under his personal cognisance, and certainly do not reflect great credit on the devisers of the prescriptions; but these instances are not sufficiently numerous to be alarming, though individually they would cause embarrassment when they occurred. We can only repeat what we have said above—the responsibility of prescribing is a very serious one, and no practitioner should ever forget this. Hurry and flurry when prescribing should be avoided, and carelessness is a crime.

The Water-Supply of Warminster (Wilts).—The new water-supply for Warminster was formally opened on Jan. 20th in the presence of a large gathering.

Colour-Blindness and the Board of Trade.

For long past there has been agitation in the medical world against the methods adopted by the Board of Trade in the examination in colour vision of candidates for certificates as master or mate in the Mercantile Marine. Most of the strictures have been passed upon the scientific methods adopted. Whether these are fundamentally erroneous or are wrongly applied may be left out of discussion for the moment. The case of Mr. John Trattles, of which we give an account in the present issue of The Lancet, proves conclusively that there is serious fault somewhere. Mr. Trattles is a seaman of exceptional ability, who has proved his superior capacity in the technical details of his profession by passing the examinations for second and first mate after serving in the forecastle as an ordinary sailor. His colour-vision has been examined on six occasions during the last six years; on three occasions he passed and on three occasions he failed. As the *Shipping Gazette*[1] says: "Any system which keeps a man on tenterhooks for four years as to whether he will be flung out of his profession and made to join the crowd that loafs on the Thames Embankment stands wholly condemned. We clearly ought not to fling a man about from tribunal to tribunal, until, declaring him first to be colour-blind, then to be otherwise, and then to be colour-blind again, we run the risk of throwing him off his mental balance altogether." The *Shipping Gazette* goes on to discuss, or rather to ridicule in highly sarcastic fashion, the scientific evidence given by Sir William Abney and others before the special court. It accepts as infallible Sir Francis Mowatt's opinion that the selection of wools by daylight, as he saw the test applied, does not afford a conclusive test. It records its respect for the lantern test if properly applied, but not for Sir William Abney's method of application. Much stress is naturally laid upon the "practical test" conducted by Commander Wilson-Barker. We should have thought that the expense of this test might have been avoided in the face of the overwhelming evidence that Mr. Trattles had for many years acted as look-out man and second mate without mishap. As those competent to judge realise quite well, such a test is of no value unless carried out in atmospheric conditions which would render it highly dangerous to many lives. The *Shipping Gazette* draws two conclusions from the inquiry. One is that it "sounds the death-knell of the vicious system of wool-testing, even in its 'improved' form." The other is that "the whole question of sight-testing must be put on a higher plane." The first conclusion is controversial and need not be discussed at present. With the gist of the second we are in cordial agreement, though we think that it will be found that the weak spot is rather the system of examination and the mode in which it is conducted than the actual tests themselves. The *Shipping Gazette* very rightly says: "What is obviously a medical subject must, at least to some extent, be regarded as such. Mr. Churchill admits that no oculist or medical man is included among the officers conducting these tests."

---

[1] Shipping Gazette and Lloyds' List, Jan. 12th, 1910

The subject is one of far greater difficulty and complexity than the *Shipping Gazette* and laymen in general realise, but the feeling must be unanimous that in so serious a question, involving the safety of numberless lives, the present anomalies cannot be permitted to endure. Like so many physiological problems, those presented by colour-blindness demand an extensive knowledge of physical facts, and it is imperative that those who conduct the examinations, whether primarily physiologists or physicists, must have acquired that competent knowledge of physiology and physics which is more likely to be found in the physiologist than in the physicist, but even then only after the devotion of special study to the particular subject. In our opinion the whole question should be referred to a Royal Commission or to a committee of the Royal Society, upon which physiologists and ophthalmologists who have given special attention to the subject should be adequately represented. Among the duties of such a committee would be the re-investigation of tests for colour-blindness with a view to selecting those most appropriate to the end in view, and the reorganisation of the examinations to ensure the efficient carrying out of the tests. It would then be seldom, if ever, necessary to have recourse to a court of law to adjudicate on what is a purely scientific question.

Annotations.

"Ne quid nimis."

THE RESEARCH DEFENCE SOCIETY.

WE publish in another column a letter signed by Lord Cromer, the Hon. Sydney Holland, Dr. F. M. Sandwith, and Mr. Stephen Paget, respectively President, chairman of committee, honorary treasurer, and honorary secretary of the Research Defence Society, which sets out briefly the work accomplished by the society during the past 12 months. We hope the medical profession will read this studiously moderate communication, for it proves the established position of the society and its activity in the defence of scientific workers upon whose efforts much of our medical progress will depend in the future, as it has depended in the past. We know from frequent communications which we receive on the subject that members of the medical profession deeply resent the accusations of cruelty which are brought against many of those engaged in scientific research. All these should support the Research Defence Society by their subscriptions, and use their voices among their patients to increase the large number of persons, medical and lay, who are resolved to defend the cause of science from the malice or inaccuracy of the faddist, never more difficult to deal with than when reinforced by the amiable convictions of the humane sentimentalist.

ACCIDENTS IN FACTORIES AND WORKSHOPS.

AT the meeting of the Royal Statistical Society on Jan. 18th a paper was read by Mr. H. Verney, one of H.M. factory inspectors, on the reported accidents involving fatal or bodily injury to workers in factories and workshops. It appears from a table in the appendix to the annual report of the chief inspector of factories for the year 1907 that the annual reported number of this class of accidents increased from 8211 in 1890 to 124,325 in 1907; of the latter number 1179 were fatal accidents. The main object of the paper was to throw light on this startling increase in the number of those reported accidents during the 18 years dealt with in this table. It was pointed out that the provisions dealing with such accidents in the Factory Acts of 1891, 1895, and 1906 were far more comprehensive than those in the preceding Act of 1878. Not only were many additional non-fatal classes of accidents made reportable by the more recent Acts, but reports were also, for the first time, required from the occupiers of docks, wharves, quays, warehouses, and certain laundries; the reporting of such accidents was also made compulsory on the occupiers of factories, workshops, &c., with liability to penalty for omission to report. The number of factory inspectors was increased, moreover, from 88 in 1894 to 200 in 1908, and prosecutions for failure to notify accidents were frequently instituted throughout the period under notice. The increasing liberality and general extension of the provisions in successive Workmen's Compensation Acts, more especially in the Act of 1897, have without doubt also greatly tended to increase the number of reported accidents. During the period under review there was, too, a marked increase of activity in trade, and of both the number and the proportion of the population exposed to risk of accident in factories, workshops, &c., through the decline of home industries and the substitution of machine for hand labour. These were some of the causes referred to in Mr. Verney's paper in explanation of the great increase in the number of reported accidents in factories and workshops between 1890 and 1907. If these several causes do not entirely account for the increase of reported accidents, it is at any rate obvious that the official crude figures, which served as the basis of this paper, should not be accepted as affording trustworthy evidence of real increase in the proportional number of preventable accidents, and still less of any increasing neglect of due care for the safety of workers in factories and workshops.

A MEDICAL EXAMINER IN PHYSICS.

THE coördination of the pre-clinical and clinical studies of the medical curriculum is the order of a day which is in revolt against the multiplication of special studies in our medical schools. When it has been finally decided that the student cannot be turned into a complete chemist, physicist, biologist, pharmacist, anatomist, physiologist, obstetrician, physician, and surgeon within the space of five years, the question at once is raised whether it is desirable that the preliminary subjects should be taught by specialists, each convinced of the supreme virtue of his own particular brand of "leather," or whether they should be handed over to practitioners of medicine having special knowledge of one or other of the preliminary studies and able to judge of its application to the main business of the medical student's labours. Not so very many years ago it was almost the invariable custom at the hospital schools for one of the physicians to take charge of the physiological department in the same way as in most schools the study of anatomy is still presided over by one of the surgeons, although in the universities the professors of anatomy and physiology have usually specialised exclusively in their own sciences. The advantage of using the special teacher with full knowledge of his subject, able to demonstrate the principles of that subject with assurance and a ripe faculty of illustration, is very considerable, but the old plan of science teaching by men actively engaged in clinical work had its merits. The advantages of such teaching must at any rate be very great when it is given by a practitioner really competent to undertake it, and knowing at first hand the exact principles which will have most bearing upon the after-studies of the men under his charge. But there is a middle way by which an active practitioner of medicine may influence the preliminary studies without actually teaching them, and that is by examining students in them. This excellent middle way, we are interested to see, is to be put into practice in Edinburgh in the subject of physics. Dr. Dawson Turner has been appointed an examiner in medical physics in Edinburgh, where one examiner has hitherto examined in experimental physics for degrees in arts, science, and medicine. To examine is not the same thing as to teach, but we think that Dr. Turner's appointment is a compromise which those who would like to see a return to the old system may view with pleasure, for where examiners lead teachers are bound to follow, so that the innovation is one which may have a very salutary influence upon the physics classes for students in the Edinburgh Medical School. Doubtless, the General Medical Council will watch the experiment, and should it prove successful the Council may think well to consider whether the examining boards for the preliminary sciences in this country might not be strengthened by the addition of medical assessors, if not of actual medical examiners, who would veto the setting of certain questions such as have before now most unfairly tried our medical students.

PIPE, CIGARETTE, AND CIGAR.

THE question as to which of the three forms of smoking, the pipe, the cigarette, or the cigar, introduces the greatest proportion of nicotine into the smoker's system has never obtained a completely decisive answer, although it has received considerable discussion from time to time. At one time it was freely asserted that the tobacco which contained the highest amount of nicotine necessarily tended to be the most injurious, no matter in what form it was smoked, but we now know that the form of smoking plays an important part. There was a theory that not in all three cases was the original nicotine in the tobacco conveyed as such to the mouth; sometimes it was destroyed by effective combustion, while at other times pyridine was responsible for toxic effects. According to this theory, which was all on the right track, the cigarette was least harmful, because the tobacco along the thin paper wrapper was exposed freely to the air, and as a consequence the tobacco was well burnt and all nicotine was destroyed. Against this it was held that in such a case one poison disappeared only for another one to be elaborated, and carbon monoxide was found in marked quantity as a poisonous constituent of cigarette smoke. As a matter of fact, carbon monoxide is invariably found in all tobacco smoke, and that circumstance should be sufficient to warn all smokers against inhaling it persistently. Theories as to what happens in the combustion of tobacco in the various ways it is smoked next took into account the extent to which condensation products were formed and retained in the tobacco. The most effective condenser, of course, is the pipe, and there can be little doubt that owing to the length of the stem a comparatively small proportion of these condensation products reaches the mouth. In the cigar, on the contrary, the condensing process has a tendency to travel throughout the cigar; at all events, as the cigar gets shorter the condensed product area gradually reaches the mouth and eventually the products are conveyed there by the heat of the burning end. It has been said by connoisseurs that no cigar is worth smoking after one-half of it has been consumed, which seems to be a practical realisation of theoretical considerations very suitable for application by millionaires. Again, a cigar that has been partially smoked and then allowed to go out is decidedly unpleasant when re-lit, owing doubtless to the spread of condensation products to the mouth end. In the case of the pipe, the burning area is always in the same place; it never comes nearer the mouth, and therefore the probability is that the condensation products do not reach the mouth in, at any rate, appreciable quantities. In the cigarette the condensation products eventually reach the mouth, but there is in this case less chance of condensation products forming since the combustion is unhampered, the tobacco being freely in contact with the air. The question of moisture, however, must not be left out in these considerations, for it is obvious that damp tobacco will form condensation products more readily than dry tobacco. It is probable therefore that a dry cigar or cigarette gives off less poisonous products than a damp one does, but not everyone smokes from choice a new cigar or an old cigarette. It is reasonable to conclude that the amount of nicotine reaching the mouth does not necessarily depend on the amount in the tobacco, but on the form in which it is smoked. In drawing this conclusion regard must, of course, be had to the quantity of tobacco smoked, but if the conclusion is correct, the pipe would come first as the least harmful form of tobacco smoking, then the cigarette, and lastly the cigar.

TETANUS BACILLI IN LYMPHATIC GLANDS.

TETANUS is generally considered one of the best examples of a pure toxæmia in which the infection is localised in the wound. Dr. J. M. Anders in Osler's "System of Medicine" says that "the bacilli can be isolated from the wound in which they develop but do not enter the circulating blood." In the *Boston Medical and Surgical Journal* of Dec. 23rd, 1909, Dr. C. A. Porter and Dr. O. Richardson have reported two cases in which the bacilli were found in the inguinal glands after a wound of the foot. In the first case a teamster, aged 23 years, was admitted into the Massachusetts General Hospital on March 8th, 1909. A week before a cartwheel had passed over the left foot. There were gangrene of three of the toes extending to the dorsum of the foot, an ulcerated area of the size of a dollar, and lymphangitis reaching as far as the internal malleolus. The temperature was 101° F., the pulse was 110, and the respirations were 23. On March 12th the temperature had fallen, the wound was becoming cleaner, and a line of demarcation was forming. During the night the patient complained of slight pain and stiffness in the back. By 7 A.M. he could not open his mouth and there was well-marked trismus with considerable stiffness of the neck. By noon there were trismus, risus sardonicus, stiffness of the neck and anterior abdominal muscles, and some rigidity of the legs. The left inguinal glands were slightly tender and much enlarged. Through a 4-inch incision the glands were removed *en masse* and antitetanic serum was injected into the anterior crural nerve. The wound was drained with rubber tissue and loosely sutured with silkworm gut. The left sciatic nerve was exposed through a posterior incision and "filled" with serum and the wound was closed without drainage. The gangrenous toes were then amputated and the wound was curetted and cauterised with pure carbolic acid and packed with gauze saturated with balsam of Peru. The patient recovered well from the operation, but the tetanic spasms increased in severity, and on the 14th opisthotonos was extreme and the face was cyanosed. Lumbar puncture was performed, and 6 cubic centimetres of a 25 per cent. solution of magnesium sulphate were injected at 12.32 P.M. The pulse rose from 130 to 180 in 20 minutes, but fell back to 130 in half an hour. At 2.10 P.M. the muscles of the legs were becoming relaxed. At 3 P.M. the muscles of the back were relaxed, the neck could be readily flexed, and the trismus was so diminished that he could drink. But an hour later he became unconscious and in the early morning of the 15th respiration began to fail, and there was a slight return of the rigidity. Death occurred at 7 A.M., apparently from failure of respiration. In cover-glass preparations made directly from the lymphatic glands and from the amputated tissues one or two morphologically typical tetanus bacilli were found. Cultures made from the latter by the method of Kitasato after 48 hours in the thermostat gave off the peculiar disagreeable odour of tetanus cultures. Cover-glass preparations from the cultures showed numerous typical bacilli. A culture from the glands after four days in the thermostat gave the same odour and showed typical bacilli but not so numerous as in the culture from the foot. A white rat inoculated in the tail with the culture from the glands died from tetanus in 48 hours. In the second case, a boy, aged 13 years, was wounded between the first and second toes of the left foot with a rusty nail. Within 24 hours the wound was thoroughly opened and cauterised, but three days later the dorsum of the foot became puffy and on incision yielded dark grumous material. Twelve days after the injury trismus began, and on the following day there were some rigidity of the neck and anterior abdominal wall and a few slightly enlarged glands in the groins. The wound was filled with exuberant granulations and odourless pus. All the left inguinal glands were removed *en masse*, and 3000 units of antitetanic serum were injected into the internal saphenous vein. The tissues about the wound of the foot were removed and the wound was treated as in the previous case. Intramuscular injections of serum were given every two hours and recovery followed. The tetanus bacillus was proved to be present both in the glands and the tissue removed from the foot by the same methods as before. The bacillus was recovered from the rat which died from tetanus inoculated from the glands. These cases are of great practical importance, for if the lymphatic glands near a wound which causes tetanus prove to be frequently infected they, as well as the primary focus, should be eradicated.

TIMOTHY BRIGHT AND SHORTHAND.

WE have received a pamphlet written by Mr. Matthias Levy entitled "William Shakespeare and Timothy Bright." The pamphlet is an expanded edition of a note read in French by Mr. Levy at the Eighth International Shorthand Conference held at Brussels in July, 1905. At the seventh conference, held at Paris in 1900, a resolution had been passed, on the motion of Dr. Fuchs, a German delegate, to the effect that the shorthand manuscripts of Dr. Timothy Bright relating to Shakespeare and lying in the British Museum should be published. Inquiry, however, showed that Bright's shorthand MSS. had nothing to do with Shakespeare, although Bright and Shakespeare were contemporaries. Mr. Levy points out that it is probable that some of Shakespeare's plays were taken down in shorthand, and it is possible, or even probable, that the system used was that of Bright. Timothy Bright, who, says Mr. Levy, was "the first man in England who invented marks to represent words," was M.D. of Cambridge, graduating as such in 1579. His book, called "Characterie, an Arte of Shorte, Swifte, and Secrete Writing by Character," was published in 1588 and dedicated to Queen Elizabeth. Shorthand, not in the modern sense of signs expressing sounds, but in the sense of abbreviated writing known as Tironian notes, had been in use from at least the time of Cicero and probably earlier, for Tiro was Cicero's amanuensis. In somewhat later times a "shorthand" writer used to attend at the examination and the usually subsequent martyrdom of the primitive Christians, but most likely this form of shorthand was akin to the contracted writings of the Middle Ages. Bright's system consisted of 18 symbols, with four slopes for each letter, and 12 different ways of altering the base, so that each letter could represent 48 words. It was necessary for the student to learn by heart the signs for 537 words. Mr. Levy points out that since 1588 the medical practitioner and the shorthand writer have been associated, and instances Boerhaave and Van Swieten. He also quotes from our columns, April 23rd, 1825, some remarks as to the value of shorthand to medical students, and concludes with a reference to the Society of Medical Phonographers. From the institution of this society onwards we have frequently expressed our sense of the usefulness of shorthand to medical men.

AN OFFICIAL PLEA FOR POPULAR COÖPERATION IN THE PREVENTION OF MALARIA IN INDIA.

WE have repeatedly remarked that whatever care be exercised in the framing of sanitary laws and whatever vigilance be spent in their enforcement they cannot have anything like their full effect without the willing coöperation of the people for whose benefit they are framed, and the first step towards such coöperation must be of necessity education. In the promulgation of one of the very oldest sanitary codes, that of the Jews of the Exodus, we know that the education of the people in its stringent requirements was an important function of the priests, who were able to present their lessons backed with the authority of a Divine ordinance. But in these days the appeal must be made to reason and not to awe, though we are almost inclined to regret that there is no place in the religious doctrines of some of the native peoples dependent upon our rule and administration for the ritual enforcement of such prophylactic proceedings as are necessary for the avoidance of the chief diseases endemic in their countries. These reflections are occasioned by a perusal of some remarks made before the recent conference on malaria at Simla by Sir Herbert Risley, who fully appreciates the necessity for obtaining the coöperation of the people in stamping out the scourge of India that visits native and European alike. "What occurs to me," he said, "is that, when the new Legislative Councils are constituted, the non-official members might take in hand the question of malaria. There will be in every province members representing territorial areas, divisions, subprovinces, or groups of districts. I suggest that in each such area the member should form, and should himself preside over, a committee including all the leading men,—landholders, bankers, merchants, lawyers, professors and schoolmasters, journalists, doctors, in short every one of influence—and that they should initiate and carry on a systematic campaign against malaria. For each district there would be a similar committee, its president being a prominent municipal commissioner or an active member of the district board. They in their turn would see to the formation of committees in subdivisions, tahsils, taluks, whatever the local unit may be, and we may hope that in course of time the organisation will be brought down if not to the village, at any rate to groups of villages. If you ask what should they do, I would answer what could they not do? They would be in the closest touch with all ranks of the people; they could teach; they could persuade; they could do all the things that an official agency would attempt in vain. They would induce men of means to re-excavate the tanks which the piety of an earlier generation constructed; they would remind the absentee of his obligations to his ancestral village; they would initiate minor schemes of drainage; they would organise private charity for the provision of quinine, and above all they would bring home to the people that there are many simple measures which tend to avert malaria and that their only chance of escaping the disease is to carry out these measures for themselves. In such propagandism the public spirit of Indian journalists would find unlimited scope. That is a rough outline of the lines on which the committees might work. The difficulties in front of them are obvious; but I see no other way in which they can be surmounted; and I am confident that the Indian members of this conference will agree with me in regarding the question as one of the highest national importance." We are glad to see that similar views are held by various native sanitarians, and may instance a paper contributed to the Medical Congress in Bombay on the Etiology, Epidemiology, and Prophylaxis of Malaria by Dr. Syed Mohamed Varis, in which he reviews all the accepted methods of prophylaxis, laying special stress on quinine distribution, and adding: "A word must be said on education that a doctor or administrator could do nothing unless there was a willing coöperation on the part of the people. The people should be taught to appreciate the sayings of science, and it could be accomplished during school training and through the newspapers and society. Though my countrymen are educated, most of them are, however, not enlightened enough to appreciate the work of science. The diffusion of knowledge regarding the new epidemiology and prophylaxis of this infectious disease ought to be undertaken by the social reformers to contradict old prejudice." It is the bounden duty of every medical practitioner in India, be he in the British service or native-born, to instil into the communities in his charge, so far as in him lies, the great lesson of the prevention of malaria.

THE BIO-CHEMICAL STANDARDISATION OF DRUGS.

SINCE there are certain drugs which at present cannot be assayed by chemical means, it is important that the physiological method of appraising their activity should be properly appreciated. It is natural that such important drugs as digitalis, squill, and strophanthus should have absorbed the attention of pharmacologists, for these endeavour to set up physiological standards for preparations of drugs for which there is no test available that will give as true an indication of their activity as a direct observation of their reaction with living tissues. It is mainly with this group of cardiac tonics that Dr. William Martin deals, in a paper read before the Newcastle meeting of the British Pharmaceutical Conference in 1909, which has been published as a brochure. In "Some Experiences in the Testing of Drugs by Bio-Chemical Methods with Special Reference to Digitalis, Squill, and Strophanthus" Dr. Martin gives the results of his observations founded on experiments with cannabis indica, ergot, and epinephrine, before passing on to a consideration of the three drugs named in the title. Cannabis indica he dismisses in a few words and confirms the view held by another investigator that the chief cause of deterioration of this drug is oxidation of the active principle. On the subject of ergot he offers a few general remarks and shows two blood pressure tracings of suggestive interest. With regard to epinephrine—the vaso-constrictor principle of the suprarenal capsules—he explains the method of testing which he uses in the pharmacological laboratory of Brady and Martin, Limited, Newcastle-on-Tyne, where, indeed, all the experiments on which the paper is based were performed. In testing digitalis, squill, and strophanthus he considers that the most suitable method for practical guidance in connexion with a manufacturer's laboratory, and one which gives as good results as any others advocated, is that which requires that a fatal termination shall follow, within a certain time limit, the administration to a small animal of a fixed dose of the preparation to be tested. He selects frogs as the animals most suited for the purpose, and deals minutely with the precautions necessary in selecting them. He explains in detail the methods he employs in testing the effects which the various preparations have upon them and records the inferences which he draws. In concluding what is undoubtedly an important contribution to the literature of this subject, Dr. Martin refers to the suggestion that some tests of a bio-chemical nature should be included in the British Pharmacopœia and expresses the opinion that the time is not yet ripe for the introduction of tests of this kind unless they are made permissive and not mandatory. Failing the application of physiological methods of standardisation to such drugs as cannot be assayed by other means, it is obviously necessary that pharmacists should utilise their skill in selecting drugs of high quality and display great care in storing them.

CARCINOMA SUPERVENING ON TUBERCULOUS LESIONS.

HOWEVER authorities may differ as to the cause of malignant disease, on one point at least they appear to be agreed, and that is that in numerous cases some previous damage has been sustained by the part in which the new growth arises. What this may be varies much in different cases. In some it is simple trauma, as in those instances where a sarcoma develops not long after a severe injury to a bone, or an epithelioma of the tongue appears where a jagged tooth has caused a septic ulcer. Sometimes the growth appears in the scar resulting from a former wound, and so many instances of this have been put on record that all surgeons are familiar with the occurrence. Sometimes, too, malignancy may develop in a swelling produced by one of the infective granulomata. This is not at all rare with syphilitic gummata, many cases of carcinoma starting on the dorsum of the tongue having been preceded by gummatous ulcers, and the same sequence has been noticed in syphilitic ulcers of the leg and of the scalp. It is decidedly less common for tuberculous lesions to be followed by the development of malignant growths, but in the present issue of THE LANCET two writers refer to this point. Dr. J. L. Bunch mentions a case in which epithelioma supervened on a lupus vulgaris even as early as the age of nine, and Mr. C. B. Lockwood records a very interesting case in which a carcinoma of the breast was associated with tuberculous glands in the axilla of the same side. When we consider how widespread tuberculous lesions are, and that carcinoma does not frequently follow upon them, it is clear that there is no natural tendency for the one condition to develop into the other. The number of cases recorded is small, while the supervention of epithelioma on a lupus of the face is extremely rare, though lupus of the face is so common. Curiously enough, when malignancy does manifest itself in a tuberculous lesion, the result appears to be especially virulent.

THE FAILURE OF THE X RAYS IN THE TREATMENT OF HYPERTRICHOSIS.

WHEN it was discovered that exposure to the X rays causes hairs to fall out it was thought that a new remedy for hypertrichosis, which was painless and easily applied, and therefore destined to displace the tedious method of electrolysis, had been discovered. In the *Journal of the American Medical Association* of Jan. 8th Dr. May C. Rice has pointed out that this is unfortunately not true. Many patients were treated with apparent success, but almost invariably, after periods ranging from two to six months, the original growth has been succeeded by a stronger growth and this by another and still another. Nevertheless, determined operators persisted in the treatment and gave series after series of exposures in the hope that eventually a permanent cure would be produced, which was achieved in rare cases. In treating most diseases with the X rays there is the advantage that unhealthy tissues are more affected than healthy tissues, and therefore the disease can be cured with the production of only slight dermatitis, but in hypertrichosis the hair papilla which the operator desires to destroy is healthy, and therefore its destruction will require considerable exposure to the rays; dermatitis must succeed dermatitis until frequently a persistent and chronic inflammation is produced. In consequence of the selective action of the rays on glandular tissue atrophy of the sebaceous glands and hair follicles is produced while the papillæ remain. In addition, vaso-motor disturbances resulting in telangiectases and scars, which contrast with one another, are produced, causing an unsightly appearance. There is no remedy for this and time, instead of improving the condition, renders it worse from contraction of the scars. In cases of milder treatment yet sufficiently protracted to cause the hair to remain out for any length of time, telangiectases are not produced but a decidedly wrinkled prematurely senile appearance. In one case 75 exposures to the X rays had been given by an eminent dermatologist and experienced X ray operator. In another case a woman of 40 looked as if she was 60 and another undesired effect of the rays had been produced, strengthening of the downy hairs which had become black and decidedly conspicuous. This stimulating action of the rays in moderate dosage on hair growth can be utilised in the treatment of alopecia. The fact that epithelioma sometimes follows prolonged exposure to the rays must also be taken into account. Dr. Rice concludes that electrolysis is the proper treatment for hypertrichosis.

PRIMARY INFECTIVE EPIDEMIC NEPHRITIS.

ONE of the etiological problems which have to be cleared up is that of the actual causation of that large group of cases of acute and subacute diffuse nephritis in which there is a close resemblance to the clinical picture of scarlatinal nephritis, without, however, any antecedent attack of scarlet fever to explain the occurrence of the renal disorder. It seems probable that, while chill and other gross physical forces may predispose to such a lesion, an inflammation of the kidney of this type can only be excited by the presence of some appropriate infective agent in the blood stream, which is deposited in the kidney as it passes through the circulatory passages of that organ. Zannini[1] sends a short communication of the greatest interest in this connexion. After practising for some years in the neighbourhood of Brescia without seeing more than a single case of Bright's disease, he was confronted at the beginning of last year by a small epidemic of this disorder. Within about seven weeks there were 10 cases, all of them from the same neighbourhood, and many of them living in the closest proximity to each other. Practitioners in other districts saw no cases of the same type at that same time. There were six boys, two women, and two girls; the ages ranged from 5 to 38 years. The onset was acute in four instances, and in several cases there was a slight transient pyrexia. The principal symptoms were epigastric pain, dry cough, œdema, pallor, epistaxis, and urinary changes (albuminuria and oliguria, with passage of blood and casts); while in several cases uræmic phenomena, vomiting, dyspnœa, and convulsions, were noted. The duration varied from three days (in the one case ending fatally) to 28 days; in the great majority recovery appears to have been complete and absolute. Zannini refers to other similar outbreaks that have been described; the evidence as to their causation is inconclusive, and in this epidemic there is no light to be obtained as to its origin or nature apart from the fact that in most of the cases sore-throat was noted. This was not of the scarlatinal type, and though it might be urged that the cases really represented an aberrant form of scarlet fever it appears from Zannini's comments that this was not his own view.

Sir Alfred Jones, the chairman of the Liverpool School of Tropical Medicine and head of the shipping firm of Elder, Dempster, and Co., who died on Dec. 13th last, left estate valued at £674,259 gross. The bulk of the estate he left on trust for such charitable purposes and objects in England or any British possession on the West Coast of Africa as his trustees may think proper. For their guidance he indicated, among other purposes, original research of all kinds into the cause of disease on the West Coast of Africa.

WE regret to announce the death of Mr. William Warwick Wagstaffe, M.B. Lond., F.R.C.S. Eng., formerly senior assistant surgeon and lecturer on anatomy at St. Thomas's Hospital, which took place at Sevenoaks on Jan. 22nd, in his sixty-eighth year. Mr. Wagstaffe had lived for many years in retirement enforced by ill-health.

Mr. R. C. Punnett, of Gonville and Caius College, Cambridge, superintendent of the Museum of Zoology, has been elected to the professorship of biology at the University of Cambridge, recently vacated by Professor W. Bateson.

THE congratulations of the King and of the Royal College of Surgeons of England respectively have been conveyed to Mr. Edgar Jones, M.R.C.S., of Brentwood, on the recent attainment of his hundredth birthday.

PLAGUE is declining in Mauritius, 10 cases with 7 deaths having been reported during the week ending Jan. 21st.

THE MIDWIVES INSTITUTE.—The annual meeting of the Midwives Institute which took place last week, the President, Miss Wilson, being in the chair, was well attended. The announcement of the death of Dr. Stanley B. Atkinson, who had represented the institute on the Central Midwives Board for the past three years, cast a deep gloom over the proceedings. Dr. Atkinson had laboured unsparingly in the cause of midwifery nursing with a quick understanding of the needs and conditions of the work, and the midwives felt that they had indeed lost a friend. The whole assembly stood in respectful silence and passed a vote of condolence with the bereaved family. The Midwives Institute was founded nearly 29 years ago, although it was incorporated later in 1887. It was practically the first, and certainly one of the most energetic agents in the passing of the Midwives Act, and by keeping up the standard of its members has striven to raise the status of midwifery nursing. The reports of the various committees showed a large amount of work done, not only for its own members but in the cause of midwives throughout the country. The most recent effort towards a very desirable end—namely, the coördination of midwives into a more united and corporate body of workers—has taken the form of a committee of representatives, whose work it is to organise local associations in London and the country affiliated to the institute. By this means, and the meetings held in the various branches for discussion of topics connected with their work, midwives are encouraged to take an intelligent and personal interest in their calling. The chairman of the committee (Mrs. Stephen Glanville) stated that ten branch associations had already been organised, and the Liverpool Trained Midwives Association, numbering nearly 200 midwives, was affiliated. Lectures are held at the institute at regular intervals, and among the lecturers during the past year were Dr. Tom Robinson, Dr. F. J. Warwick, Dr. J. S. Fairbairn, and Dr. J. Curtis Webb.

---

[1] Rivista Medica, Milan, November, 1909.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

V.[1]

HAVING now considered the various factors which determine the resistance in the cardio-vascular system, I shall endeavour to enunciate certain fundamental principles in connexion with the engineering (if I may be allowed the word) of this system. Especially shall I seek to show: 1. That there are two kinds of resistance in the pulmonary and systemic circuits: (*a*) the permanent resistance offered by the vessels when in a state of complete muscular relaxation; (*b*) the physiological resistance due to the narrowing of the smaller vessels by a contraction of their muscular elements. 2. That the resistance offered by the capillaries is so small as to be practically negligible. 3. That the cardio-vascular system is constructed with a view to offer the minimum anatomical resistance. 4. That there is little or no difference in the anatomical resistance of the pulmonary and systemic circuits. 5. That the excess of systemic over pulmonary resistance is due to the excess of physiological resistance in the former case. 6. That the object of this extra-physiological resistance is chiefly for the purpose of obtaining a head of pressure capable of producing the requisite flushing with blood of any given systemic vascular area when the need arises. 7. That this explains why systemic pressure is greater than pulmonary pressure, and why the left heart is stronger than the right.

Anatomical and Physiological Resistance.

The resistance which the vascular system offers when in a state of complete muscular relaxation we may speak of as "anatomical resistance." It constitutes that permanent resistance which is inevitable in any system of tubes. The varying resistance due to variations in the tonus of the vascular media, notably of the arterioles, subserving as it does a physiological purpose, we may conveniently speak of as "physiological resistance."

Anatomical resistance.—I am not aware that we have any means of accurately estimating anatomical resistance. This much, however, we may, I think, safely conclude—namely, that it is quite small, for, as I shall endeavour to show, the vascular system is constructed with a view to offering a minimum of anatomical resistance. We must once for all rid ourselves of the notion that a complex system of blood-vessels necessarily opposes great resistance to the blood flow. Several considerations militate against this view. Some of these I will mention. The pulmonary circuit under ordinary circumstances, when we may suppose some degree of physiological resistance to be superimposed on anatomical resistance, offers no more than some 20 mm. Hg of resistance; a pressure of 10 mm. Hg suffices to drive the blood through the complex vascular meshwork of the liver; the sudden diminution of physiological resistance which takes place in shock allows the blood to gush with alarming facility into the veins; in the horizontal position, at least, a comparatively small capillary pressure is sufficient to overcome the entire resistance in the systemic venous segment, and this in such colossal animals as the elephant and the whale; pointing in the same direction is the comparatively small difference in the systemic blood pressure of animals of different size, such as the sheep and the horse.

The comparative anatomical resistance in the two halves of the pulmonary circuit.—Anatomical resistance is probably much the same in the arterial and venous portions of the pulmonary circuit.

The comparative anatomical resistance in the two halves of the systemic segment.—Anatomical resistance is somewhat greater in the arterial portion; this arises from the fact that the bore of the systemic arteries (even when fully relaxed) is considerably less than that of the corresponding veins.

The comparative anatomical resistance in the pulmonary and systemic circuits.—We must be careful not to fall into the error of supposing that anatomical resistance is necessarily greater in the systemic than in the pulmonary circuit. I am not even prepared to admit that there is any decided difference between the resistance offered by the two. Resistance by no means necessarily rises and falls with vascular complexity and extent. There is a tendency to assume that the anatomical resistance in the systemic circuit is necessarily greater than that in the pulmonary circuit, because the former is the larger and more complex of the two; but consider the facts. We have first to remember that mere length of circuit has little influence on resistance. There is next the important consideration that by so much as the greater extent of the systemic segment causes its bed to be larger than that of the pulmonary segment, by so much does it cause the flow to be slower and the resistance less. Resistance is, in fact, diminished by increasing the vascular bed, and *vice versâ*. Thus four lungs placed side by side would oppose less resistance than two, the increasing vascular complexity thus effected leading to a parallel widening of the bed and consequent slackening of the blood flow. Contrariwise, a single lung would oppose more resistance than do the two lungs, and, as is well known, the more the pulmonary vessels are encroached upon by disease (e.g., phthisis) the greater is the resistance they offer to the blood flow. As a matter of fact, *were the pulmonary and systemic circuits constructed on the same lines, differing only in respect of extent and complexity, the pulmonary circuit would oppose the greater resistance.* This much seems certain: if the anatomical resistance in the pulmonary circuit is less than that in the systemic it is only slightly less, and, further, if it is less it is not because the pulmonary segment is smaller and less complex than the systemic, but because the bore of the pulmonary vessels (arterioles and venules) is smaller than that of the corresponding systemic vessels. Anatomical resistance in the pulmonary segment is greatest in the arterioles and venules, although even here it is probably quite small.

Capillary resistance.—In 1894 I contributed an article to THE LANCET,[2] in which I sought to show that the resistance which the capillaries offer to the blood current is so small as to be practically negligible, and subsequently in 1898 I gave my views for this conclusion at greater length in the *Journal of Physiology.*[3] Up to that time physiologists had all assumed the existence of a high degree of resistance in the region of the capillaries. Among them I may mention Michael Foster, Waller, Herman, McKendrick, Marie, A. Jager, Cohnhein, Roy, and Stewart. Since then many physiologists, including so high an authority as Professor Leonard Hill, have adopted my conclusion. In several students' textbooks, however, the older view is still taught. From some of these I will quote. W. D. Halliburton writes[4]: "The resistance of the capillaries would be large even for a stream of water, and when we consider that the blood is much more viscid than water we see the effect must be much greater." G. N. Stewart[5] states that friction increases greatly in the capillary region, and that "the resistance in the veins is very small as compared with that in the capillaries" (p. 97)[6]; and again (p. 105), he refers to "the great resistance of the narrow and much branched capillaries."[7] It would almost seem as if Thoma held the same views, for he quotes (apparently with approval) Recklinghausen to the effect that "the resistance which the blood stream has to overcome lies mainly in the capillaries."[8] William Howell alludes to the "great resistance offered by the narrow capillaries."[9] He even goes the length of attributing the excess of systemic arterial pressure over that of pulmonary arterial pressure to the fact that capillary resistance is greater in the former case than in the latter (p. 602), and he falls into the additional error of supposing that the more rapid flow in the pulmonary circuit is due to this circumstance. G. A. Gibson assumes that the capillaries may offer considerable resistance.[10] Brubaker[11] writes: "From the difference in the extent of the pulmonary and systemic systems it is evident that, other things being equal, the friction is less, and, therefore, also the pressure is less in the former than in the latter."

---

[1] Nos. I., II., III., and IV. were published in THE LANCET of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), and 22nd (p. 256), respectively.

[2] THE LANCET, March 10th, 1894, p. 594.

[3] Vol. xxiii., No. 4.

[4] Handbook of Physiology, 1909, p. 266.

[5] A Manual of Physiology, 1906, p. 96.

[6] On this same page Professor Stewart's physics appear to me to be at fault. He argues that because the rate of blood flow in the capillaries is some hundreds of times less than that in the aorta, there must be a great loss of kinetic energy in the capillary region. Is not Professor Stewart forgetting that the total amount of blood movement (= kinetic energy) is exactly the same through a section of the capillaries as through a section of the aorta?

[7] That by *capillaries* Professor Stewart means capillaries proper (and not arterioles and venules) is shown by a passage (p. 140, ibid.) in which he refers to these vessels as being devoid of a muscular coat.

[8] Text-book of General Pathology, &c. By Richard Thoma, Translated by Alexander Bruce, M.A., M.D., &c. 1896. Vol. i., p. 304.

[9] A Text-book of Physiology, 1909, p. 499.

In giving my reasons for concluding that the capillaries offer a very small resistance, let me at the outset state that by a capillary I understand a blood-vessel the walls of which are formed by endothelium only. The assumption that the capillaries offer a great resistance carries with it the conclusion that the pressure at their proximal end is considerably higher than that at their distal end, a condition of things which would not only cause the proximal portions of these highly yielding vessels to be much more distended than the distal, but would assuredly interfere with the proper interchange between the blood plasma and tissue lymph, seeing that this is largely influenced by the amount of capillary blood pressure. Moreover, such a difference in the amount of pressure borne by the two extremities of the capillary would certainly be met by corresponding differences of structure: the vessel at the proximal end would be stouter and stronger than at the distal end; yet there is no evidence of this. That the capillaries do not offer great resistance is further shown by the readiness with which the blood flows from the arteries into the veins when a widespread arteriolar dilatation occurs; by the fact that a pressure of a few millimetres of mercury in the portal vein suffices to drive the blood through the complex meshwork of the hepatic capillaries; and, finally, by the fact that a pressure of some 20 mm. Hg is sufficient to carry the blood through the entire pulmonary circuit, although the rate of the blood flow in the pulmonary capillaries is several times greater than that in the systemic capillaries, a circumstance which tends to augment capillary resistance.

These considerations show that the resistance which the capillaries offer must be very small. Let us now inquire into the physical explanation of the fact. First we have to take into consideration the extreme shortness of the capillaries. These vessels are by far the shortest in the body. Their average length has been variously estimated at 0·2 mm.—0·5 mm. Now, if we take the higher estimate, and if we suppose the average length of the various systemic circuits to be 1 metre—i.e., 1000 mm. (an estimate which is surely well within the mark), the distance traversed by the blood in its passage through the systemic capillaries would be no more than 1-2000th of the length of the entire systemic segment.

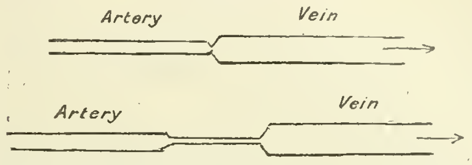
Again, we know that the degree to which the blood pressure falls in the capillaries is a measure of the resistance they offer, but it is doubtful if the blood pressure falls appreciably in these vessels. Its average fall per 0·5 mm. (i.e., the average extent of the capillary span) of the entire circuit, even supposing the entire fall to be but 100, would be—

$$\frac{100}{1000} \div \frac{1}{2} = \frac{1}{10} \div \frac{1}{2} = \frac{1}{20} \text{ mm. Hg.}$$

If, therefore, the blood pressure fell equally along the entire circuit the fall in the capillaries would be 1-20th mm. Hg, so that even if we estimate the capillary resistance as being 20 times greater than the average resistance it would yet only be equivalent to a fall of 1 mm. Hg. But are there any grounds for assuming that the fall of blood pressure in the capillaries, and therefore capillary resistance, *is* ten times greater than the average fall and resistance? I would unhesitatingly reply in the negative. The one factor tending to make capillary resistance high is the narrowness of the capillary lumen, but against this we have to consider the slowness of the capillary flow, the average rate of which is about 0·8 mm. a second.[12]

Physiologists in writing on capillary resistance often fall into the error of assuming that it is in direct proportion to the number of capillaries in the body. They continually refer to the enormous multiplicity of these vessels, and to the great resistance which such a multiplicity of tubes most oppose, whereas in point of fact *capillary resistance is less in proportion as the capillaries are numerous.* We must think of each arteriole as opening out into a capillary lake of blood, and the larger this lake the less is the capillary resistance. Were the ultimate arteriole connected with its venule by one single capillary the latter would oppose considerable resistance, for the flow through it would be many times more rapid than through the arteriole. Marie[13] has fallen into the curious error of assuming that the arteriole and venule are thus connected by a single capillary tube. He explains the supposed high resistance offered by the capillaries as follows. When fluid travels along a tube of equal bore throughout, the fall of pressure is regular, but if this tube is constricted in the middle (see Fig. 7, first diagram) there is a sudden fall of pressure on the distal side. The capillary he regards as a constriction of the arteriole in its passage to the venule, and as thus offering a resistance similar to that of the constricted tube. But (so he urges) the obstacle to the blood flow is not due to a mere local constriction, the resistance obtains over a considerable length (*sic*) of the vessel. In order more accurately to represent the hydrodynamic conditions of the capillary flow we should, he contends, picture to ourselves a tube, not merely locally constricted, but one narrowed for a considerable length of its course (see Fig. 7, second diagram). It will be seen that this is a fallacious analogy, inasmuch as, proceeding from an arteriole to its capillaries, the vascular bed, far from becoming constricted, actually undergoes considerable expansion.

FIG. 7.



The cardio-vascular system is constructed with a view to offering the minimum anatomical (*permanent*) *resistance*—i.e., it would be impossible for an engineer to construct, even in theory, a system of branching tubes leading into a system of capillaries and then again into a system of uniting and reuniting tubes (I mean, of course, a system consistent with the needs of the circulation), which should offer less permanent resistance than the vascular system.

How Anatomical Resistance is Minimised.

In a system of tubes such as that constituting the vascular system resistance can be kept down: (*a*) by keeping the vessels as short as possible; (*b*) by keeping the bore of the vessels as large as possible; (*c*) by making the bed as wide as possible, not only by largeness of bore, but also by means of free branching; (*d*) by the adoption of means to minimise the production of eddies at the cardiac and vascular orifices.

(*a*) It will be found that in almost every instance the blood-vessels take the shortest and most direct route to their destination. Certain exceptions to this rule (coronary, facial, and vertebral arteries) have already been referred to. This minimising of length has, however, but little influence on resistance.

(*b*) Largeness of bore keeps down resistance, not only because the larger the bore of a tube the less is the resistance it offers for a given rate of flow, but because in a system of branching tubes the larger the bore of individual vessels the greater is the vascular bed, and the lower, therefore, the current.

(*c*) If every device is made use of to lower anatomical resistance in the vascular system, we should expect the vascular bed to begin to widen at the giving-off of the very first branches (i.e., the coronary arteries in the case of the systemic circuit) by a suitable regulation of the size of their lumen. Such a widening was, indeed, once thought to occur, but, as already observed, Thoma has shown that in the case of the arteries the vascular bed, and consequently the rate of arterial flow, remains the same—at least, until the region of the smaller subdivisions is reached. Now, it must be conceded that on this latter plan anatomical resistance must be greater than it would be on the alternate plan; in short, that a means of minimising resistance has not been made use of. To this, however, it may be replied that anatomical resistance not only in the pulmonary but in the systemic circuit is, as a matter of fact, extremely small, and that had it been necessary to make it still less, this might have been done by causing the vascular bed to widen out from the giving-off of the first arterial branches. Such an arrangement is evidently not only not necessary, but it must not be forgotten that it would be attended by the great disadvantages of necessitating a corresponding augmentation in the dimensions of the vascular system as well as in the blood mass. Economy must be a prime desideratum in the animal machine.

---

[10] Diseases of the Heart and Aorta, 1898, p. 728.

[11] A Text-book on Human Physiology, 1904, p. 324.

[12] Observe, I say, the average rate of flow. The rate of blood flow in the capillaries varies, of course, enormously from time to time.

[13] La Circulation du Sang, Paris, 1881, pp. 158-159.

The vascular bed may be increased and resistance thus diminished, not only by increasing the bore of individual vessels, but by multiplying the division and subdivision of vessels, providing the united lumens of the branches is greater than the lumen of the parent stem, as it certainly is in the region of the arterioles.

We have seen that one of the reasons why the resistance in the capillaries is so small is the great width of the bed they form on account of their multiplicity. How far this method of lowering resistance by increasing vascular branchings is taken advantage of in the region of the smaller arteries I am unable to say. It is possible that no extra branching is needed for this purpose, but that only just so much branching takes place as is necessary to provide the requisite number of ultimate arterioles for the capillaries. This number is, of course, very large.

(*d*) One of the most effective devices by which resistance is kept down in the cardio-vascular system is by the adoption of means for lessening the production of eddies at the cardiac and vascular orifices. These means are so effectual that, normally, the orifices in question can scarcely be said to offer any special resistance at all, although they would otherwise oppose considerable resistance. To illustrate this statement let us consider: 1. The case of a vessel (see Fig. 8, first diagram) provided near the bottom with a cylindrical spout having the internal orifice of exactly the same dimension as the bore of the spout. 2. The case of a vessel (see Fig. 8, second diagram) similar in all respects to the one just considered, save that the spout, instead of communicating with the interior of the vessel by a sharp-rimmed orifice, expands internally into a funnel-shaped passage, the curves of which gradually pass into the side of the vessel. Now it will be found that water flows out of the second vessel almost twice as rapidly as out of the first. The reason is simple. In the first case abundant eddies are produced at the internal opening of the spout—i.e., the various stream lines of the flowing water tend to impinge against and to cross one another in their effort to round its sharp edges, and thus mutually hinder their escape. In the second case, on the other hand, the stream lines tend to be conducted by the curved walls of the funnel-shaped passage in curved lines running parallel to one another, the production of eddies being thus for the most part avoided.

FIG. 8A.

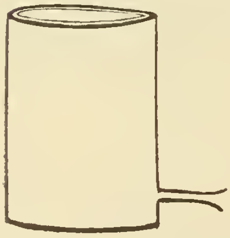
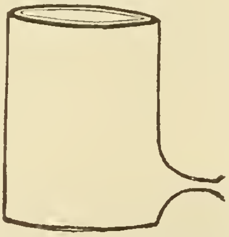


FIG. 8B.



From these simple experiments we may conclude: (1) That if the branches of the arterial tree (pulmonary or systemic) come off from their stems in the same way as the spout is inserted in the first case—in such wise, i.e., that the orifice of communication presents an abrupt rim—the blood as it flows into the branches must be thrown into eddies, and that in this way a considerable resistance must be offered to the flow through the arterial tree. 2. That if, on the other hand, the passages leading from the main stems are funnel-shaped or bell-shaped the tendency to the production of eddies at the giving off of the branches is minimised and resistance thus considerably reduced. Now in point of fact, the arterial branches are inserted into their stems by bell-shaped dilatations. This Thoma has shown by injecting melted paraffin at blood-pressure into the arterial tree and cutting sections at the branching points. I am not aware that any observations have been made to ascertain if the same arrangement obtains at the venous junctions, but I should be greatly surprised if these junctions are not so constructed as to offer a minimum of resistance. Nor can I doubt that special means are taken to reduce resistance at the cardiac orifices. While the blood is flowing through a cardiac orifice we would expect the passage leading to that orifice to become funnel- or bell-shaped; and similarly, when a cardiac chamber, the aorta, or the pulmonary artery is receiving blood, one would expect it to assume a shape calculated to facilitate the flow of blood into it.

Whether these surmises are true or not, certain it is that in obstructive valvular disease special means are adopted to minimise the resistance caused by the obstruction. This I pointed out in 1894.[14] It is well known that the passage leading up to a constricted auriculo-ventricular orifice is frequently funnel-shaped, but it is not so generally known that the like is the case in obstructive sigmoid disease. The fact is, in all cases of valvular obstruction the affected valves tend to become adherent at their adjacent edges and to form a funnel, the narrow opening of which points in the direction of the blood current. This funnel tends to persist until the valves become so mutilated by cicatricial or calcareous change as to form a mere flattened partition. Now it is significant that by the time this stage is reached the valvular orifice is always found to be slit-shaped ("button-hole orifice"), for it is a well-recognised principle in hydro-dynamics that, in the passage of a fluid through an orifice in a partition, a slit-like orifice offers much less resistance than a circular one of the same size. In short, when a cardiac orifice is narrowed by disease an endeavour is made, not only to increase the driving power of the cardiac chamber behind the obstruction, but to minimise the resistance which the narrowed orifice opposes. Evidently the flowing blood makes for itself the easiest channel available, as happens with all flowing liquids. We may observe, for example, that the angles formed by the tributaries of a river with the main stream are rounded off, and one can hardly doubt that during the development of the circulatory system the blood tends to form for itself channels offering a minimum of resistance. It is probable, for example, that under this influence the blood-vessels are moulded in a peculiar way at their junctions, producing the bell-shaped orifices referred to, although doubtless the formation of these is favoured by innate developmental tendencies.

(To be continued.)

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The 12 Horse-power Talbot Car.

RELIABILITY and efficiency are undoubtedly the first consideration for a medical man when making his selection of a car, and an inspection at the recent Olympia Motor Show gave me the impression that this automobile had the necessary qualifications, a first thought which a subsequent prolonged test confirmed.

There are many interesting features in the Clement Talbot cars which easily explain their notable performances in many contests, as shown by the numerous trophies that this company had on their stand at Olympia. The motor is of the now popular four-cylinder 3¼ inch class; the cylinders are cast in pairs, which is an advantage over the fashionable type of all four being cast *en bloc*, as those who have had to remove the cover of such a one will realise. The bore is 80 mm. and the stroke 120 mm. If the Budget is passed this will be an advantage, as the horse-power will probably be calculated by the Automobile Club formula, which is based on the bore, and neglects the stroke. Without doubt, increasing the length of the stroke is as good as increasing the bore, and on this engine the proportion between the two is reasonable and in favour of the tax-payer. The inlet and exhaust valves are on the same side of the engine, mechanically operated and interchangeable.

---

[14] THE LANCET, March 10th, 1894, p. 594.

The carburettor is of the float-feed spray type, with an automatic adjustable air valve. Ignition is by the popular and reliable high-tension magneto, as well as by coil and accumulator; both systems have a common lever on the steering wheel, by which the time of ignition can be varied. The Bosch magneto is placed forward of the engine in a very accessible position and may be readily dismounted by undoing two nuts. Those who desire can have the Bosch dual ignition, which, of course, permits, after brief halts, of starting by merely pressing a button. Lubrication is by pump; the oil is drawn from a sump in the crank-case, filtered, and forced to troughs under the big ends, and to the main engine bearings. Any excess of oil overflows into the sump again, and after being filtered re-enters the pump circulation. The sump contains enough oil for a run of some two hundred miles. An indicator on the dash shows if the oil circulation is being properly maintained. Greasers are fitted to the springs and all the main wearing points. The water circulation is by a centrifugal pump-gear driven by a cross shaft off the half time gear. A satisfactory radiator with cooling fan at back is fitted, and the water-pipes are of ample dimensions. The clutch is a leather-faced cone, which, in spite of its rivals, is still hard to beat, providing, as on this car, that the adjustable buffer springs on the face of the cone will secure easy engagement. The change-speed gear provides four forward speeds and a reverse, which are controlled by one lever, working in a gate form of sector. All the gear shafts run on ball bearings. The direct drive is on the fourth speed. An important point is that the gearbox is oil-tight and easily accessible. Gearboxes that extrude their lubricating contents, even though a shield is fitted, are extravagant as well as unpleasant.

I used to believe that three forward speeds were enough for a moderate-powered car; a drive on this one proved the advantage of the fourth speed, for there are many hills that could not be taken on the top, but which the third easily managed, while on a three-geared car the gap between the top and second is too great, and it is just that want that the extra speed fills. The transmission from gearbox to the road wheels is by means of a live axle and cardan shaft, which latter is provided at its forward end with a universal joint of strong construction; at its rearmost extremity is the bevel which meshes with the crown wheel bolted to the differential box. A tubular casing or sleeve surrounds the cardan shaft and serves as a torque rod. Radius rods are also fitted. The frame is of pressed steel, narrowed at the dashboard to permit of a large steering lock. The engine and gearbox are carried on a pressed steel secondary frame. The usual brakes of the internal expanding kind are provided, and they seem to be made of the right stuff, and should not need adjusting every few hundred miles. A good point is that when they do require taking up it is an easy job to perform—small points, but important, for I have noticed that when brake adjustments are awkward to carry out the reforms are left perilously long neglected, and it is sometimes too late before the needful alterations are attended to. The control is by an accelerator pedal, in addition to the usual hand lever fitted on the steering wheel.

Of course, the proof of the value of a car is in the driving thereof. It is by the actual handling and behaviour of the vehicle on the road that its merits can best be judged, and I think there are few places which offer a better testing area than Woolwich and the county of Kent. I used the car for a morning's round and afterwards for a trip to Bexhill-on-Sea and back, in all some 145 miles. Up Willenhall-road, a hill of nearly 1 in 5, with a heavy landaulette body and four passengers, she went without a murmur, and I felt the radiator after the ascent and found that it was not excessively hot. I think this says much. Then we turned up over Shooter's Hill, round by Danson Park, through Sidcup, Farningham, across country by all the bad roads I could find to Tunbridge Wells, and so to Battle and on to Bexhill-on-Sea. The car took all the hills in magnificent form and seemed to me just the one to appeal to the medico-motorist, while it gives the driver that confidence which is the essence of the pleasure of being one's own chauffeur. The clutch is smooth in action, and the way the car "hangs" on the road on the top speed is bound to be appreciated. I certainly found it an interesting car to drive, with more than adequate engine power for any road and more than sufficiently fast for a doctor's purposes. The brakes were tested on really formidable hills and are smooth in action and remarkably powerful, for which I was grateful, as when descending a narrow, winding hill near Ninfield I found myself amidst a flock of sheep. In a second out came the clutch, and without any trouble the foot-brake alone brought the car to rest. For a small car, too, the springing is most luxurious, and the car is undoubtedly a production of which Messrs. Clement Talbot may well be proud. It is supplied as a touring car, with an ordinary side entrance body; as a landaulette for town use; and with a special two-seated body, with a curved, overhanging dash, high side doors, front glass, and hood. The last named struck me as especially suited for professional use.

How to Use up Burst or Worn-out Tyre Covers.

A device has recently been introduced which certainly enables a motorist to get a couple of thousand miles' wear from a scrapped cover. The value of a worn-out cover is microscopic, as those who have saved them up have probably found out, so I am sure all will welcome the latest introduction of the Stepney Spare Motor Wheel Company, Limited. It is known as the Stepney tube corset, and consists of a rubber and canvas tube, with a hole for the valve of the ordinary inner tube, and a slit all the way round, through which the inner tube can be inserted, and an overlapping flap that covers up the slit. The inner tube is put in with the valve sticking out of the valve hole, the flap is placed so as to overlap, and the corset is then placed inside the cover. Personally I found it quicker to take the cover off the wheel, insert the corset, and then inflate slightly, and lever the whole lot on to the wheel, insert the security bolts by the aid of a forked lever, and put on the rest of the cover in the usual way. Of course, with a burst on the road the cover need not be taken off, but with the tube in it, and the flap facing you, it can be put in like an ordinary tube. With the corset it is impossible to nip or pinch the inner tube, and the compressed rubber band which constitutes the flap is an extra protection against punctures. I recently heard of a Parliamentary candidate who had to travel some distance to address the electors of his district, and he, to avoid the possibility of a delay through a puncture, had the Stepney corset fitted to the four wheels of his car.

In order to test this invention I unearthed a very old burst cover from my scrap heap and put it on the driving wheel of my car, with the corset inside, and I have already done some 500 miles on this cover, which otherwise was useless, and, what is more, I hope to do another 1000 miles on it. This invention avoids the disadvantage of using an inner tube with canvas inserted in it, which is also another device for utilising old covers, but with this an ordinary all-rubber inner tube is used, which naturally can be repaired more easily than an inner tube reinforced with canvas. I think this benefit compensates for the little extra trouble that the corset takes to put in. It is certainly a contrivance which, by allowing old covers to resume their functions for some thousand or two miles, will repay quickly its cost, and should certainly be included in the motoring doctor's kit.

Autoclipse Lamps.

Messrs. Brown Brothers, Limited, of Newman-street, London, W., have just issued a new catalogue of their Autoclipse lamps, which I understand they will be pleased to forward to any motorist. The annoyance of powerful searchlights on motor vehicles has recently been brought out in an action in which Lord Curzon was the defendant, and though it is as well, in fact needful, to have proper road illumination when driving at night-time, as many of the profession have to, it is also essential to have a simple and instantaneous means of suppressing the dazzling glare of the head lights when approaching or passing other users of the road, and the Autoclipse does enable the driver to show consideration for other road-users. This anti-dazzling mechanism consists of a disc, which at the will of the driver can be interposed between the burner and reflector, and thus the long-distance rays which emanate from the back of the flame are cut out and the wide short-distance ones only are left. These lamps are of good quality and reasonable in price and can be supplied for electric light as well as for acetylene.

A Simple Method to Temporarily Repair a Broken Torque Rod.

On the old chain-driven cars a bent or broken torque or distant rod was an inconvenient occurrence: off would come the chain, and if some splint could not be fixed up the ignominy of a return with a mere horse in front had to be considered. Even now on live-axle cars the torque rod may, as the result of a fierce clutch, get out of shape or fracture. On most cars box spanners are carried, and these steel tubes may be utilised as splints. If the rod is merely bent one end should be dropped, the rod straightened, with heat if needful, and then the box spanner driven over until the weakened part is supported by it. Should the rod be broken, then the two ends, made as straight as possible, are brought together and kept so by the box spanner. If a drill is carried the rod may be drilled, so that bolts may be passed through the tommy holes at each end of the spanner, and thus a more secure job results. By these means the disgrace of appealing to a quadruped can be avoided.

How to Remove Stubborn Wheels.

It is occasionally needful to take off the back wheels, and on live-axle cars, which are now the rule, the master gears of the differential are fixed to solid shafts, to the other extremity of which the hubs of the driving wheels are keyed, the weight being carried by a casing or tube, in which the driving shafts revolve. Frequently the wheels become fixed on the shafts that drive them, and it is a trouble to draw them off. A good plan is suggested for doing this in a recent number of the *Autocar.* The cap is removed and against the end of the driving axle the termination or lifting part of an ordinary jack is placed, round some of the wheel spokes is passed a coil of rope, which is fixed to the other end of the jack, then by means of the ordinary lever the jack is unscrewed—that is, made longer—and so by this improvised cramp the axle is held back and the wheel is drawn off.

Concerning Mileage Covered.

A point that may be of interest, anyway in years to come, when the "horsey" doctor, by which I mean the practitioner employing a horse-drawn vehicle, has ceased to exist, is the mileage covered by those who used horse traction for their work. I do not know if speedometers or distance-meters are used on horse-drawn carriages; anyway, I have not been able to discover a professional man having one on such a conveyance. Consequently it is mere conjecture, but from inquiries among the now decreasing number of medical men who so cover their rounds, it seems that 5000 miles a year is above the average; but as the subject is of interest I should esteem it a favour if any colleagues would let me have some particulars on this point with a view of making a comparison on the distance travelled by medical men using horse-drawn and motor-drawn vehicles, and also as to the relative cost. I personally believe that with care and good luck a motor will show a saving on the expenses of a horse and trap, but in either circumstances many medical men would prefer to drive a motor in preference to a horse, for, as a correspondent has remarked, "Formerly I got nothing but work out of a horse, it was useless for pleasure, as it had to rest, but since I have had cars I have had no end of pleasure as well as work out of them." This gentleman certainly seems to have done so, as he tells me that he spent his holidays in his car going from Southampton to Glasgow, along Loch Lomond, over the Pass of Glencoe to Inverness, along the east coast to John O'Groat's, and *viâ* Stirling, Colwyn Bay, Worcester, Salisbury, and Lymington home, a run of some 2000 miles, and the whole cost was £4 11*s.* 6*d.* for petrol, under £2 for odd repairs and adjustments on the road, and £6 for a new cover. These figures certainly speak in favour of the car, both for work and play.

In considering the relative cost of the two means of propulsion, there is with the horse-drawn carriage the first cost of the horse, carriage, and harness, which may vary, according as to whether the carriage is a dog-cart or a brougham, from £50 to £150, or much more; then there is the annual cost for coachman, stable, fodder, veterinary, shoeing, repairs to harness, repairs to carriage, livery, insurance, depreciation of horse, harness, and carriage, as well as interest on capital. Even with a groom and a dogcart this means at least £100 a year, while with a brougham double that amount can be more than swallowed up. I believe a motor compares with advantage. The figures kindly supplied by Mr. Preston and published in THE LANCET for June 26th, 1909, show an initial outlay of about £140, and the annual cost for some 3000 odd miles a year was £30 to £40. This was on a little Rover. My partner, Mr. Stuart, uses a 14–16 four-seated Darracq, and including a professional driver, and with a mileage of over 5000 a year, his running expenses are not more than he spent on a horse-drawn vehicle—about £120 a year. If only sufficient matter is forthcoming, I trust to be able at a later date to publish fuller facts on the relative costs.

THE HEALTH OF THE ARMY IN 1908.

I.

THE report of the Army Medical Department for 1908 affords most satisfactory reading. In his introductory letter the Director-General summarises the chief points, and shows that the steady improvement in the health of the army that has taken place during the last decade has been fully maintained during the year under review. This can be most readily seen in the following table of ratios per 1000 of strength:—

	Admissions.	Constantly sick.	Deaths.	Invalids.
1889–1898 ...	997·3 ...	59·85 ...	9·03 ...	15·36
1903–1907 ...	632·5 ...	38·46 ...	5·96 ...	15·48
1908 ...	573·1 ...	32·28 ...	4·78 ...	10·32

It is seen that there is a large reduction in all these figures. With regard to the ratios for admissions to hospital and men constantly sick the decrease is due, no doubt, in a considerable degree to the introduction of the out-patient system of treatment, which permits of the milder cases of sickness being treated in barracks; this took place in 1904. But the diminution in numbers of deaths and of men invalided out of the service has not been due to this change in administration: the figures for the past year are the lowest that have yet been recorded. From a military standpoint the improvement in the health of the troops has increased their efficiency, and as a consequence the number of recruits required has been lessened; while the saving in the non-effective vote, for maintenance of hospital beds and provision of new hospital accommodation, "would be difficult to overestimate." Within a decade the effective strength of the army—as indicated by the fall in constantly sick rates—has been raised by 5776 men; and the wastage through deaths and invaliding reduced by 2900 men per annum. It has been found possible to make a reduction of more than 2200 beds at home stations, and a similar reduction is in course of being carried out in stations abroad. The Director-General attributes these results to four causes: 1. Change in medical administration by the introduction of the out-patient system of treatment. 2. Improved methods of treatment in hospital, e.g., the great increase in operative procedure that has marked recent years; in 1908, for instance, there were 638 admissions for hernia, 431 were operated on, and only 27 discharged as invalids; greater facilities are now granted for operative treatment than formerly, the theatres are thoroughly well equipped, and (we may observe) every encouragement has been given to the army surgeon to perfect himself in his art. 3. Improvement in sanitation and in preventive measures is shown by decline in enteric fever, malaria, venereal diseases, heart affections, tubercle, &c. 4. The appointment of army medical officers as medical inspectors of recruits has led to greater care and uniformity in the selection of the latter, and the adoption of a more rational physical standard.

A few points are singled out by the Director-General as worthy of especial notice. In the United Kingdom the returns for the past two years show that the reduction in sickness in 1908 is due to a general improvement in the health of the troops, and not to any one specific cause; there has been a marked decline in the admissions for alcoholism; both as regards total death-rate and deaths from enteric fever, tubercle, and alcoholism, army figures compare favourably with those of the civil population. Bermuda shows a great improvement in its health statistics, a record having been established, both in admission (134·8) and constantly sick rates (9·58), not only in regard to previous years at that station, but as compared with any station at home or abroad. No material change is to be noted in India; the decline in venereal disease continues, the figure for 1908 being the lowest on record. A marked decrease occurred in the number of men invalided home, there being 692 fewer than in 1907, "the equivalent in transport accommodation of over 1700 healthy men, or a shipload and a half"; this is probably due to the establishment of convalescent depôts at selected hill stations, which seems to be working well, especially as regards malarial cases. Allusion is made to the work of a Commission, consisting of Major Ronald Ross and Major C. P. Fowler, R.A.M.C., appointed in 1907 to inquire into the prevalence of malarial fever in Mauritius. As the result of their recommendations the drainage of large tracts of land in the immediate vicinity of barracks has been carried out, the beneficial effects of which are already becoming apparent. The prevalence of sore-throat and tonsillitis in various stations has been inquired into by a committee of the Advisory Board, both bacteriologically and epidemiologically; no evidence of spread of infection or specificity of contagion appears to have been obtained. An interesting series of tables is appended, giving statistics of the armies of the four great continental Powers and the United States as regards the prevalence of various diseases in comparison with our own home army. The admission-rates are perhaps not so strictly comparable as the death-rates. For all diseases the United States army has the highest death-rate (5·63) and Germany the lowest (1·8); France (3·52) and Russia (3·13) are higher than our own figure of 2·52, but Austria (2·24) is lower. For enteric fever our ratio (0·10) is lower than that of any other except Germany (0·07); France (0·57) and Russia (0·91) are the highest; Austria has 0·27, and the United States 0·19. For cardiac affections the British and American figures are the same (0·3), being much higher than any others (France, 0·06; Russia, 0·05; Austria, 0·04; Germany, 0·02). For tubercle of lung we have the lowest rate but one (0·15), Germany having 0·1, while Russia has 0·33, France 0·35, Austria 0·42, and the United States 0·53. For venereal disease our *admission*-rate is 68·4; Germany has only 19·3 and France only 28·6, while the United States army has as many as 167·8 per 1000 of strength; Russia has 62·7 and Austria 54·2.

Recruiting.

The first division of the report proper deals with the medical examination of recruits. The physical standards have not been materially altered, a height of 5 feet 3 inches and a chest measurement of 33½ inches fully expanded, provided the expansion range reaches 2 inches, being now accepted. The minimum age is 18, and some special reservists, enlisted at 17, have been allowed to transfer at the end of their training. Most of these will develop into soldiers, but "admission at such an early age considerably lessens the remunerative stage of a soldier's service, by postponing the date at which he may with reasonable security be sent to take his place in the army beyond the sea." The difficulty of determining the recruit's age is great; many on the border-line present themselves, and it is doubtful if anything short of exacting a birth certificate would be efficacious; the practicability of this is for the recruiting authorities to decide, and perhaps it is doubtful.

The number of recruits examined has been 61,278; of these, 282·2 per 1000 were rejected on inspection, and 10·5 were found unfit within three months; both these figures are appreciably less than those for the previous decennium (313·7 and 12·03). Loss and decay of many teeth (53·5 per 1000), under chest measurement (45), heart disease (32·8), and defective vision (23·4) have been the chief causes of rejection; these are always among the most frequent disqualifications, but bad teeth and heart disease have been more so than usual this year, while defective chest measurement and defective vision show a smaller number of rejections. As to the *dental* disability, the report admits that "it has not been found possible to lay down a hard-and-fast rule as to what constitutes dental sufficiency, and a certain discretion must be left to individual examining officers, but a fairly uniform standard is gradually being evolved." After the war the standard set was too high; since 1906 more leniency has been allowed and greater weight attached to the general nutrition and body development; if men are taught to take care of their teeth a lower standard of dental sufficiency may be allowed; the issue of tooth-brushes has been of unquestionable value, but much remains to be done to educate men in their proper use. An observation of much force is made in this connexion. "On enlistment the men are very receptive; they are at the most impressionable period of their career, learning many new things and habits; and it should be no more difficult to teach them to keep their teeth clean than their buttons bright and polished." The boy recruits from the Duke of York's school are instanced: "Their mouths are a bright contrast to those of boys who have not been so instructed. They are fully aware of their advantages and little prone to forego what has become a pleasure. It is to the early education of the child in the care of its teeth, that we must look for an improvement in the dental armament of the recruit." The system of dental treatment at contract rates by civilian dentists, previously tried with success in the Northern Command, was made general in 1908, and is now working well, so that considerable saving of recruits may be expected.

Defective chest measurement (45 per 1000), though the second highest cause of rejection, is considerably less than during the previous decennial period (56·3); this is to be explained partly by the fact that "medical examiners now only reject those who do not attain to the physical requirements of infantry of the line, other rejections on account of men not reaching the standard of the particular corps of their choice being no longer included in the medical figures." When added to the rejections on account of height (8·68) and weight (4·1), the total rejections for defective development amount to 20 per cent. of the whole.

Heart disease (32·8 per 1000) is the third highest cause of rejection, and this disability shows an increase of 12·65 over the decennial average; "examining medical officers are wisely reluctant to pass recruits with a cardiac bruit which is not obviously due to some transient condition such as anæmia." The great difficulty is to appraise correctly functional derangements; excessive rapidity of the heart's action is common; the rule generally followed is "that moderate acceleration *per se* should be no bar, but that excessive persistent quickening, up to about 120 beats per minute or over, should be regarded as a disqualification."

Since test-types have been used instead of the old dots, the rejections for *defective vision* have progressively diminished. The standard is one-quarter of normal vision in each eye, or one-sixth in one eye and normal vision in the other; the rejections were 23·4 per 1000, those for the decennium 1898–1907 having been 35·7. "The present system of examination has proved its great superiority over [the test-dot method]. It ensures a better standard of working sight, whilst at the same time it saves a large number of men who would have been rejected under the former conditions; a more than usually happy combination of efficiency with economy."

In conclusion, it is stated that the average height, weight, and chest girth of recruits enlisted in 1908 show no falling off, and afford no evidence of degeneration in the physique of the population from which they are drawn; such trifling variations as are apparent are mainly on the right side. This is good hearing.

Invaliding.

The report next deals with the *invaliding* of the army. During the years before the South African War a rise was noticeable from 13·26 per 1000, the figure to which it had dropped in 1892; since 1904 the reduction has been considerable in each year (except 1907), and for 1908 the ratio is lower than ever before, amounting to only 10·32 per 1000. The most marked reductions have been in digestive diseases, syphilis, and rheumatism; circulatory and tuberculous diseases show a less noticeable diminution and nervous affections remain stationary. In the circulatory class valvular heart disease accounts for 227 and disordered action for 73 out of the total of 361 cases, both these figures showing a considerable reduction; they are attributed in part to greater judgment exhibited by medical officers in bringing men forward for invaliding, but in the main to an actual reduction of diseases of this nature in the army, the admissions to hospital for valvular disease having been 561, 514, and 362 for the three years 1906–07–08 respectively, and those for disordered action of the heart having been 1157, 1214, and 862 in the same three years. The improved system of physical training may also count, but it is too early to speak confidently on this point. In the class of digestive diseases dental caries accounted for 67 and hernia for 27 cases. The variations in the invaliding for these six classes of disease are shown on a chart, which, however, is not clearly drawn out, the lines denoting the various diseases not being easily distinguishable from each other.

The statistics referring in detail to the United Kingdom, India, and the colonies are of the greatest interest. Out of the total force of 215,467 men there were serving in the United Kingdom 107,392 (or, including men detached, 118,474); in India, 68,522; and in the colonies the remainder, including Gibraltar 3493, Malta 6030, South Africa 14,075, and Egypt 5281.

In the United Kingdom the London District, as always, heads the list with an admission-rate of 695, a death-rate of 3·8, and a constantly sick-rate of 38·4. The Foot Guards have a higher ratio than any other arm of the service for admissions (733) and for constantly sick. The Infantry have the highest invaliding ratio (19·3). It is curious that almost the highest death-rate (3·6) should be registered for the Foot Guards, whilst the Household Cavalry have the lowest (2·2); the Foot Guards have the highest constantly sick rate (51·1), the Household Cavalry having only 20·8; also the Foot Guards have an invaliding ratio (14·9) far exceeding that of the Household Cavalry (8·1); probably variations in medical administration are accountable for these discrepancies. A table is given comparing the death-rate of the troops with that of the civil male population generally between the ages 15–35 years, from which it would appear that the troops have a much lower mortality than civilians of a similar age; but the invaliding has also to be taken into account, and this does not supply any exact factors for correcting the recorded death-rates. In certain cases, however, a comparison may fairly be made. Thus the death-rate for enteric fever amongst the troops at home was 101 per 1,000,000; that for civilian males aged 15 to 35 years (average rate for 1905–07) was 148. Enteric fever did not prevail to any great extent; 79 cases were admitted in all, with 12 deaths; 14 cases occurred at the Curragh in June and July, but no cause was discovered; there were 24 cases at Aldershot, 12 being admitted from one barracks. On investigation a corporal, who had had the disease in 1904, was found to be a "carrier," B. typhosus being detected in the urine.

An important observation is made regarding men invalided for tubercle of the lung, which, we think, should be exhumed from the mausoleum of facts now under notice and given prominence. These men do not at present undergo any sanatorium treatment with a view to fitting them to pursue some occupation when their service with the colours ceases. Most are in the prime of life, when cure or arrest of disease might be hoped for. We cordially agree with the report that there would appear to be, in the interests of the invalided men and their families, scope for some scheme of coöperation between the military authorities and the municipal bodies or charitable institutions possessing open-air sanatoria, which would offer to the men on discharge some prospect of that after-care and attention which is so necessary, if they are to recover their places in civil life as able-bodied citizens. Heart disease shows a most satisfactory diminution, as we have already noticed in considering the figures for the Army as a whole; the death-rate was 203 per 1,000,000 (compared with 253 in 1908 and 281 in 1906); the invaliding rate was also reduced from 293 in 1907 to 220 in 1908; aneurysm has declined from a death-rate of 112 per 1,000,000 in 1906 and 152 in 1907 to 93 in 1908; the invaliding rate was 59 in 1907 and 37 in 1908. Venereal disease occupies the highest place amongst the causes of inefficiency through sickness; the average number constantly sick has been 704, forming 27·4 per cent. of the total inefficiency; there has been a very slight reduction from the figure of the previous year. Sore throat and tonsillitis caused 43 per 1000 admissions, being especially prevalent in the London district (82 per 1000). On the whole, there has been a general improvement in the health of the troops at home, especially noticeable in those diseases which, so far as the army is concerned, are preventable—viz.: (1) pulmonary tuberculosis; (2) valvular affections and disordered action of the heart; and (3) diseases of the blood-vessels occurring in men under middle age.

Sanitation.

In dealing with *sanitation* special attention is drawn to the publication of Army Order No. 3 of 1908, by which the importance of a training in military hygiene for all ranks is officially recognised. Sanitary teaching has now been placed on a definite footing. General officers are now empowered to arrange for at least one annual course of lectures in sanitation for officers serving within their jurisdiction, to be given either by the command sanitary officer or some other officer selected for the purpose. All officers not otherwise engaged on duty are required to attend, and all lieutenants, except in the medical and veterinary corps, have to pass an examination in the subject. The excellent course of instruction in the Aldershot School of Army Sanitation is described; it has lately been transferred to new and more commodious quarters. During the summer systematic training in practical sanitation was carried out in the various camps of exercise throughout the country; and at Strensall, near York, opportunity was taken to mobilise a complete sanitary section during June and July, which was a distinct success. The experience at Strensall clearly demonstrated the value of sanitary organisation, the sage observation in the reports here being that to be successful sanitary effort must be controlled and directed along definite lines, so that each unit is made cognisant of its own duties and responsibilities and the whole taught to appreciate the ultimate object of every measure. The importance of this development can hardly be over-estimated in our opinion; it is the spread of sound practical ideas of health, cleanliness, and common sense as applied to camp life, and as demonstrated by those who know their subject and can make their voices heard, that will make impossible a repetition of the sanitary sins that were so frequent during the South African war. An epidemic of scarlet fever occurred at Caterham barracks, 40 cases being admitted in the early part of the year; no definite source of infection was detected; the disease was prevalent among the civil population at the time; no barrack-room infection was to be traced, but an exceptional incidence of sore throats, tonsillitis, and influenza was noticed in those blocks where scarlet fever had been most prevalent. Though the structural arrangements of all the blocks concerned were essentially the same, it was shown on examination that the buildings chiefly infected were surrounded on all three sides by badly leaking drains. These were thought to be responsible for a prevalence of sore throats in these buildings and so help to explain the fever incidence. It seems very reasonable to suppose that the leaky drains were responsible for the sore throats; we should like to know who was responsible for the leaky drains? are there no functionaries in the medical or engineer departments whose business it is to look after these matters? No doubt this particular stable door has now been carefully locked.

(To be continued.)

ANNUAL REPORT FOR 1908 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

III.[1]

The Administrative Control of Phthisis.

BY way of preface to his summary of the administrative efforts of the London County Council for the control of tuberculous phthisis Sir Shirley Murphy gives account of the more important voluntary and philanthropic agencies existing in the metropolitan area with the same object in view. A system of voluntary notification of phthisis has been adopted in most of the London sanitary districts, and in the year under notice 3166 cases of that disease were reported to the local medical officers of health. But from the fact that within the same area 4330 deaths from phthisis were registered it is clear that the system of voluntary notification is far from complete. That system, however, is at present only in its infancy, and there is reason to hope that through the coöperation of the hospitals to which phthisical sufferers resort for relief the practice will be substantially extended. It is encouraging to learn that many of the larger hospitals already coöperate actively with the local sanitary authorities in their crusade against phthisis. The Brompton Hospital for Consumption has made arrangements by which the names and addresses of patients attending the hospital are, with their consent, notified to the medical officer of health, and the hospital authorities invite those officers to send to that institution, for examination and treatment, any other members of their families who may present symptoms of the disease. Sir Shirley Murphy is in communication with the authorities of several other hospitals specially resorted to by consumptives, with the hope of securing the adoption of the system in operation at Brompton Hospital—a system which, as he says, deserves extension throughout the metropolis. St. Thomas's Hospital employs almoners who visit the homes of sufferers from phthisis and give advice as to their management; they also endeavour to secure the attendance for the aforesaid purposes of other members of the families who may be similarly affected. Guy's Hospital also has made arrangements by which the medical officer of health may be informed of the names and addresses of phthisical patients attending the out-patient department. But the important point which Sir Shirley Murphy makes is this, that with respect to the opportunities which are needed for utilising the information gained by phthisis notification London is but imperfectly provided. "Phthisis mortality," he insists, "occurs especially among the poor, and the measures for its reduction must largely include those which afford assistance, not only to the sufferer, but often to the families of invaded households. It is here that extension of philanthropic effort is greatly needed. The notification of phthisis, without the ability to ameliorate the condition of the sufferer, is not calculated to effect the main object in view." Voluntary health societies render useful aid in a few of the London districts, such as Hampstead, Battersea, St. Marylebone, Paddington, Stepney, Southwark, and Westminster, and their services, as well as those of the Charity Organisation Society and of the several children's care committees, deserve greater encouragement than they receive. But what is needed is a much wider development of that assistance which such voluntary agencies can render in supplementing the work of medical officers of health.

---

[1] Previous notices of this report appeared in THE LANCET of Jan. 15th (p. 196) and 22nd (p. 259), 1910, respectively.

Particulars are given in the report of the procedure adopted in those metropolitan districts in which voluntary notification of phthisis is in operation. In a few of the districts the medical officer of health undertakes the duty of visiting every house in which a case of phthisis is reported to exist, he gives all necessary advice as to the management of the patient and the course to be adopted to prevent the spread of infection to other members of the family, but for the most part this duty is performed not by the medical officer but by the sanitary inspector or the health visitor. Where there exists a voluntary health society the case is generally handed over to its care, but in many districts nothing results from the receipt of notification beyond the giving of advice and the offer of facilities for disinfection in suitable cases. Nevertheless, it deserves mention that a useful work is undertaken by almost all the sanitary authorities in London by giving opportunities for the examination of sputum from suspected cases of pulmonary phthisis. The annual reports of medical officers of health show the number of specimens examined and the results found. The opinion of Dr. Reginald Dudfield is quoted concerning the value which Paddington derives from the dispensary recently established there for the prevention of consumption. Dr. Dudfield reports that not only will patients accept that medical and hygienic advice which is necessary for their own treatment and for preventing the spread of infection, but they welcome visitation in their homes by a doctor or a nurse for the purpose of teaching the patients how to give effect to the hygienic measures prescribed and of seeing that they are carried out. Dr. Dudfield adheres to the opinion that the dispensary system requires the help of notification in order to achieve the best results. By an order of the Local Government Board the notification is now required of all cases of phthisis occurring in Poor-law practice, so that since the beginning of the year 1909, when the order came into force, metropolitan medical officers of health have received information of many of the cases of phthisis occurring in that section of the community which exceptionally needs instruction and assistance.

Public Health Legislation: The London Milk-supply.

In the course of the year 1908 several Acts of Parliament were passed by which public health administration in the metropolis will be affected beneficially, whilst the operation of some of these enactments is not limited to London. Among these is the Children Act of 1908, which gives powers to local education authorities to secure the cleansing of verminous children attending elementary schools, and contains important provisions for the prevention of tobacco-smoking by young children. The London County Council (General Powers) Act of the same year contains many salutary provisions for administrative purposes. Under this statute sanitary authorities are empowered to appoint health visitors and, with the approval of the Local Government Board, to determine their mode of appointment, duties, and tenure of office, as well as to contribute towards their salaries. The same authorities are empowered to remove from the registers kept under the Dairies and Cowsheds Orders the names of dairymen carrying on business in unsuitable premises and to require suitable provisions for the cooking of food in tenement houses, as well as for the observance of cleanliness in such premises and in the persons so employed. A further section of the Act contains regulations for the enforcement of cleanliness in premises in which food is prepared or adapted for sale and for the regulation of noxious trades such as those of fish curer and rag-and-bone dealer.

By means of recent legislation the County Council has obtained Parliamentary powers for the more effectual protection of the metropolitan milk-supply. To some of these, which have for their object the exclusion of the tubercle bacillus from the milk sent to London from a distance, we shall now briefly refer. By the Dairies, Cowsheds, and Milkshops Order of 1899 it was provided that the milk from cows certified by a veterinary surgeon to be affected with tuberculous disease of the udder should not be sold for human food or, without having first been boiled, for the food of swine. But in the year 1904 the County Council, being dissatisfied with existing legislation on this subject, obtained authority under the General Powers Act of that year to remove from any dairy farm or cowshed within their jurisdiction any cow suspected to be suffering from tuberculosis of the udder, the owner being entitled to compensation for the loss of the animal in the event of the suspicion being verified on post-mortem examination. Consequently, ever since the passing of the last-mentioned Act all the cows in the London cowsheds have been periodically examined by the Council's veterinary inspector with a view to the detection of animals thus affected. In the course of the year 1908 the whole of the cows, averaging from 3000 to 3500 in number, were examined on five separate occasions, with the result that 16 of them were found affected with tuberculosis of the udder and were destroyed. By these means the freedom from tuberculous contamination of the milk actually produced in London would appear to have been fairly provided for, but it is well known that by far the greater part of the milk consumed in the metropolis must always be derived from the country districts, and that hitherto no adequate steps have been taken to secure its purity or to protect the London consumer from the dangers of tubercle-infected milk. Accordingly, in the year 1907, the County Council obtained far-reaching powers for this purpose under Part IV. of their Act for that year. The Act referred to empowers the county medical officer of health or his deputy to take, either within or without the county, samples of the milk intended for sale within the county, and in company with a veterinary inspector to examine the cows in any dairy from which milk is supplied to London, and to take for analysis samples of milk from any cow suspected to be suffering from tuberculosis of the udder. The County Council are further empowered to prohibit, under penalty, the supply of milk from any dairy, or from any cow kept therein, if it appears to the Council that tuberculosis is caused, or is likely to be caused, to persons residing in London from the consumption of such milk.

By resolution of the Council the powers here specified came into force at midsummer 1908, during the last half of which year 620 samples of milk were taken by the County Council inspectors from churns consigned from country districts to the various railway termini in London, and were submitted to the Lister Institute for bacteriological examination. In every case in which a milk sample was found to be infective a clinical examination of the cows at the dairy supplying that sample was made by an authorised veterinary inspector. Up to the date of publication of this report 528 examinations had been completed out of the 620 samples taken during the year under notice, and of these not less than 11·6 per cent. were found to contain tubercle bacilli. A table is given in the report showing the country districts from which the samples were taken, and also the proportion of tuberculous contamination detected in each case, and we trust that similar tables will be published in future annual reports. Authoritative information of this kind will certainly be valuable to London milk-consumers, who will thus be able to judge of the relative safety of the milk produced in the country districts from which their own supply is obtained.

Medical Supervision of Midwifery Practice.

Under the Midwives Act of 1902 the number of midwives registered as practising in London in the year under notice was 3020, which number is reduced to 2690 after correction for removals and deaths. Of the practising midwives about 25 reside in lying-in hospitals or in workhouse infirmaries, where they are under the supervision of the medical staff. All practising midwives in London (except those working under the direction of a medical practitioner) are subject to supervision by the officers of the County Council to ascertain how far they are observing the directions of the Central Midwives Board as to cleanliness and as to disciplinary matters generally. The work of supervision on behalf of the County Council is carried on by two lady medical inspectors. In addition to routine work it is the endeavour of these officers to improve the knowledge of midwives and to suggest methods for the better performance of their duties. The inspectors also frequently accompany the midwives to confinements and on their subsequent visits to puerperal women. Already much useful information has thus been acquired as to the actual methods employed by midwives, and as to their individual fitness for their work. During the year under notice 1420 visits of inspection were made, and in most cases where the report was unsatisfactory the midwife's attention was drawn to the particular rule infringed, and at a subsequent inspection the inspector was generally able to report favourably. In case of serious misconduct or of neglect the matter is reported for decision to the Central Midwives Board.

Notification of Births Act.

In any sanitary district of London where it is adopted this Act provides for the notification to the medical officer of health of the birth of every child within 36 hours of its occurrence. In the year 1908 this Act was adopted by 15 metropolitan boroughs and also by the City of London. Until this Act has been more generally applied in the metropolitan area it is obviously premature to attempt an estimate of its value. But from returns made to the County Council by local medical officers of health it appears that in the districts to which the enactment already applies 75 per cent. of the total births registered were notified under its provisions.

Sanitary Inspectors and Health Visitors.

The Public Health Committee of the County Council has had under consideration the sufficiency of the staffs of sanitary inspectors for the work required in several of the metropolitan districts. The borough of Bermondsey appears to have been a defaulter in this respect; so much so that the Council found it necessary to bring pressure to bear on that body by representation of its default to the Local Government Board, which after inquiry made an order requiring the borough council to appoint three additional inspectors. In Marylebone two additional male inspectors and one temporary female inspector were appointed during the year, and additional male or female inspectors were appointed for the districts of Wandsworth, Hampstead, and Poplar. The question of the employment of female sanitary inspectors or health visitors was considered by the borough councils of Stepney and Camberwell, but hitherto no appointment has been made.

To the present report, which we regard as in certain respects the most important of the series for which London is indebted to Sir Shirley Murphy, there are added five appendices, all of which, and especially that of Dr. James Kerr on Elementary Education, are of great public interest. To the consideration of some of these we hope to recur on a future occasion.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 28th, 1832.

ALUM IN TOOTHACH.

Dr. Kuhn asserts that alum, finely powdered, not only relieves the toothach, but arrests the progress of caries in the tooth. One or two grains are to be inserted into the cavity of the tooth, to be repeated when the pain returns. In a short time, the pain will cease to recur, and the chemical action which constitutes the caries will cease.

(In connexion with the above paragraph, and especially as the remedy is at the present day (1910) often recommended to the public in popular journals, it may be interesting also to quote the following paragraph from *The Pharmaceutical Journal*, Vol. VI., 1846–47, p. 188.)

REMEDY FOR THE TOOTH-ACHE.

THE following application is said to soothe the irritability of the nerve of a decayed tooth, without occasioning any inflammation in the periosteum or in the gums, as is generally the case with the remedies used:

Powdered alum is made into a paste with nitrous ether, and a small quantity of this is put into the hollow of the decayed tooth. It is sometimes found serviceable to spread some of this paste over the gums, when they are congested and painful.—*Bull. de Therap.*

(The Editor of *The Pharmaceutical Journal* added:—"This remedy has been long used in this country.")

VITAL STATISTICS.

VITAL STATISTICS FOR 1909.

THE following are the provisional figures showing the birth-rates and death-rates in England and Wales in the year 1909:—

—	Annual rates per 1000 living.				Deaths under one year to 1000 births.
	Births.	Deaths.		Principal epidemic diseases.	
		Crude.	Corrected.*		
England and Wales	25·6	14·5	14·5	1·12	109
76 great towns ...	25·7	14·7	15·6	1·42	118
143 smaller towns	24·8	13·9	14·5	1·08	111
England and Wales less the 219 towns	25·6	14·5	13·6	0·80	98

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7554 births and 4749 deaths were registered during the week ending Jan. 22nd. The annual rate of mortality in these towns, which had been equal to 14·8 and 14·9 per 1000 in the two preceding weeks, declined again to 14·8 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns did not exceed 14·8 per 1000, and the mean rate in London during the same period was as low as 14·4. The lowest annual rates of mortality recorded in the 76 towns last week were 6·8 in King's Norton, 8·5 in Hornsey and in Newport (Mon.), and 8·8 in Willesden; the rates in the other towns ranged upwards, however, to 22·8 in Bury, 22·9 in Rhondda and in Barrow-in-Furness, and 23·7 in Swansea. In London the recorded death-rate last week did not exceed 14·5 per 1000. The 4749 deaths registered in the 76 towns last week showed a decline of 37 from the number in the previous week, and included 278 which were referred to the principal epidemic diseases, against 242 and 288 in the two preceding weeks; of these 278 deaths, 98 resulted from whooping-cough, 58 from measles, 44 from diphtheria, 32 from diarrhœa, 31 from scarlet fever, and 15 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·9 per 1000, against 0·8 and 0·9 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, Willesden, East Ham, Brighton, Derby, Southampton, or in 12 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·9 in West Bromwich, 3·2 in Swansea, 3·3 in Barrow-in-Furness, and 4·1 in Ipswich. The fatal cases of whooping-cough, which had been 109, 77, and 79 in the three preceding weeks, further rose again last week to 98, and caused annual death-rates equal to 1·5 per 1000 in Walthamstow, in Hastings, and in Bootle, and to 1·9 in West Hartlepool. The deaths from measles, which had been 36 and 61 in the two previous weeks, declined to 58 last week; the highest annual rates from this disease last week were 1·6 in Northampton, 2·1 in Swansea, and 3·4 in Ipswich. The 44 deaths referred to diphtheria showed a decline of 16 from the number in the previous week, and included 14 in London and its suburban districts, 6 in Liverpool, 4 in Manchester and Salford, 3 in Barrow-in-Furness, and 2 both in Hanley and in Bradford. The 31 fatal cases of scarlet fever exceeded the low number in the previous week by 7; they included 5 in Birmingham and Aston Manor, and 6 in Liverpool. Only 32 deaths were attributed to diarrhœa, against 36 and 46 in the two preceding weeks; and but 15 deaths were referred to "fever," of which 2 were recorded in Devonport and in Liverpool, and 4 in London and its suburban districts. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had declined in the 14 preceding weeks from 2819 to 2172, had further fallen to 2069 on Saturday last; 204 new cases of this disease were admitted to these hospitals last week, against 244, 212, and 200 in the three preceding weeks. The Metropolitan Asylums Hospitals contained 3 cases of small-pox on Saturday last. Of the 1351 deaths registered in London last week 291 were referred to pneumonia and other diseases of the respiratory system, against 360, 338, and 285 in the three preceding weeks; these 291 deaths were fewer by 106 than the corrected average number in the corresponding week of the five years 1905–09. The causes of 40, or 0·8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, and in 49 other smaller towns; the 40 uncertified causes of death in the 76 towns last week included 8 in Liverpool, 7 in Birmingham, and 5 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 829 births and 563 deaths were registered during the week ending Jan. 22nd. The annual rate of mortality in these towns, which had been equal to 20·4 and 16·7 per 1000 in the two preceding weeks, further declined to 15·5 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·5 per 1000, and exceeded by 2·7 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 11·2 and 11·4 in Aberdeen and Leith, to 17·7 in Greenock and 20·8 in Dundee. The 563 deaths from all causes in the eight towns last week showed a further decline of 41 from the high numbers in the two previous weeks, and included 77 which were referred to the principal epidemic diseases, against 93 and 82 in the two preceding weeks. These 77 deaths were equal to an annual rate of 2·1 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. The 77 deaths from these epidemic diseases in the Scotch towns last week included 46 from measles, 13 from diarrhœa, 8 from diphtheria, 4 from "fever," 4 from whooping-cough, and 2 from scarlet fever, but not one from small-pox. The fatal cases of measles, which had been 68, 55, and 37 in the three preceding weeks, rose again to 46 last week, and included 39 in Glasgow and 6 in Edinburgh. The 13 deaths attributed to diarrhœa showed a further decline from the numbers in the two previous weeks; 5 were returned in Glasgow, 4 in Edinburgh, and 3 in Dundee. The deaths from diphtheria, which had been 5 and 9 in the two previous weeks, were 8 last week, of which 4 occurred in Glasgow and 2 both in Dundee and Aberdeen. The 4 fatal cases of whooping-cough corresponded with the numbers in the previous week, including 2 in Greenock; the 4 deaths referred to "fever" (fewer by 3 than those in the previous week) included 3 in Glasgow and 1 in Greenock. Both the fatal cases of scarlet fever occurred in Glasgow. The deaths in the eight towns last week referred to diseases of the respiratory system, which had been 181, 172, and 132 in the three preceding weeks, further declined last week to 101, and were 17 below the number returned in the corresponding week of last year. The causes of 10, or 1·8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 545 births and 422 deaths were registered during the week ending Jan. 22nd. The mean annual rate of mortality in these towns, which had been equal to 25·4, 19·7, and 22·3 per 1000 in the three preceding weeks, declined to 19·1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 20·4 per 1000, whereas the mean rate during the same period did not exceed 14·8 in the 76 largest English towns and 17·5 in the eight principal Scotch towns. The annual death-rate last week was equal to 22·5 in Dublin, 16·7 in Belfast, 16·1 in Cork, 14·4 in Londonderry, 20·6 in Limerick, and 17·5 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 20·0 per 1000. The 422 deaths from all causes in the 22 town districts during the week showed a decline of 70 from the number returned in the previous week, and included 29 which were referred to the principal epidemic diseases, against 36 and 28 in the two preceding weeks; these 29 deaths were equal to an annual rate of 1·3 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·9 per 1000, but in the eight principal Scotch towns it was equal to 2·1. The 29 deaths from these diseases in the Irish towns last week included 18 from whooping-cough, 6 from diarrhœa, 4 from diphtheria, and 1 from "fever," but not one either from measles, scarlet fever, or small-pox. The 18 fatal cases of whooping-cough showed a decline of 4 from the number returned in the previous week; they included 13 in Belfast, and 4 in Dublin. Of the 6 deaths attributed to diarrhœa 4 occurred in Dublin; and of the 4 fatal cases of diphtheria 3 occurred in Dublin and 1 in Belfast. A death was referred to enteric fever in Dundalk. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 110 and 138 in the two preceding weeks, declined again last week to 107. The causes of 26, or 6·2 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., and in the eight principal Scotch towns it was not higher than 1·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, the following Inspectors-General of Hospitals and Fleets have been placed on the Retired List at their own request:—Henry Thompson Cox and Leonard Henry Kellett (dated Dec. 6th, 1909).

Consequent thereon the following promotions have been made from the same date:—Deputy Inspectors-General: Charles James and Arthur William May to be Inspectors-General of Hospitals and Fleets in His Majesty's Fleet. Fleet Surgeons: Timothy Joseph Crowley and Donald

Templeton Hoskyn to be Deputy Inspectors-General of Hospitals and Fleets in His Majesty's Fleet.

ARMY MEDICAL SERVICE.

Major Charles E. Pollock, R.A.M.C., to be a Deputy Assistant Director-General (attached to the Department of the Director of Military Operations), vice Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., whose tenure of that appointment has expired (dated Dec. 29th, 1909).

ROYAL ARMY MEDICAL CORPS.

Major Robert C. Thacker retires on retired pay (dated Jan. 25th, 1910).

The undermentioned officers are seconded:—Captain John Powell, for service with the Egyptian Army (dated Sept. 22nd, 1909). Lieutenant Stephen Field, for service under the Colonial Office (dated Oct. 1st, 1909). Lieutenant William P. McArthur, from the Seconded List, is restored to the establishment (dated Dec. 1st, 1909).

Lieutenant-Colonel W. G. Macpherson, C.M.G., is posted to the London District and Lieutenant-Colonel R. J. S. Simpson, C.M.G., to the Royal Herbert Hospital, Woolwich. Major J. C. Morgan from Cahir has been appointed sanitary officer to the Dublin District. Lieutenant-Colonel Yarr has been appointed Medical Inspector of Recruits, Scottish Command. Lieutenant A. S. Cane, Lieutenant G. H. Dive, Lieutenant R. Gale, and Lieutenant J. M. Weddell have been posted for duty in the London District, and Lieutenant C. G. Collett, Lieutenant R. H. Nolan, and Lieutenant P. C. Field for duty in the Aldershot Command. Captain R. T. Collins is transferred from the Garhwal Brigade to the Station Hospital, Meerut, India. Captain J. W. L. Scott is appointed specialist in Radiography and Electrical Science in the 4th (Quetta) Division, and Lieutenant R. G. S. Gregg specialist in the Prevention of Disease in the Presidency Brigade, Calcutta, India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel T. Grainger is appointed Principal Medical Officer, Burma Division, vice Colonel H. K. McKay, C.B., C.I.E., retired. Major Jay Gould has been appointed Staff Officer, Medical Mobilisation Stores, 3rd (Lahore) Division, vice Major G. H. Frost, who reverts to his permanent appointment as officer in medical charge of the 2nd Battalion, 4th Gurkha Rifles. Captain S. G. S. Haughton is attached to the 1st Battalion, 3rd Gurkha Rifles, for duty. Captain H. S. Matson, whose services have been placed at the disposal of the Government of Burma, is appointed to Meiktila as special plague medical officer. The services of Captain J. L. Lunham have been placed at the disposal of the Government of India for temporary civil employ. The services of Captain W. Tarr and Captain H. Lack are placed at the disposal of the Governments of the Central Provinces and Burma respectively. Captain Godson and Captain Owens are posted for temporary duty to Eastern Bengal and Assam and Bengal respectively. Captain Maddock is posted for permanent duty to Bombay. Captain K. W. Mackenzie has been granted one year's furlough and study-leave from India, and Captain Leicester one month's leave. Lieutenant-Colonel Melville acts as civil surgeon, Simla East, during the absence of Captain Leicester.

THE ROYAL MILITIA OF THE ISLAND OF JERSEY.

Medical Company: Charles Noble Le Brocq to be Surgeon-Lieutenant (dated Jan. 8th, 1910).

TERRITORIAL FORCE.

Infantry.

5th Battalion, The South Staffordshire Regiment: Surgeon-Major James S. Wilson, from the 2nd Volunteer Battalion, The South Staffordshire Regiment, to be Surgeon-Major, with precedence as in the Volunteer Force (dated April 1st, 1908); to be Surgeon-Lieutenant-Colonel (dated May 7th, 1908).

Royal Army Medical Corps.

3rd North Midland Field Ambulance: Charles Algernon Stidston to be Lieutenant (dated Dec. 7th, 1909).

Sanitary Service: Charles Milton Fegen to be Captain, whose services will be available on mobilisation (dated Jan. 7th, 1910).

Attached to Units other than Medical Units.—Surgeon-Lieutenant-Colonel James Scott Wilson, from the 5th Battalion, The South Staffordshire Regiment, to be Lieutenant-Colonel (dated May 8th, 1908). Lieutenant-Colonel James S. Wilson resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated Oct. 31st, 1909).

For attachment to Units other than Medical Units.—George Denbigh Collen to be Lieutenant (dated Dec. 16th, 1909).

VOLUNTEERS.

2nd Bucks (Eton College) Volunteer Rifle Corps: Surgeon-Major Edward S. Norris, to be Surgeon-Lieutenant-Colonel (dated Dec. 10th, 1907); is granted the honorary rank of Surgeon-Colonel (dated June 10th, 1908); and resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated Dec. 12th, 1909).

Surgeon-General Francis W. Trevor, C.B., Principal Medical Officer in India, has been appointed an Honorary Surgeon to the King, vice Surgeon-Major-General C. D. Madden, C.B., deceased.

Correspondence.

"Audi alteram partem."

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—This society was founded on Jan. 27th, 1908; we therefore hope that you will find room for an account of its work during the past 12 months. It has now about 2800 members and 130 associates. In addition to the branches which it had a year ago, it now has branches in Birmingham, Brighton, Edinburgh, Liverpool, Newcastle, and Shrewsbury. Other branches are in course of formation in Bath, Harrogate, Oxford, Ryde, and elsewhere. In other places it has corresponding members, representing the society and in touch with the central committee.

Since last January the following have consented to be Vice-Presidents of the society: Miss Balfour, Sir Robert Ball, Mr. Otto Beit, Mr. Neville Chamberlain, the Very Rev. William Delany, the Bishop of Derry, the Duke of Devonshire, the Rev. T. A. Finlay, the Rev. John Gwynn, the Right Hon. Jonathan Hogg, Viscount Iveagh, Lord Leconfield, Sir Henry Morris, Miss Isabella Mulvany, Lieutenant-Colonel Pilkington, Lord Stanmore, the Provost of Trinity College, Dublin, and the Archbishop of Tuam.

The Research Defence Society has now obtained a well-established position, and is becoming generally known throughout the country. There has been a great increase in the work of distributing literature, and many thousands of pamphlets have been sent out. There has also been a great increase in the number of addresses and lantern lectures given by members of the society. These addresses and lectures have been very useful, and have been well received by large audiences. We have three complete sets of lantern slides, illustrating (1) What we owe to experiments on animals in physiology and pathology; (2) Pasteur's life and work; (3) the prevention of tropical diseases: malaria, yellow fever, Malta fever, sleeping sickness. Duplicates have been made of most of these slides, and are at the service of all members of the society. Full catalogues and notes are sent with each set of the slides. The committee are always willing to send speakers to debates arranged by clubs, institutes, debating societies, or representative committees; but they do not feel bound to accept the "challenges" which they receive from anti-vivisection societies. The society held a stall at the Church Congress Exhibition last October, and a lecture was given in the Exhibition Building during the Congress.

Before the General Election we published a letter in the press calling the attention of all Parliamentary candidates to the society's work and to the evidence already published by the Royal Commission, and reminding them that the Commission has not yet published its final report and recommendations to Government. A copy of this letter was sent to each candidate. A circular letter has lately been sent to all the honorary secretaries of the branches and divisions of the British Medical Association, asking them to bring before the members of the Association our need of more branches and corresponding members.

Since last January the following pamphlets have been issued: 1. Experiments on Animals during 1908 in Great Britain and Ireland. 2. Anæsthetics used in Experiments on Animals. 3. On the Use of Dogs in Scientific Experiments. 4. The Value of Antimeningitis Serum. 5. Recent Surgical Progress. 6. Advance in Knowledge of Cancer. 7. Some Thoughts on Causation in Health and Disease. 8. Reprint of correspondence in the *Times*, December, 1908–January, 1909. 9. Reprint of articles in the *Standard*, July 20th, 1909.

Other pamphlets are in course of publication, and a series of short popular leaflets is being prepared for more general distribution. A set of all pamphlets and leaflets lately published will be sent in due time to each member of the society. The society's work must be slow and cannot be judged only by the number of pamphlets distributed and lectures given. But we have abundant evidence that the society is gradually impressing on the public mind the facts as to experiments on animals in this country.

We remain, Sir, yours faithfully,

CROMER,
President.

SYDNEY HOLLAND,
Chairman of Committee.

F. M. SANDWITH, M.D., F.R.C.P.,
Hon. Treasurer.

STEPHEN PAGET, F.R.C.S.,
Hon. Secretary.

SCIENCE TEACHING IN SCHOOLS.

To the Editor of THE LANCET.

SIR,—In the appreciation of my address to the Public Schools Science Masters Association in your issue of Jan. 22nd the suggestion is apparently made that I am an opponent of literary training, as you say, "*pace* Professor Armstrong, we can see no opposition between a scientific and a 'literary' secondary education." Let me assure you that neither can I. Although I have no particular leaning towards either Smollett or Goldsmith, I could not sit at the breakfast table in peace if I felt that I had offended against Wendell Holmes.

With you, I earnestly hope that "the preliminary training of boys destined for medicine will in the future be in the best sense of the word literary." My scheme does not exclude Latin—in fact, the words I used are, "Boys properly prepared in the way I contemplate will learn far more Latin and even Greek, if desirable, than under the present system, even if the teaching be postponed until the last two years of school life." My address will appear in full in Mr. Murray's quarterly journal, *Science Progress*, in the course of this week and I hope that my arguments will receive the attention of medical men in particular.

I may point out that, to make Latin and Greek useful even for the limited purpose of interpreting technical terms, something more than mere knowledge of these languages is required. The technical jargon of the day is a hopeless maze, because of our failure to think broadly and act consistently when devising new names. Thus an *analysis* is an operation involving splitting up *by* and not *of* a chemist; *electrolysis* and *hydrolysis* connote splitting up *by* electricity and *by* water respectively, not *of* them. What, then, are we to suppose is the meaning of the modern term *hæmolysis*, for example—a splitting up *by* blood? *Amylolytic*, *proteolytic*, &c., ferments—are these ferments which split up *by* means of starch or of protein? Attention is called in vain to such inconsistencies.

Nothing could be more admirable than the way in which you insist in the penultimate paragraph of your editorial article that science studies must proceed little by little and line upon line. It is because I am so entirely in agreement with your final paragraph that during the past 25 years I have ever and again called attention to faults in the preliminary medical curriculum. The improvement of medical education must await the improvement of our secondary schools; I therefore would ask for the whole-hearted support of medical men in this crusade.

I am, Sir, yours faithfully,

Jan. 24th, 1910. HENRY E. ARMSTRONG.

ASEPSIS AND ANTISEPSIS.

To the Editor of THE LANCET.

SIR,—May I once more intrude on your space very briefly? As I have repeatedly said, I believe it is quite possible without the use of antiseptics during and after an operation to obtain aseptic results, and the admirable statistics brought forward by Mr. Percy Sargent demonstrate that this is the case. But the point for which I contend is that while such results may be obtained by specially skilled surgeons operating under the very best circumstances, the method is too difficult for ordinary practice, and that a reasonable use of antiseptics in addition to the other precautions, instead of being a disadvantage, will enable surgeons to obtain aseptic results more easily and with greater certainty, and under circumstances which are by no means ideally good.

The subject is so confused at present that I should like to see the formation of a small committee of surgeons from different hospitals—say half-a-dozen, with the addition of one or two bacteriologists—to go over every detail bacteriologically, and to study how each works in practice. They might thus be able to arrive at an authoritative statement as to what was efficient and what was inefficient, and what was practical and what was not. In this way a sort of standard of wound treatment might be laid down which would be of the greatest value to the profession.

Personally, I should be very pleased to do anything I could to forward the work of such a committee. My only desire in the matter is that the foundations which Lord Lister has so laboriously and successfully laid down are built upon with due care and simplicity and in a permanent manner.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 24th, 1910. W. WATSON CHEYNE.

THE LATE DR. T. D. SAVILL.

To the Editor of THE LANCET.

SIR,—The death of Dr. T. D. Savill leaves, no doubt, a blank in the ranks of the medical profession, but in the ranks of his friends the loss is in every sense more intimate and is irreparable. His profession revealed his abilities as a physician, but only the closer circle of his friends and patients knew the man and were therefore capable of understanding and estimating his rare qualities of mind and heart. Life, its complications, difficulties, to many its impossibilities, are the inevitable moulders of character; and Dr. Savill did not escape the scalpel of discipline and of disappointment. No fewer than three times was he stricken down with rheumatic fever, leaving him each time crippled and nearly penniless, before he was thirty. Temperamentally a man of firm will, his early struggles emphasised this quality of mind; and the later obstacles which confirmed and stamped him as a man of action and determination gave him at times a certain abruptness of manner which was not always understood. The combative side of his nature—always present in strong characters—which was developed, without coöperation on his part, by the exigencies and struggles of life, concealed a tenderness of heart that never wore through the surface of his outward reserve. Suffering, at its first call, unlocked his heart; he was then the sympathetic minister of the poor, the lonely, the distressed. To all women he was as a brother. An inexorable student, a conscientious, a relentless, I may add often an exhausted, worker, he yet found time for the care and development of a rare appreciation of domestic life, of poetry, of the arts, which particularly endeared him to his friends. Apart from the inevitable publicity of his profession, his life was essentially private, and his dislike of all *réclame* innate. The friends who found him ever a charmingly simple comrade, loyal, cheerful, and calming, will preserve his memory, while they unite in deepest sympathy for his devoted wife.—I am, Sir, yours faithfully,

ANTONIO DE NAVARRO.

Court Farm, Broadwell, Jan. 24th, 1910.

To the Editor of THE LANCET.

SIR,—A leading characteristic of Savill was his great industry and capacity for work. He never spared himself and often insisted on carrying out details which might well have been relegated to others. His untiring energy was well displayed during a recent visit to the Continent I made with him for the purpose of inspecting the leading hospitals there. All the arrangements for the itinerary were made by him. This entailed an enormous amount of work—the writing of letters late into the night and often early in the morning during the whole of the tour—but so admirably was every detail worked out that not a single hitch occurred in the arrangements. Savill's absorption in work caused him at times to appear abrupt in manner, and to be neglectful of those little arts which make for popularity. Thus it was that he was not understood by everyone. Only in this way can I explain the fact that he was never elected to the Fellowship of the Royal College of Physicians, a distinction which he had long since richly merited. I myself never had any difficulty in understanding and appreciating the real man. Savill was an undemonstrative man, but one *felt* the good that was in him and the loyalty of his friendship, and this was all-sufficing. During our long friendship I never heard him speak unkindly of anyone. He has been suddenly snatched away just when he was beginning to reap the full reward of a brave and strenuous life, and those who knew him—really knew him—mourn his tragic end.—I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 25th, 1910. HARRY CAMPBELL.

THE PANCREATIC REACTION IN THE DIAGNOSIS OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—I am much interested in a letter under the above heading in THE LANCET of Jan. 22nd, p. 269, and I can confirm the opinion expressed by Dr. G. Herschell as to the value of the pancreatic reaction in the diagnosis of duodenal ulcer in excluding functional hyperchlorhydria. It has probably escaped Dr. Herschell's notice that in my Hunterian lecture on Duodenal Ulcer and its Treatment, which was published in the *British Medical Journal* of Feb. 2nd, 1907, p. 248, will be found the following paragraph: "The presence of an excess of urobilin may indicate catarrh extending to the bile ducts, and the presence of pancreatic crystals, as shown by Cammidge's test, may point to catarrh extending up the pancreatic duct."

It should be borne in mind in estimating the value of this test that it is common both to duodenal ulcer and to cholelithiasis, both of which are associated with duodenal catarrh. In the former disease I have found it universally present, hence it has been my custom for some years in any case of doubtful diagnosis to avail myself of a pathological report, but in the latter condition the pancreatic reaction occurs only in about 70 per cent. of cases, so that in estimating the value of the test the presence of cholelithiasis has to be taken into consideration. My estimate of the value of this test has resulted from a considerable experience of duodenal ulcer, as, besides having operated on 150 cases, I have employed it in a large number of cases which were not operated on, but where the diagnosis was able to be subsequently verified.

I am, Sir, yours faithfully,

Park-crescent, W., Jan. 24th, 1910. A. W. MAYO ROBSON.

THE EYE-SIGHT OF MOTOR DRIVERS.

To the Editor of THE LANCET.

SIR,—The drivers of motor cabs, omnibuses, and other public vehicles are required to pass certain tests for vision, and thus one source of danger to the public is guarded against. It is doubtful if more than a very small proportion of the owners of private motor-cars ever make inquiries concerning the sight of their chauffeurs. The three following examples of gross defect of sight in drivers of private cars have recently come under my notice.

1. An owner who usually drives his car; myopia of high degree, wears glasses when driving, with which his vision is: R. eye, 6/36, imperfectly; L. eye, 6/60. He states that he has "no difficulty except when the light is dull."

2. Chauffeur, in the employ of a private owner. High degree of hypermetropic astigmatism. Left eye congenitally amblyopic; right sees 6/18 badly, and can be improved to 6/9, but with a fully correcting lens patient is uncomfortable and consequently does not usually wear glasses when driving. Occasionally, "if the light is bad," he wears glasses which partially correct the refractive error and give vision of 6/12.

3. Chauffeur, in the employ of a motor manufacturer and proprietor. He is not a regular driver but is often sent out with cars. He is blind in the left eye; sight lost after operation in childhood. In the right there is a congenital cataract and the sight is only 4/60, not improved by lenses. He stated voluntarily that he could not tell whether a vehicle was approaching or going from him until he was "right on it." I am, Sir, yours faithfully,

Harley-street, W., Jan. 24th, 1910. J. B. LAWFORD.

THE STATE REGISTRATION OF NURSES.

To the Editor of THE LANCET.

SIR,—In the heat and worry of electioneering I must be forgiven if I do not reply at length to Dr. J. M. Mason's letter, in which he comments on an excellent speech I made at the meeting of the Cottage Benefit Nursing Society. I thank him, at any rate, for replying to it in a very different spirit to that which is generally vouchsafed to me by the advocates of the registration of nurses.

Dr. Mason writes that "no one suggests, as Mr. Holland assumes, that because a nurse has passed a State examination therefore she has all the attributes of the best nurse." But unfortunately this is suggested, and certainly the public would be led to believe that in engaging a registered nurse they would be securing a competent and suitable nurse. Let us see what Lady Helen Ferguson, one of their ablest advocates, has written: "The continuance of a nurse's name on the register would be a *guarantee* [Mark this. S. H.] of her professional fitness—general fitness for employment"!

As a fact, it would guarantee nothing except that, perhaps many years before, she had passed what must necessarily be an easy examination, and had left her training school with a good character. And no guaranteeing body would really know anything of her afterwards. Registration would secure to the public neither professional fitness nor fitness of character. It is not the remedy for the present chaos, and a false remedy is worse than a known danger.

I learn that the nurses are not registering in the State of New York where they have a Registration Act, and I will prophesy that if passed in England, which is not likely, after the novelty of the thing has worn off, nurses in England, certainly the best, will not register. It may help the bad, of course. If anyone is interested enough to care to read my speech I shall be happy to send him a copy.

I am, Sir, yours faithfully,

Royston, Herts, Jan. 21st, 1910. SYDNEY HOLLAND.

"A VICTIM TO SCIENCE."

To the Editor of THE LANCET.

SIR,—As a neighbour of Mr. Cox, the "X ray martyr," and conversant with the facts of the case, I thank you for your annotation of Saturday last and for the insertion of Mr. F. W. Alexander's letter in support of Sir William Treloar's appeal. Mr. Alexander's statement is no exaggeration when he says "that a more pitiable case I have never witnessed in any human being during my 32 years' professional career." Words fail to express the pathetic condition of the man who has sacrificed health and fortune for the benefit of his race, and who bears his sufferings with heroic fortitude. Testimonies are daily to hand from leading members of the medical profession expressing their indebtedness to Mr. Cox, whose work they acknowledge to have been of the greatest service. Visiting him the other day he said, "When I was working with the doctors I little thought the help I was rendering would return to me in such generous sympathy as I am receiving from them now." Mr. Cox's medical attendant, Dr. R. Taylor, says: "It is not outside my professional office to mention the very great deal which this public action is meaning to him, both as a comfort to his fatal trouble and as a hope of leaving his family in some measure provided for." Mr. Cox is in his forty-seventh year, and when able to follow his calling was an enthusiast in scientific research. Generous and self-sacrificing, he lived for others, and was always ready to give the X ray treatment freely to the poor who could not afford to pay. Sir William Treloar in raising a fund for Mr.

Cox and his young family has done a kind and timely act. Help given is opportune, as the small savings of the dying man are practically exhausted. I may add that the average expenses for dressings alone to relieve his sufferings have averaged for the last two years £3 per week. I strongly support Sir William Treloar's appeal, who will be glad to receive subscriptions at his address, 69, Ludgate-hill, London, E.C.

I am, Sir, yours faithfully,
THOMAS RIPPON.

114, Downs Park-road, Clapton, N.E., Jan. 25th, 1910.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—Mr. Sinclair White's letter on the use of clamps in gastro-enterostomy recalls a case where I operated for hæmatemesis. Before making the anastomosis between stomach and bowel I explored the stomach through a free posterior gastro-enterostomy incision and completed the operation without clamps and also without special difficulty. I may add also that after one gastro-enterostomy where clamps were used another of my patients nearly succumbed from post-operative hæmorrhage.

I am, Sir, yours faithfully,
Huddersfield, Jan. 24th, 1910. NORMAN PORRITT.

"IN PIAM MEMORIAM."

To the Editor of THE LANCET.

SIR,—I should like to write a few words in your largely circulated journal "in memoriam" of the 100th anniversary of the birth of Dr. Henry Jeaffreson, which took place on Jan. 24th, 1810.

I may mention that he held the post of physician to St. Bartholomew's Hospital for a great many years, and although he never contributed any papers to the medical press or, in fact, wrote any work on medicine, enjoyed for years the confidence of medical men as consultant and did a very large practice among them. Unfortunately, when comparatively in the prime of life he contracted typhus while attending a medical student, and died after a short illness in December, 1866. Numbers of his pupils have attained high positions in the medical world and many more can testify to his valuable bedside instruction. His daughter and I, his nephew, and one of his ever grateful and affectionate pupils, will esteem it a great favour if you will publish this letter.—I am, Sirs, yours faithfully,

Dalston, N.E., Jan. 22nd, 1910. HAMPTON BREWER.

A BATH CENTENARIAN.—Mrs. Margaret Arthurs of Bath died on Jan. 17th. The deceased was born on June 5th, 1808.

WATER-SUPPLIES IN GLAMORGAN AND MONMOUTHSHIRE.—The proposals of the Glamorgan and the Monmouthshire county councils to supply portions of their respective counties with water were not approved by the last Parliament, and Bills which embodied these proposals were not carried further than the preliminary stages. Attempts will therefore be made in the next session to carry out the intentions of the county councils piecemeal. The Rhondda and Pontypridd urban district councils will ask for the sanction of Parliament to purchase the waterworks undertaking of the Pontypridd waterworks company at a cost of nearly £300,000. A portion of the Rhondda district and the whole of Pontypridd are supplied at present by the company, who are empowered to carry out additional works. The water-supply of both districts has long been of an unsatisfactory character, and the proposed purchase by the two district councils and the formation of a joint water board should be a solution of many difficulties which have occurred in recent years. The neighbouring urban district of Mountain Ash is also applying to Parliament for powers to obtain additional water-supplies from the Breconshire hills. In the Monmouthshire valleys a scheme involving an expenditure of nearly a quarter of a million sterling is being promoted by the urban district councils of Abertillery, Abercarn, and Risca. It is proposed to throw a dam across one of the Breconshire valleys and impound the water of the river Grwyne Fawr.

A VISIT TO THE MEAT-PACKING HOUSES AND ABATTOIRS OF TORONTO.

(BY A SPECIAL CORRESPONDENT.)

UP to 1907 there was no meat inspection in Canada, but legislation towards this end ensued because public opinion in Europe, and in Great Britain in particular, had been so greatly stirred by the publication in THE LANCET, and subsequently in other journals, and through various sources, of the condition of affairs in certain of the Chicago meat-packing houses. For the benefit of the foreign consumer, therefore, inspection of meat intended for export was decided upon by the Dominion Government, and the Meat and Canned Foods Act was framed, which received the Royal Assent, and came into force in the early part of September, 1907. By the provisions of this Act a meat inspection service of the Canadian Department of Agriculture was formed, and this is now carried on under the direction of Mr. J. G. Rutherford under the lengthy title of Veterinary Inspector-General and Live-stock Commissioner. This Act, so clearly devised for the protection of export trade, applies, only with certain qualifications, to the inspection of meat for home consumption. Consequently meat inspection in Canada is in a somewhat anomalous condition, for whereas meat intended for export is subject to thorough inspection, that intended for domestic food is subject to only such inspection as a particular province may arrange for. The passage of the Act has had the effect, however, of arousing public sentiment to a considerable extent, and as the matter now stands most of the large packing houses have voluntarily made themselves amenable to the meat inspection regulations as laid down for the export trade. Carcasses sent out from these establishments are marked with the crown and the words "Canada Approved," together with the number of the establishment. This departure has been attended with good results to all concerned, from the standpoint of both health and profit, for buyers accept it, and rightly too, as a guarantee that the meat is in a healthy condition, and are willing to pay a higher price. There are at the present time employed in the meat-packing establishments throughout Canada 68 veterinary inspectors, all of whom have received special training in meat inspection and have passed an examination as to their qualifications.

There are in Toronto several large meat-packing houses, one or two being comparable with the immense concerns in Chicago. Recently I have been visiting the principal of these, as well as the abattoirs of the city, and the impressions which I have derived as to the general arrangements here and the sanitary provisions are, as will be seen, very favourable. The first establishment to which I paid a visit is, I was told, the largest meat packing house in the British Empire—I refer to the William Davies Company, Limited. It is situated a mile or so distant from the city to the east, in close proximity to Lake Ontario and the railways. The building itself is four-storeyed and resembles an ordinary factory building of rather a bygone type. The superintendent showed me practically every nook and corner of the place and was most patient and courteous in answering questions and explaining fully the arrangements and conduct of the business. At this establishment hogs mainly are slaughtered. The killing is done on the second floor of a two-storey annex to the building, which is lighted and ventilated from above. The *modus operandi* is the same as followed in Chicago. The pigs are driven from the outside up inclined passageways, entering the annex when they reach the second floor. Each pig is then seized by its hinder legs, a loop knot is attached to them, and with head downwards at a convenient height for the slaughterer is slung on to a rail and is pushed along a passage on which stands the slaughterer, who cuts the throat of each animal as it passes along. At the other end of the passage are two men who unhook the pigs as they reach them and throw them into a large tank full of scalding water. The pigs are propelled along this tank by men with long poles to the further end, when their bodies are sufficiently scalded to allow of the removal of the bristles with ease. They are raised on to a moving platform and enter a machine which scrapes off almost all the bristles, those few remaining being removed by hand. The carcasses intended for the British market are then singed. The work of driving the pigs into the building, killing, scalding, scraping, and singeing is done with the utmost despatch, certainly the feature of the whole proceeding being the great skill and celerity employed in the details of the various operations.

The inspectors in making ante-mortem and post-mortem examinations have a delicate and arduous task. All animals intended for slaughter are examined by a veterinary inspector before they are allowed to enter the killing floor, the animals passing in single file before the inspector so that no grave external mischief could escape notice. To those found to be diseased or showing suspicious symptoms a tag is affixed and they are held back until the killing for the day is over, when they are slaughtered separately. The post-mortem inspection takes place by two inspectors immediately after the bristles have been removed from the carcasses. Those carcasses which are obviously unsound, mainly from tuberculosis, or are found from any cause to be unfit for food, are forthwith marked with a condemned tag. The carcasses which pass favourably through this ordeal are placed on the special inspectors' rail, having their severed heads and tongues and all the intestines attached to them. Here they are all examined in detail, and those in which no fault can be found are passed for packing. Those concerning which suspicion is entertained are marked "Held" and set apart for further examination. These carcasses are, of course, the important ones, for it is on the latitude or rigour of these inspections that the measure of public protection depends. I visited a room in which an inspector was making a careful examination of suspected carcasses, and can state that his inspection throughout was of a most exhaustive character. Every organ was examined systematically and thoroughly, and I was convinced that nothing the consumption of which could be deleterious to the public would get through such tests. Tuberculosis is, of course, the disease on account of which the majority of animals and carcasses are condemned.

The carcasses of animals which have successfully passed inspection are now divided and put to hang in airy and well-ventilated chambers until the meat is considered to be in a fit state to be prepared for the market in various ways. A large proportion of the meat is placed in cold storage chambers, and in a modern packing house the refrigerating plant plays a very important part. The cold storage chambers at the packing house of which I am now writing are contained in a building recently built expressly for the purpose, which contains four storeys and a basement. It is by far the largest building of its kind in the Dominion, I was told. It has 24-inch walls, of which the outer layer is of vitrified bricks. The interior of these walls is covered with cork 4 inches thick, in two layers, no nails being used to keep the cork in position, but an ingenious arrangement of pegs; while the whole inner surface is coated with cement. In this way, whatever the outside temperature, zero can be maintained inside. The building contains 12 large chambers. Here the meat is quickly frozen and maintained in that condition frequently for some months.

Meat intended for the British market occurs principally in the form of ham and bacon, and I witnessed the processes through which it went before it was ready to be packed. Extreme cleanliness distinguished all these processes, and the care observed to avoid any kind of contamination is scrupulously minute. The meat before being packed for export is sprinkled externally with boric acid powder, a powder of ½ to ⅔ of 1 per cent. in strength only being used, and then placed in stout wooden boxes, the lids being forced down by hydraulic pressure. The boric acid sprinkling is no part of the cure of the bacon, but can be washed off previous to smoking in the place of consumption. More than 11,000 tins of canned meat are turned out each day from this establishment, many of the carcasses being brought from a neighbouring abattoir, but only a rather small proportion of the canned meat, the beef, is exported to Great Britain; by far the greater part is consumed at home. In the North-West, for obvious reasons, canned goods are greatly in request. All needful precautions seem to be taken to ensure that such food is prepared and sent out under good sanitary conditions. The rooms and workmen are clean and the meat is handled as little as possible, much ingenious machinery being used to this end in the processes through which the meat passes prior to canning.

The preparation of sausage meat is also carried on largely by this firm. In the making of sausage meat it is impossible to avoid a considerable amount of handling of the foodstuff, but the men engaged in this industry are required to maintain a high standard of personal cleanliness and are never allowed to enter the sausage-making room nor to touch the meat until they have thoroughly washed. Sausages, canned meats, and portions of carcasses intended for curing must be prepared only from carcasses or portions which have been marked "Canada Approved," and which on re-inspection have been found to be fit for food. In the basement of the main building are stored thousands of casks of pork preserved in brine, intended for the English market, in which all these formalities have been observed.

To sum up the impressions which I received from my visits I came to the conclusion that the proprietors of this enterprise had a due sense of their responsibilities. The veterinary inspection is thorough, the treatment of the foodstuff when passed as sound is cleanly. The building, though not new and perhaps not constructed in the manner best calculated to attain the most efficient sanitary results, is kept in a satisfactory hygienic state. Water is plentiful, for the establishment is close to the lake, and it is used lavishly in flushing the floors and for purposes of general cleanliness.

The meat-packing house which I next visited (Messrs. Gunns, Limited) is situated some seven miles to the west of Toronto, amid picturesque surroundings. The building this time was modern and well-adapted for its purpose. The time of my visit, the week before Christmas, was, from the standpoint of the proprietors, unfavourable, in that slaughtering was being done on a large scale, and the bustle incident upon preparing meat for the Christmas market was not conducive to tidiness and order. From my point of view the time could not have been better chosen. I was not expected, but owed my admission to the chief veterinary inspector, Dr. W. Wilson, who saw no inconvenience in my presence. Therefore, I saw the working of the establishment at high pressure, when the temptation to scamp any routine that might cause delay was considerable. The pace at which the work was being done was gruesome. Pigs were being slaughtered at the rate of 260 per hour, besides 200 or so bullocks daily. The building itself is quite new and a model of its kind. The slaughtering floor is at the top of the building, the best situation, perhaps, when both a sanitary and a commercial outlook are considered. An abattoir on the ground floor and not connected with other buildings is the ideal, but in a commercial house, in which all the by-products are utilised, and in which economy of space and labour are essential to a successful result, the most convenient position for the slaughtering department is in the building but not on the ground floor. By being placed on the top floor sanitation and convenience are alike served, for if the roof be constructed of glass and iron, as it is in the establishment I am describing, light and air in abundance are easily procurable from above and from every side. The convenience of the slaughtering department being placed at some height is that the by-products, and especially the blood, can be distributed far more easily by means of shoots and mechanical appliances to the different parts of the building in which they are to be treated. This abattoir appeared to me to fulfil in a most satisfactory manner all needful sanitary conditions. The light was good and ventilation excellent. Although, as I have said, pigs and beasts were being killed with the greatest celerity there was no unpleasant odour. The floor, made of hard and impermeable material, is continually flushed with water. The rooms throughout the building are all large and airy, and this is particularly the case with the numerous cold storage rooms. The lavatory and water-closet arrangements for the operatives are deserving also of high praise. The accommodation in this direction is plentiful and good.

A third meat-packing house (Messrs. D. B. Martin and Company) through which I went is situated a few hundred yards from the one just described. It was built at the same time, and with the exception of being somewhat small resembled it closely. I do not describe it in any detail, but the reader will imagine in it the presence of much the same technique and caution in the various processes, and with them gather that it is the general desire in Canadian packing-houses to recognise their responsibilities towards the public.

The last establishment which I inspected, the Harris Abattoir Company, Limited, is known as an abattoir, but it is a large abattoir in which the carcasses are hung after slaughter, and in which more than 65,000 cattle, hogs and bullocks, are yearly slaughtered, as well as some sheep

On the occasion of this visit, also, it was but three days before Christmas, and slaughtering was being done at express speed. Three hundred bullocks and hogs were being killed in the day and a large number of sheep. The slaughtering department is on an upper floor, with iron and glass roof and well ventilated and lighted from the top and sides. The floor is constructed as follows. First, double-tongued joists and grooved wood are laid down, then liquid pitch with insulating paper placed over, then another layer of pitch on which hot vitrified bricks are laid, the bricks are flushed with cement and all the interstices thoroughly filled. Here I observed at close range the slaughtering of bullocks. The animal is stunned by a blow from a pole-axe, and immediately after its throat is cut. When it has bled sufficiently the carcass is flayed, disembowelled, carefully inspected, slung up, divided from end to end, dressed, and hung in a hanging room. The animals which I saw killed in this manner appeared to die easily, and I was informed by the veterinary inspector that in his judgment beasts so killed suffer practically nothing. The fact must here be taken into consideration that the slaughterers are experts and so skilful and practised in delivering the blow that there can be no doubt that the animals feel little, if at all, after being hit. I am, however, aware that this mode of slaughtering is eyed askance by many, not only in Germany and Switzerland, while in these two countries quicker and more certain methods of slaughtering are in vogue. Cleanliness was scrupulously practised throughout the building, and water was used unsparingly to flush the floor in the slaughtering department. Possibly the feature that will most impress a visitor to an abattoir or to a meat-packing house, over and above the great celerity displayed in all the operations, is the remarkable use made of all the by-products. Literally nothing is wasted. The blood is conveyed down from the slaughtering-room to the department underneath, where it is subjected to treatment which renders it a valuable fertilising agent. The fatty portions of the animals are used for foodstuffs, for butter and lard substitutes. The oil is expressed from the fat and is transported to Germany to be employed in the manufacture of oleo-margarine. The remainder is a substance known as oleo-stearine, which in combination with cotton-seed oil forms a lard substitute so closely resembling the genuine article that it is said to be almost impossible even for a connoisseur in lard to distinguish the difference. The best straight bones are used in the manufacture of knife and toothbrush handles, and those that cannot be thus utilised are ground down for bone-meal, to be used as a food for fowls. From the white hoofs of the cattle buttons are made, and from the sinews of the animals glue. The intestines are cleaned and scraped for employment as sausage skins. The residue is used for manure.

The conclusions at which I arrived as a result of my visits to the Toronto packing houses and abattoirs were that they are conducted in a sanitary manner, and that the effect of the Meat and Canned Foods Act has been two-fold. In the first place, it has ensured for all those houses which do an export trade a thoroughly efficient meat inspection, and in consequence a thorough inspection of much of the meat used for domestic purposes. In the second place, it has aroused the Canadian public to a sense of the danger and foolishness of the existing lack of general meat inspection and has created a demand for such inspection. It must be borne in mind, too, that the inspectors are responsible for the sanitary and hygienic conditions of the establishments under their charge, so that when it is said an abattoir or meat-packing house is under Government veterinary inspection the statement is a guarantee that not only is the meat inspected properly but the establishment throughout is in an efficient sanitary state.

LONDON SCHOOL OF TROPICAL MEDICINE.—The prize of £50 awarded annually by Sir John Craggs, M.V.O., to a past or present student of the London School of Tropical Medicine, has been awarded to Dr. G. A. Turner of Johannesburg, for "An Account of some Helminths occurring among the South African Natives."—Arrangements have been made for lectures on tropical subjects to be delivered to nurses at the London School of Tropical Medicine, Royal Albert Dock, E. Any qualified nurse may attend the course, whether she intends proceeding abroad or not.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Ordinances and Regulations, University of Bristol.

THE council of the University has issued certain provisional ordinances and regulations for degrees, certificates, and diplomas, and pending submission of the ordinances to the court these will be in force as regulations.

The Lord Mayor's Hospital Sunday Fund.

Next Sunday the collections for this fund will be made in Bristol and the neighbourhood. The Lord Mayor, in issuing his annual appeal, points out that the ordinary income of the chief medical charities for the past year falls short of the expenditure by £7000. It is therefore hoped that a record sum may be realised. An encouraging feature is the large amounts contributed to the principal medical institutions by workpeople, the employees of the Imperial Tobacco Company and of Messrs. E. S. and A. Robinson having made handsome contributions.

The Children's Hospital, Bristol.

A well-known figure has disappeared from the Children's Hospital. Mr. J. T. Davies, who for 20 years was chief dispenser to the hospital, has just died. He was a most efficient and enthusiastic worker, and his death means a serious loss to the institution.

Bristol Dispensary.

At the annual meeting of this institution, Mr. Fenwick Richards in the chair, it was reported that 10,993 patients were treated during 1909, while the number of midwifery notes issued was 687, as against 536 in the preceding year. Expenditure had exceeded income by £22, but there was still a balance in hand of £130 14*s.* 7*d.* The Dispensary lying-in notes are for the provision of trained midwives and of medical aid when required.

The Royal Eye Infirmary, Plymouth.

The annual meeting of the subscribers of the Royal Eye Infirmary, Plymouth, was held on Jan. 19th under the presidency of the mayor. The medical report stated that during 1909 the out-patients numbered 2372, an increase of 128 compared with 1908. 300 in-patients had been admitted, against 278 in the previous year. The average daily number of in-patients was 24. The financial statement was satisfactory and showed the income was £1845 and a favourable balance remained.

Jan. 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Reconstruction of the East Dispensary: Formal Opening by the Earl of Derby.

THE Earl and Countess of Derby attended the opening ceremony in connexion with the new East Dispensary in Richmond-row on Jan. 13th. Lord Derby, having accepted the key and performed the opening ceremony, eulogised the work of the institution and thanked the committee for having given him the privilege of opening such a useful building. The Liverpool dispensaries, of which there are three in the city and which date from the year 1778, afford medical assistance to over 1000 individuals per week. This entails on the medical staff about 2500 weekly attendances, of which about 100 are paid at the homes of the patients. The cost of the new building and its equipment would be about £4000, of which £1413 have still to be raised.

Foreign Gift to the Liverpool School of Tropical Medicine.

The secretary of the School of Tropical Medicine has received a letter from the Compagnie du Kasai, dated Brussels, Jan. 8th, in which the president of the company says: "We have much pleasure in sending you the enclosed cheque for £100 towards the funds of the Liverpool School of Tropical Medicine as a slight recognition of the magnificent work your school is doing in the cause of tropical medicine."

Hospital Sunday Fund.

The collections on behalf of the Hospital Sunday Fund were made in the various churches and chapels of Liverpool and district on Jan. 9th. The full amounts have not come to hand yet, but it is expected that there will be an increase on last year's collections. Ten ladies and gentlemen have each guaranteed 10 per cent. on the amount collected for 1910 in excess of the year 1909. Unfortunately, the collections for the Hospital Saturday and Sunday Funds for 1909 showed a decrease, and the guarantors were not called upon to pay anything. It is to be hoped that the joint contributions this year will be such as to demand the fulfilment of the generous offer of the guarantors.

Accommodation for the Feeble-Minded in the West Derby Union.

At a meeting of the West Derby guardians held on Jan. 5th, it was reported that the Mill Road Infirmary committee, having considered the question of the accommodation of feeble-minded and imbecile persons chargeable to the union, had resolved that, in its opinion, the time had now arrived when the guardians should again impress upon the Local Government Board the necessity for additional and separate accommodation being provided for such cases. The minutes of the committee having been confirmed, it was resolved that a committee, consisting of the chairman of the board, the chairmen of the various committees, the medical members of the board, and two of the lady guardians, be appointed to deal with the matter.

Jan. 24th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Lunacy in Glasgow.

THE lunacy statistics of the Glasgow parish council issued in its annual report form very interesting and instructive reading. This report is specially interesting in that it presents a unique nine years' record of the insanity rate in a great industrial area. During that time the proportion of pauper lunatics chargeable to the parish of Glasgow has risen steadily from 314·7 per 100,000 of the population in 1901 to 371·8 in 1909. Of course, it must be recollected in connexion with these figures that by far the greater number of the cases sent to asylums are incurable, and that in consequence there must be a steady accumulation of patients. To this must be added the fact that every year sees a growing disposition to send to asylums persons suffering from senile forms of mental weakness. The true method of viewing such statistics is from the point of view of the production-rate, and since 1901 this has fluctuated without increasing. For the past year it was 67·8, as against 68·7 per 100,000 in 1907–08. If all persons under 15 are rejected (for children do not *become* insane) and the persons certified insane are divided into two classes—viz., those under 45 and those over 45 years—we find that the rate exhibited by the former class is remarkably steady, the extremes being 8·2 in 1903–04 and 6·8 in 1907–08 per 10,000 of the persons living at these ages. The margin of variation is very small and any tendency that appears is in the way of improvement. On the other hand, the figures referring to the period over 45 years show greater fluctuation from year to year with a general tendency towards increase. This increase is, however, completely accounted for by the changes in industrial and social conditions, which favour curtailment of labour for the partially fit, and encourage the use of public institutions for the care of the feeble in mind and body. It is worth noting in this connexion that during the year 1907–08, which was a year of great depression in trade, the number of persons certified insane aged over 45 years was 193, being the largest number in any of the years under review, and showing a proportion of 18·4 per 10,000. If the last nine years are divided into three periods each of three years the annual average proportion per 10,000 of persons certified insane over 45 was: 14 for the first period, 13·4 for the second, and 17 for the last period.

Serious Outbreak of Diphtheria in Keith.

A rather serious outbreak of diphtheria has occurred in Fife-Keith. On Jan. 10th one case of diphtheria was reported, and up to the 17th 16 cases had been notified. From the medical officer's report it appears that, as regards the source, the only point common to all the cases was that they were receiving milk from the same dairy. The town council has had the matter under discussion and has agreed to issue an order against the dairy ordering it to be closed until otherwise ordered, and it has also been agreed to close the Fife-Keith infant school for a fortnight. One case so far has proved fatal.

Dundee Asylum Board and Incipient Cases.

The scheme carried on by the directors of the Royal Asylum for dealing with incipient cases at the infirmary is working very satisfactorily. At a meeting of the directors of the asylum on Jan. 17th Dr MacEwan said that the directors had every reason to be gratified with the results obtained. Twenty-two cases had been under treatment during the past year with a very considerable degree of success. Many of the cases had no doubt been prevented from relapsing into insanity, and many were saved from temporary aberrations, which might have necessitated their being sent to an asylum. It was a great improvement on the ordinary methods of dealing with these cases. The medical profession was very much interested in the system, and he noticed that the Edinburgh people had agreed to do something similar in the infirmary there.

Medical Inspection of Ross-shire Schools.

At a conference between the medical inspection committee and representatives of the public health committee of the county council, held at Dingwall, the draft scheme for medical inspection of children attending schools within the county was under consideration. The scheme provides for a working arrangement between the county council and the secondary committee, so that the services of officers will be at the disposal of both authorities. The county is divided into (1) the mainland, except certain west coast areas; and (2) the Lews, with the areas excepted from the mainland. The proposal is that the county medical officer of health shall, under an honorarium, devote part of his time to the work, while two medical officers shall be appointed, one for each of the districts, at a salary of £250 each per annum, with a specified scale for travelling allowances. The scheme is to be submitted to the various school boards for their observations before it is forwarded to the department for sanction.

Medical Inspection in the County of Aberdeen.

A conference between the county committee on secondary education and representatives of school boards in the county, to consider the amended scheme of medical inspection of school children, was held in the County Hall, Aberdeen. The chairman said that in compliance with the resolution of the last conference, the secondary education committee had carefully revised the scheme, and in framing it had kept in view the diverse views that were expressed at the previous conference, trying, as far as was consistent with efficiency, to meet them. The first important point the committee dealt with was the question of the employment of local medical practitioners. The committee came to the unanimous decision that no scheme would be approved by the Secondary Education Department which involved the employment of such, and if any school board wished to employ such, they would have to frame a scheme for themselves. The committee concluded that with regard to nurses it might be well in the meantime to leave them out of the scheme, the reason not being that it did not believe that nurses would be necessary to the working of the scheme, but because, while the inspection would be carried out under the county scheme, the treatment of patients must be carried out by the local school boards and nurses would fall to be appointed by them where necessary. The committee also considered the question of weighing machines, and found that these could be provided for £650 or so, as against the former estimate of £950. After the initiation of the scheme, the chief medical officer would be appointed, and they would be guided by his advice as to the extent of the assistance he might require. If all the boards joined in the scheme they might require two assistants, but otherwise only one. For the first year, including apparatus, the scheme would cost totally £1550 as against the former estimate of £2050. Dr. R. M. Wilson (Tarty) moved the scheme be rejected, but after discussion it was approved by 62 votes to 11, 6 declining to vote.

Jan. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

AT a meeting of the Council held on Jan. 20th, at the request of the Royal Humane Society, the President, Mr. J. Lentaigne, presented Mr. Alfred Sheridan, a Licentiate of the College, with the bronze medal of the society for saving a man from drowning on August 24th last in the sea near Westport, County Mayo. With some difficulty Mr. Sheridan brought the man ashore, and after about an hour's strenuous medical attention brought him out of danger. The President congratulated Mr. Sheridan on his brave conduct. This makes the seventh Licentiate of the Royal College of Surgeons in Ireland who has within the past few years received the recognition of the Royal Humane Society for saving life from drowning. The names of the seven are: Mr. S. M. Boyd, Mr. S. Cox, Mr. J. Cuffe, Mr. C. Eccles, Mr. T. C. M'Kenzie, Mr. J. D. Ryan, and Mr. A. Sheridan.

Irish Health Resorts.

A public conference of Irish municipal bodies was held a few days ago at the Dublin County Council Chambers for the purpose of considering the best means of taking action under the Health Resorts and Water Places (Ireland) Act, which enables local bodies to levy a rate not exceeding 1*d.* in the £ for the purpose of advertising the attractions of the health resorts and watering places of Ireland. A suggestion was made that local tourists' committees should be formed to control the special advertising of their respective districts, and that a central council should be established to create a demand and circulate such advertising literature. A resolution was unanimously passed to the effect that the delegates should invite their respective councils to strike the rate and to carry out a scheme of uniform advertising through a central council. The health resorts and mineral springs of Ireland have been sadly neglected, although in the first encyclopædic volume dealing with the subject of mineral and medicinal waters—which was the work of a celebrated Irish chemist and natural historian, John Rutty, M.D., and saw the light in 1757—the springs of Tralee, of Mallow, of Swanlinbar, and of Drumona arc treated in essays of considerable length.

A Students' Union in Dublin.

By the formation of a Students' Union a movement has been inaugurated in Dublin which should have a highly favourable influence on the medical student life of the Irish metropolis. A circular has been issued announcing the first meeting and formulating its objects. It is there pointed out that the idea is well-known to English and Scottish medical schools. It is also impressed upon the reader that such an institution helps to build character as well as to facilitate study, and contributes to the removal of prejudices which can be effected only by "mixing with their fellows in a union." Sir Henry R. Swanzy has with his usual geniality joined the union, and headed the list of subscribers, to which the Dean of the school has contributed £25. The movement has started well and deserves every success.

The Abbey Sanatorium, Belfast.

At a meeting of the Belfast board of guardians held on Jan. 18th the report of Mr. Robert Hall, medical officer of the Abbey Sanatorium for Consumptives, was submitted on the work done during the six months ended Sept. 30th, 1909. It appeared that 584 patients were treated (16 more than in the corresponding period of 1908) and 319 were discharged, leaving 265 under treatment. The medical officer said wisely that he never urged patients, especially advanced cases of the disease, to return to their homes, but rather desired that they should remain in the sanatorium hospital and thus prevent the spread of infection outside—a fact which accounted to a large extent for the high tuberculosis death-rate. If another pavilion was built it would enable him to transfer all female patients from the hospital, and thus have not only a proper classification but improved treatment for those patients. He again referred to the insufficiency of the resident medical staff and the necessity of some other form of lighting than oil lamps, which interferes with the open-air treatment in the wards when artificial light is needed. During the six months the Abbey Sanatorium cost £6286 19*s.* 4*d.*, which included £694 18*s.* 3*d.* expenditure out of loans. This was a decrease on the amount expended in the half year ended March 31st, 1909, of £496 6*s.* 3*d.* The average weekly cost per patient, under all headings, amounted to 16*s.* 8½*d.* This cost is less than for the half year ended March, 1909, when it was 17*s.* 10½*d.* It also appeared that 188 patients had passed through the sanatorium in the half year under review and were now earning money for their families, their "working capacity" having been restored. There can be no doubt that the Abbey Sanatorium for Consumptives, one of the largest and most efficient of the kind established under the Poor-law system in the three kingdoms, is doing most admirable work, and its establishment is a great credit to the Belfast board of guardians. But it is deplorable to know that there are at present 87 consumptive patients—viz., 45 males and 42 females—in the Belfast Union Infirmary for whom there is not room at the Abbey Sanatorium. In Mr. Hall's report full details are given as to the number of patients discharged, with their age, sex, occupation, and the average duration of their stay in the sanatorium. They are classified as "greatly improved," "improved," "not improved," "not long enough in Abbey," and "died."

The Disposal of Belfast Sewage.

The members of a subcommittee of the Belfast Harbour Commissioners waited on the city surveyor of the Belfast corporation and desired him, as engineer to the corporation, to lodge plans with regard to any work he proposed doing over the property of the Harbour Commissioners. They pointed out that a storm overflow does not include a sewer through which crude sewage can be discharged into Belfast Lough, their estate; and made other recommendations with regard to crude sewage. The matter is now in the hands of the corporation.

Dungiven Dispensary.

Dr. Arthur G. Martin, medical officer of the Ballykelly Dispensary district, has been elected medical officer of Dungiven Dispensary, county Derry, in place of the late Mr. Michael Higgins, at a salary of £100 per annum, and an addition of £15 as medical officer of health.

Jan. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Floods.

THE flooded Seine is seriously affecting the city, houses are being rendered uninhabitable, traffic is suspended, and the greatest hardships and privations are being endured. Worse to think of is that the medical sequelæ are bound to be terrible, as the contamination of drinking water and soil begins to bear fruit.

Treatment of Tuberculous Fistulæ by Injections of Subnitrate of Bismuth.

In the treatment of patients suffering from tuberculous fistulæ M. de Fourmestraux has used a modification of Beck's method, in which injections of a mixture of vaseline and subnitrate of bismuth are given. At a recent meeting of the Société de l'Internat des Hôpitaux he gave details of 11 cases treated in this way. The results were excellent in such conditions as tubercle of the testis, trochanteric fistulæ, spina ventosa, and the like, in which the tuberculous cavities were shallow and the fistulæ were small, but when the cavities were deep and the fistulæ extensive the results were less satisfactory. M. de Fourmestraux referred to the cases of Eggenbrener and Kaufmann, in which toxic phenomena were observed, and said that a female patient had shown symptoms of illness after the injection of 80 grammes of a mixture containing 20 grammes of subnitrate of bismuth. He considered that the principal advantage of Beck's method was its great simplicity, but it was not free from danger, and before making use of it the surgeon should satisfy himself as to the state of the patient's liver and kidneys.

Tubal Pregnancy following External Migration of an Ovule.

At a meeting of the Surgical Society held on Jan. 5th M. Marion presented a report on a case which had been brought before the society by M. Silhol. The patient was a young woman who on Sept. 15th was suddenly seized with severe abdominal pain, accompanied by pallor, cold perspiration, faintness, and all the symptoms of internal hæmorrhage. M. Silhol did not see her until 48 hours afterwards, by which time the symptoms had improved. The presence of fluid in the pouch of Douglas suggested to him the diagnosis of hæmatocele from the rupture of an extra-uterine pregnancy, but the circumstances seemed to him very strange because he was convinced that the woman could only have been fertilised between Sept. 3rd and 7th. In the course of a few weeks he found in the left side of the pouch of Douglas a steadily growing tumour which presented all the characters of a tubal pregnancy. An operation was accordingly performed at which there were found in the pouch of Douglas both an encysted collection of blood and an extra-uterine pregnancy in the ampulla of the left Fallopian tube. A further examination of the specimen after removal showed that this tube was pervious but that the adjoining ovary had undergone cystic change. On the right side the ovary was quite normal, with a recent cicatrix in the corpus luteum, and the Fallopian tube was obliterated. It was therefore obvious that the case was one of "crossed pregnancy" or external migration of the ovule. The hæmatocele was probably due to exceptionally free hæmorrhage accompanying the process of ovulation.

The Pasteur Institute and Radium Research Work.

The Pasteur Institute has decided to contribute 400,000 francs towards the fund for the erection of a large laboratory, the plans of which have been submitted by M. Nénot to the University of Paris, and which, under the name of the Palais du Radium, will be used for the study of radio-active phenomena and their therapeutic applications. M. Nénot will commence operations at once. The contribution offered by the Pasteur Institute is derived from the accumulated arrears of the Osiris bequest.

The Treatment of Deformity due to Spastic Diplegia.

In order to correct the deformity produced by spastic diplegia (Little's disease) M. Pierre Delbet performed osteotomy on each femur of a young girl whom he subsequently showed at a meeting of the Academy of Medicine held on Jan. 11th. A 7 months child, she did not walk until she was 3 years of age, and it was then that the curvature of her lower limbs was discovered. When she was 14 years of age an attempt was made to correct this by dividing the adductor muscles on both sides and also the two tendons of Achilles, and three years afterwards she underwent two further operations. As her style of walking was still very unsatisfactory recourse was had in the end of last April to a directly transverse section of each femur below the trochanters, and after rotation of the limbs to the required extent they were fixed in a plaster apparatus. After 37 days it was found that some degree of consolidation had taken place, but a tendency to renewal of the curvature still existed. An extension apparatus was therefore applied to each limb and retained in position for 12 days, after which treatment by massage and movement was commenced. At present—i.e., six months after the osteotomy—the girl walked well and easily.

Fracture of the Fibula and Epiphyseal Detachment of the Lower End of the Tibia.

At a recent meeting of the Surgical Society M. Broca said that he had seen six children suffering from epiphyseal detachment of the lower extremity of the tibia, together with fracture of the fibula, producing exactly the same effect as Dupuytren's fracture in the adult. He had special opportunities of investigating this lesion in three cases, radiographs of which were shown. He said that such cases were evidently not exceptional. M. Kermisson said that in some cases this lesion did not cause much displacement, but in others the displacement was considerable.

Jan. 24th.

TWENTY-ONE YEARS' MEDICAL SERVICE.—At a meeting of the Long Ashton (Somerset) board of guardians held on Jan. 18th a vote of thanks was awarded to Mr. William Monckton, M.R.C.S. Eng., L.R.C.P. Edin., who resigned the post of medical officer and public vaccinator for the sixth district after 21 years' service.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Simplified Method of Disinfection of the Skin.

AT a recent meeting of the Berlin Medical Society Dr. Federmann read a paper on the disinfection of the skin according to Grossich's method. This procedure consists in painting tincture of iodine on the skin with careful avoidance of any previous washing. The tincture of iodine is applied twice to the skin within a few seconds and immediately after it has dried, which it usually does in less than half a minute, an operation may be performed. Dr. Federmann pointed out that the usual method of disinfection by washing with soap and water was very tiresome and not perfectly reliable because it brought the micro-organisms from the deeper layers of the skin to the surface. The theory of Grossich's method was that the alcohol hardened the skin and dissolved the fat, so that the iodine could easily penetrate to the deeper layers of the skin and destroy the bacteria there. When the skin was previously washed with soap and water the epidermis became swollen and less permeable to the iodine, so that its disinfecting action was hindered. Dr. Unger confirmed the satisfactory results obtained by Grossich's method. He called attention to its quickness, which made it specially applicable in urgent operations such as those for hæmorrhage and incarcerated hernia, as the patient might be prepared for the operation within two minutes. Primary union was obtained in 25 laparotomies in which the skin was sterilised by this method before operation, the scar tissue being even stronger than the skin which it replaced. A further advantage of disinfection with iodine was that the shock occasioned by washing with soap and water was completely avoided, a circumstance which was sometimes very important, as, for instance, in cases of peritonitis. Dr. Schindler reported that of 54 cases of laparotomy in which this method was used 53 recovered without reaction. It is advisable also to paint the sutures with the tincture, and to repeat this procedure as often as the dressing is changed. In recent injuries painting of the surroundings of the wound with iodine made other disinfectants unnecessary. Shaving of the skin preparatory to an operation should be performed without soap and water.

Paying Wards in Municipal Hospitals.

The Berlin municipal authorities have lately sanctioned the establishment of paying wards in the municipal hospitals. A proposal to this effect was made in the council more than a year ago and a paragraph on the subject appeared in THE LANCET of Dec. 12th, 1908. In consequence of this innovation the hospital committee of the council recently asked the opinion of the chief physicians and surgeons as to their fees for attendance on these better-class patients. The question has long been a subject of discussion in medical circles, especially among medical men connected with private sanatoriums, who feared that they might suffer from the competition of the public hospitals. The question of fees for private patients in these hospitals was also discussed at the last general meeting of the well-known medical defence union called the Leipziger Verband, and a motion was adopted to the effect that patients treated in the paying wards should be obliged to remunerate the hospital physicians or surgeons just as in private sanatoriums. The Berlin branch of the Leipziger Verband, in accordance with the above vote of the general meeting, has therefore addressed the medical staff of the Berlin municipal hospitals, asking them to delay replying to the municipal hospital committee until the question has been submitted to the committee of the Leipziger Verband. It must be recognised that the Leipziger Verband has by degrees acquired an influence which even the members of hospital staffs and other authorities cannot disregard.

Infants in High Altitudes.

Professor Neumann of Berlin, writing to the *Deutsche Medizinische Wochenschrift*, describes the condition of the infants in Alpine districts. During a stay at Arosa in Switzerland, a place situated about 1800 metres above the sea-level, he found that breast-feeding was comparatively rare. Of 97 infants, 56 were suckled, but of these only 17 were more than three months old. Of the 56 infants which were suckled 28 had artificial food together with the mother's milk. Notwithstanding this unreasonable feeding of the infants their average mortality for the last nine years was only 4·9 per cent., and this satisfactory result is certainly due to the altitude of the place. The dwellings were not too hot in summer, and other contributory causes of the low mortality were the dryness of the air, the absence of stormy weather, and the frequency of sunshine, which allowed much time to be spent out of doors. In Chur, the capital of the canton, situated a few miles from Arosa, about 600 metres above the sea-level, where the infants were fed in the same way, the infantile mortality was 11 per cent., while for Switzerland in general it was 18·9 per cent. Injudicious methods of feeding are in the higher districts counterbalanced by the climatic facilities for passing the day in the fresh air and sunshine. For the same reason rickets and convulsions and other nervous diseases of infancy are non-existent in Arosa. Professor Neumann has therefore suggested that rachitic infants and young children might derive benefit from a stay in the Alpine health resorts. The mountains are just as healthy for them as the seaside, and still more advantageous for nervous constitutions.

Jan. 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Lourdes and its "Cures."

THERE has recently been held an open discussion in the hall of the "Associazione Sanitaria" of Milan on the miraculous cures effected at Lourdes, the protagonists being the Padre Gemelli, a medically trained ecclesiastic, and the clinical professors and *privat-docents* of the Lombard University, Pavia, and the Lombard capital, Milan. The Padre, introduced by the President, Dr. Fortanini, professor of clinical medicine at Pavia, addressed his large and promiscuous audience, medical and lay, as a physician, not as a Churchman, premising, however, that before a cure effected at Lourdes could be recognised by the Holy See it must be examined and approved in Rome first by the Congregation of Rites, then by the "Consultatori," then by the cardinals, and finally by the Pope, whose decision is definitive. The "cures," proceeded the Padre Gemelli, have been estimated at over 7000, but, he added, about one-half that number—say, 2500—would be nearer the truth. Out of these he selected two cases as typical, one of Pierre Rouder, who in 1867, when 44 years old, fell from a tree and fractured the femur at the upper third. By neglect and subsequent ineffective treatment the bones were never properly united at the seat of fracture; a purulent sore supervened, and amputation was recommended. Rouder, however, bethought of him of Our Lady at Lourdes, and, sure enough, on entering the pool, he remained in it but a few minutes to emerge "cured." The second case, this time medical, was that of Joan Joulasne, born in 1872, and found in 1895 to be a tuberculous subject. Besides a crural abscess she had a spinal curvature presenting all the characteristics of Pott's disease. She, too, sought relief in the *piscina*, apparently without success at first, till the procession of the Sacrament went by, and then the waters of the pool took effect. She came out "cured" and no longer a hunchback. Having resumed his seat amid applause due to his eloquence, though by no means in every case to his reasoning, the Padre Gemelli's clinical report had to run the gauntlet of the medical experts, among whom Dr. Bonardi, *privat-docent* in medical pathology at Pavia, was the most trenchant, claiming for science a far more vigorously checked report of Rouder's "cure" than the Padre Gemelli's, and maintaining that the girl Joulasne was a neurotic, hysterical subject whose "cure" must be ruled out, because, demonstratively, her malady was a pseudo-Pott's disease such as is not unknown in similar tuberculo-neurotic patients, whose malady, under special conditions of novelty and emotion, seems to "lift" or disappear for a time, only in most instances to return. Criticism, much to the same effect, followed from the other experts, whose arguments seemed cogent in the ratio of their clinical knowledge and experience, till after a few of these (certainly the least authoritative) had given a reserved judgment or even a provisional adhesion to the Padre's induction, the Padre himself wound up the debate with an eloquent harangue. After which the assembly broke up, medical science to retain its opinion, shared by the more intelligent of the lay public.

Medico-Missionary Enterprise in the Post-Renaissance.

Interest, romantic as well as scientific and historical, clings to the record of missionary exploration in the late sixteenth and early seventeenth centuries. The "Dark Continent," the Far East, and South America were the chosen field of the explorers, mainly Jesuit in faith and Portuguese in nationality, who, in many cases, combined ardent nature study with religious zeal, and owed much of their proselytising success to the medical knowledge they imported from Europe and applied to the ailing aborigines. The whole subject has yet to be dealt with by the English-speaking historian, who will acquit himself imperfectly of his task if he fails to give the prominence to the medical equipment with which the emissary of the Church made the physical well-being of his savage *clientèle* the "condition precedent" of his Christianising propaganda. Materials have lately accumulated for him in the publications of the Padre Beccari and other lights of the Society of Jesus, under the title of "Rerum Æthiopicarum Scriptores Occidentales Inediti a Sæculo XVI. ad XIX. curante C. Beccari, S.J.," Vol. IV.; and at least two other treatises which have just seen the light, thanks to the Padre Emmanuele Barradas, S.J., and the Padre Emmanuele D'Almeida, S.J. All three have issued from the Roman press, the publisher being C. De Luigi.

Jan. 22nd.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Lodging-houses and Tuberculosis.

Dr. Okolicsányi Kuthij, secretary of the Committee for the Prevention of Tuberculosis, has made a personal inspection of about a hundred lodging-houses in Budapest, and reports the results in *Tuberculosis* (No. 1, 1910). Insanitary conditions were the rule. Dr. Kuthij was assured by several lodging-house keepers that all blankets were washed "at least twice a year"! In Budapest the lodging-houses, the majority of which are situated in the manufacturing districts of the city, shelter more than 20,000 people every night. The health department is apparently acting on the theory that it is impossible to have them kept clean. The old argument against tenement-house reform was that the tenement-dweller got as good as he deserved and that he would rapidly defile the most immaculate buildings. At the present time, however, it is recognised that this notion was fallacious and that our floating population is at least entitled to fresh air, to an occasional bath, and to reasonable changes of bed-linen and blankets. If our officials will give more careful attention to dwelling-house sanitation, and if the new laws advocated by Dr. Kuthij are enacted, the changes brought about in the tenements might be advantageously introduced in the manufacturing districts.

Early Recognition of Tuberculosis.

In continuation of the system mentioned in this column on July 31st, 1909, the State Board of Health of Hungary has once more issued for distribution to medical men throughout the country a circular on the early recognition of tuberculosis. The attention of the medical men is directed to the laboratories at the different county dispensaries, and it is announced that examination of sputum of patients supposed to be tuberculous will be made without cost at any time.

Intestinal Putrefaction in Catarrhal Jaundice.

Dr. F. Tauszk reports a case of catarrhal jaundice in the *Orvosok Lapja* of Jan. 6th in which he utilised the Blumenthal test to determine the degree of intestinal putrefaction. The estimation of putrefaction is based on the amount of ethereal sulphates present in the urine. This method, however, is not universally accepted, because some investigators claim that not all the aromatic bodies which are produced in the intestine take the form of ethereal sulphates. In Dr. Tauszk's case this test would have shown the intestinal putrefaction to have been abnormally diminished in degree, because on certain days the indican excretion in the urine was practically nothing, and it was not until convalescence was established and a sufficient quantity of bile was present in the intestine that any considerable amounts of indican were to be recognised. The quantity of phenol excreted, however, was sometimes more than double the normal amount. He believed that the volatile fatty acids in the urine afforded a better means of making an estimate as to the degree of intestinal acid fermentation, but that an absolute index to the degree of putrefaction in the intestine could not be obtained from a mere estimation of the indican, phenol, and ethereal sulphates. In addition to these it was also necessary to determine the amount of volatile acids in order to find out whether acid fermentation might not be taking the place of the production of aromatic bodies.

Jan. 24th.

NOTES FROM INDIA.

(From our own Correspondents.)

Plague.

Plague returns for the week ending Dec. 18th, 1909, show 6159 deaths, compared with 5736 in the preceding week. Bombay Presidency reported 657; Bengal, 366; the United Provinces, 2945; the Punjab, 902; Burma, 65; the Central Provinces, 546; Mysore State, 80; Central India, 28; and Rajputana, 459. The steady diminution of plague throughout Burma, which seemed to promise the total disappearance of the disease from the province at a not distant date, has been interrupted by a recrudescence of the epidemic in Upper Burma during the past fortnight. Several fresh cases have appeared at Sagaing, some miles south of Mandalay and on the opposite bank of the river, where during the past season the principal plague camp was established. This being a river station and a considerable centre of river-borne trade, the chances of the spread of the disease from there, both up and down stream, are greater than would be the case with a more isolated place, and it may be said that the tendency of plague to confine itself chiefly to the towns and villages situated on the river has been a characteristic of the disease in Upper Burma from the beginning, proving fairly conclusively that the infection is spread to a large extent by the river traffic. The local plague and sanitary authorities have, however, taken early and energetic steps to combat this new outbreak, and with the experience of past years before them it is to be hoped that ere long their measures and precautions will prove effective in reducing the virulence of the disease at the place where it has now again appeared, and in checking its spread to other parts of the district.

Fatal Case of Hydrophobia.

A sad case of hydrophobia has occurred at Bangalore in the 76th Battery, Royal Field Artillery, which has just returned from a practice camp at Birsandra. Gunners Collins and Maclaughlan were bitten by a mad dog. Collins developed hydrophobia and was brought to hospital at Bangalore for treatment. The patient's spasms being very severe it was considered necessary to chloroform him. In doing this Captain G. De la Cour, R.A.M.C., was bitten by Collins, while Lieutenant M. J. Lochrin, R.A.M.C., Assistant Surgeons Dunn and White, four European orderlies, and one native ward boy were bespattered with the patient's saliva, some of them also receiving minor scratches. Collins died. The Principal Medical Officer issued orders directing all those who attended the deceased to proceed immediately to the Pasteur Institute at Coonoor with Gunner Maclaughlan for prophylactic treatment.

The Pasteur Institute of India.

The appeal which is now being made for half a lakh of rupees for the Pasteur Institute at Kasauli should be generally responded to. The young Maharajah of Patiala has taken the lead in the matter, and his State contribution of Rs. 5000 should stimulate subscriptions. With such a sum the authorities of the institute could not only provide full accommodation for indigent patients but could carry out various improvements that are urgently needed. In short, the institute could be put in such a position that its usefulness would be enormously increased and adequate provision could be made for the steadily increasing number of cases. The committee of the Indian Tea Association, Calcutta, has expressed general approval of the proposal to establish a Pasteur Institute for Eastern Bengal and Assam.

Dec. 29th, 1909.

NOTES FROM CHINA.

(From our own Correspondents.)

Retrospect of the Public Health in 1909.

The past year in China has not been marked by any big epidemic outbreak. Plague has been present in Hainan and Hong-Kong, but no cases have been notified elsewhere. Cholera occurred to a limited extent in the provinces of Anhui and Shantung and a few Europeans died from it in Shanghai and Chefoo, but in neither of these cities was there an epidemic. In the provinces of Shansi and Kiangsu many thousands of cattle died from cattle-plague and many cases of small-pox, measles, and pneumonia have been noted as occurring among the natives there. At Suningfu there were a good many cases of influenza and diphtheria. In Shanghai, where there is the biggest foreign population in China, the health has been generally good, though diphtheria, sporadic dysentery, and endemic amœbic dysentery have been present to some extent. There was also an outbreak of relapsing fever in Shanghai Municipal Gaol. During the past summer I found the spirillum obermeieri in two cases in Peking, the first time it has been seen here. In the Yangtze Valley, notably at Ichang, malaria was rather prevalent and accounted for a good many deaths. It is impossible to give accurate figures. In Korea cholera appeared at the end of August in the capital, Seoul, and was attended by a high mortality. Last October there was a report in a local paper about an epidemic of Shantung fever, which was said to be in "painful evidence." The symptoms were: "Temperature fluctuating from normal to 104°, without pain, and the ordinary functions in no degree affected, and nothing to account for it. It lasts six weeks and is not considered serious." Throughout the whole empire tuberculosis still continues its ravages and is the chief cause of death. No amelioration of this state of affairs can be expected until a radical change takes place in the national customs. With the exception of the Mahommedan part of the population (an inconsiderable proportion) the Chinese are not a milk-drinking race, and this factor, which plays such an important part in the causation of the disease in other countries, may be ruled out of court here. But overcrowding, bad ventilation, unrestricted spitting indoors, and ill-feeding among the poor are present to an extent that entirely favour the transmission of the bacillus from one person to another. Indifference to life and apathy to every hygienic problem are marked characteristics of Chinese officialdom, and while progress in almost every other line is reported, such as the opening of provincial legislative assemblies, the building of railways without foreign assistance, and widespread educational reforms, the high sick- and mortality-rates continue to pass unheeded, probably because of the lack of knowledge of better conditions, especially in the absence of any census. In no other profession is reform more urgently required than in medicine. A distinct feature in China is the deeply-rooted national antipathy to the surgeon's knife. At inquests, unless there are marks of external violence, there is no means of judging the cause of death. Such hope as there is for the medical betterment of China lies in the fact that the people appreciate the work of foreign doctors. Every missionary and other hospital is overcrowded, and nothing but steady progress can be chronicled as regards the work of our foreign colleagues who come from Europe and America to take up work here.

Presentation to Dr. J. C. Thomson.

An interesting event took place on Dec. 10th, 1909, when at a full meeting of the Senate of the Hong-Kong College of Medicine Dr. J. G. C. Thomson, who since 1891 has been secretary of the college, was on his retirement presented with a piece of plate. The presentation consisted of a massive silver tea-tray bearing the following inscription: "Presented to John Christopher Thomson, M.A., M.D., D.P.H., D.T.M. and H., by members of the Senate, the licentiates, and the students, of the Hong-Kong College of Medicine, in token of their esteem and in recognition of the very valuable services rendered by him to the College during the past 21 years. December, 1909." In making the presentation Dr. Francis W. Clark, the Dean, said that the college was now an unquestioned success. This was due in no small measure to the indomitable perseverance, pluck, and energy of Dr. Thomson. In his reply Dr. Thomson thanked his colleagues and the present and past students for their generous testimony of the feelings with which they viewed his approaching departure from the colony, and said that his work among them had been almost unmitigated enjoyment. The hours which he had spent with his classes, especially those of tropical medicine, were among the happiest hours he had spent in the colony.

Dec. 20th, 1909.

Obituary.

WILLIAM PAGE MAY, D.Sc., M.D. Lond., F.R.C.P. Lond.,

FELLOW OF UNIVERSITY COLLEGE, LONDON, AND LECTURER ON THE PHYSIOLOGY OF THE NERVOUS SYSTEM AT THE COLLEGE.

The sudden and unexpected death of Dr. William Page May at Brighton on Wednesday, Jan. 19th, has come as a shock to a wide circle of friends and acquaintances. He had gone to the seaside for a few weeks for the sake of his wife and his nine weeks old daughter, and it was there that he was suddenly struck down with an attack of right hemiplegia with aphasia which terminated fatally in 24 hours after its onset. He had always been delicate and lately had to seek advice on account of cardiac symptoms, but nothing in his condition had appeared so serious as to lead anyone to anticipate such a sudden and tragic ending.

May was early in life left an orphan, but his childhood and boyhood were tended by an aunt whose loving care he repaid with the warmest affection. This aunt died only a few years ago. He lived with her at Blackheath during his school days and his student days at University College and Hospital. His first scientific love was chemistry, and to the study of this subject he applied himself with characteristic keenness and assiduity until he took his B.Sc. degree at the University of London. He elected to study medicine, and in his career he created almost, if not quite, an academical record. He took his M.B., winning the gold medal in medicine in 1888, and two years later took his M.D. degree, also winning the gold medal in medicine. He served the usual house offices at University College Hospital, and he also was house physician at the National Hospital for the Paralysed and Epileptic, Queen-square. It was this last appointment which determined his later work, while he always had a peculiar aptitude for, and love of, the study of nervous diseases. Intending to embark on consulting practice in London, he applied for and obtained the post of pathologist to the Victoria Park Hospital for Chest Diseases, but almost immediately his health gave way and he had to go abroad. He travelled for two years in Egypt and then was invited to take charge of and reorganise the baths at Helouan, a work which he carried out in a characteristically thorough fashion, visiting all the principal bathing establishments in Europe in order to incorporate in the new installation at Helouan the latest improvements in the apparatus suited for treatment at such places. His great gift of languages helped him in this, for he spoke French, German, and Arabic fluently, and Italian fairly. At Helouan May remained for several years, and he rendered it an attractive and beneficial resort of European reputation. He only gave it up in order to devote himself to what he had long wished to cultivate—the study of the physiology of the nervous system. He applied for the post of lecturer on the subject at University College, London, and was promptly appointed. He had been elected a Fellow of the Royal College of Physicians of London in 1902, and later took his D.Sc.

Without attempting to recapitulate all the circumstances of May's busy life we may instance some examples of his range of literary achievement. He published numerous papers, some in the Philosophical Transactions of the Royal Society, some in the *Journal of Physiology*, some in *Brain*, some in German scientific journals, and some he read before the British Association. All were characterised by the same industry, the same care, the same illuminating insight, but alas, his best work is left unfinished. It is to be hoped that someone may be found to take up the threads which have dropped from his fingers, and carry his work on to completion. But the purely scientific was only one side of May's character. Those who knew him best, no matter how much they may admire his scientific work, will always regard him as one of the best clinical physicians they have ever met. Those who did not know him in any of his professional capacities will always think of him as one of the kindest and most delightful of men, full of the finest spirit of fun and *camaraderie*, as keen on cricket and golf and fishing as he was on his scientific pleasures, and always ready, nay, eager, to make a thing go off well, no matter what it was, and a most sympathetic and cheering companion when dark days came upon his friends. His was a character with many facets; some saw one, some another; it was only the privilege of a few to see most of them, and even they could not claim to see all. Yet it may truly be said that those who knew him best held him in the deepest affection—no one knew him at all without having for him the greatest regard. The sympathy of a wide circle of his friends will be with his wife and infant daughter in their terrible and sudden calamity.

STANLEY BEAN ATKINSON, M.A., LL.M. Cantab., M.B., B.Sc. Lond., L.R.C.P. Lond., M.R.C.S. Eng., J.P.

The late Dr. Stanley Bean Atkinson was a remarkable public figure in the East End of London, and his many friends are of opinion that his sudden death, which we recorded last week, has cut short a career of public service which would have carried him into wider notice than did his untiring social work in the district which profited by his constant labours for its betterment. He was in the unusual position of having two professions and being financially independent of both of them, so that he was able to place his knowledge and talents at the disposition of the public bodies concerned with the welfare of the poor in the Mile End district of East London. At the time of his death he was a prospective candidate for the County Council, and was the kind of man who might well have found Spring Gardens a stepping-stone to Westminster, and might have gone far at Westminster.

Stanley Atkinson was born in 1873, being the son of the Rev. J. W. Atkinson, who was then, and is still, pastor of the Latimer Congregational Church in Mile End. He was educated at the Congregational School for the Sons of Ministers and subsequently at St. Bartholomew's Hospital, where he gained an entrance scholarship in 1892. The same year he graduated in science at the University of London, and later he obtained a sizarship at Trinity College, Cambridge, where he went into residence, and took his Mastership in both Arts and Laws in 1901. He was still continuing to read medicine, and in 1902 he qualified at the London Colleges, taking his M.B. at the University of London in the following year. He fulfilled two appointments as a resident officer at the City of London Hospital for Diseases of the Chest, and was called to the Bar as a member of the Inner Temple. Having thus equipped himself, he determined to devote his life to public service rather than private profit, and settling himself at Mile End quickly interested himself in the social progress of its inhabitants. He was appointed a member of the Stepney borough council, to which his advice on matters of public health was always welcome, and he was appointed vice-chairman of the Mile End board of guardians, which body showed its confidence in his judgment by appointing him to represent it upon the Metropolitan Asylums Board. He was also appointed a member of the Central Midwives Board and a Justice of the Peace for the County of London. He was a welcome visitor at the Mile End Infirmary, where he was greatly beloved by the inmates, and he took an active part in the dissemination of knowledge regarding temperance and the prevention of disease, especially tuberculosis, amongst the poor people for whom he lived chiefly. Dr. Atkinson's death will be sincerely regretted by the members of the Medico-Legal Society, among whom he was most popular, and will be remembered as a charming colleague. He took an active interest in the welfare of the society from its foundation in December, 1901. For five years he was one of the honorary secretaries and also for the same number of years assisted in the editorship of the annual Transactions. At the time of his death he was a member of the council. His interest and industry are shown when it is recorded that among his many other duties he found time to prepare and read the following papers: "Live Birth in Theory and Practice," "The Definition of 'Accident,'" "Some Limitations of Medical Evidence," and "Heredity and Affiliation." He was an honorary member of the sister society in New York, an ex-Vice-President of the Abernethian Society, and a member of the Hunterian and Romilly Societies, as well as of the Society for the Study of Inebriety. His contributions to medical literature were written from the legal side, and included a book, published in 1908, on "The Law in General Practice," at cautionary guide especially for young practitioners conaining some useful advice on matters not strictly legal. Other publications were "Golden Rules of Medical Evidence," "The Office of Midwife," and a number of papers in the medical and legal journals. He was also a frequent editorial contributor to our own columns.

Dr. Atkinson was actively engaged in religious work, and was also a keen Liberal politician. It is believed that the acute cardiac dilatation which brought about his death was due, at least in some measure, to the strenuous exertions he made on behalf of the Liberal candidate for his constituency, for whom he was canvassing within a few days of his end. The constant attention of Dr. J. Fletcher Porter, with Dr. Bertrand Dawson, Dr. W. P. Herringham, and Dr. E. H. Colbeck in consultation, could not avert a tragic end to his physical collapse. The deepest sympathy is due to Dr. Atkinson's family for the sad event which has stopped a career of much promise; he died unmarried.

CONNELL WHIPPLE, L.R.C.P. LOND., M.R.C.S. ENG.,

CONSULTING SURGEON, SOUTH DEVON AND EAST CORNWALL HOSPITAL.

Mr. Connell Whipple died at his residence, St. Andrew's Lodge, Plymouth, on Jan. 21st, in his sixty-eighth year. Mr. Whipple was born in Plymouth, where his father was a distinguished surgeon. He received his medical education at St. Bartholomew's Hospital, London, and qualified M.R.C.S. Eng. and L.R.C.P. Lond. in 1863 and 1864 respectively. After holding the appointment of house surgeon at St. Bartholomew's Hospital, he came to Plymouth and succeeded to his father's practice. Mr. Whipple had been a member of the honorary staff of the South Devon and East Cornwall Hospital for about 35 years; two years ago, on resigning the post of senior surgeon, he was appointed consulting surgeon and elected on the management committee of that charity. He was also consulting surgeon to the Plymouth Dental Hospital. Mr. Whipple was formerly surgeon-lieutenant-colonel in the 3rd Battalion of the Devon Regiment (Militia). He contributed articles to THE LANCET and also to the *British Medical Journal*. Mr. Whipple was extremely popular in Plymouth, and much sympathy is felt in the "Three Towns" for his widow, two sons, and three daughters.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. M. Nedopil, director of the General Hospital at Brunn.—Dr. Jacob Volhard, formerly professor of chemistry in the University of Halle. He was a pupil of Liebig, and had made several important researches in the domain of medical chemistry. He was 75 years of age and had been living in retirement for two or three years only.—Dr. Opitz of Stettin, an orthopœdic surgeon who succumbed to Roentgen-ray ulceration, aged 46 years.—Dr. Johann T. Augustus Steffen, formerly *Oberarzt* of the Children's Hospital at Stettin. He published several volumes of clinical lectures on children's diseases, and wrote many of the articles in Ziemssen's "Handbook of Special Pathology and Therapeutics" and in Gerhardt's "Handbook of Children's Diseases." He was also one of the editors of the "Yearbook of Children's Diseases." His age was 84 years.—Dr. Queirel, professor of clinical midwifery in the Marseilles Medical School and Associate of the Paris Academy of Medicine.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. George Salting the London hospitals will receive a sum amounting to £10,000, and the Prince Alfred Hospital, Sydney, N.S.W., will receive £2000.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in January the following candidates passed in the subjects indicated:—

Surgery.—K. Baylis (Sections I. and II.), Royal Free Hospital; J. A. Jones (Section II.), Manchester; E. D. Richardson (Section II.), St. Mary's Hospital; and J. W. Williams (Sections I. and II.), Guy's Hospital.

Medicine.—J. N. Beadles (Sections I. and II.), Westminster Hospital; J. A. Jones (Section II.), Manchester; and G. S. Richardson (Sections I. and II.), Leeds.

Forensic Medicine.—J. N. Beadles, Westminster Hospital; R. J. Cyriax, St. Mary's Hospital; and S. K. Poole, Guy's Hospital.

Midwifery.—G. J. F. Elphick, St. Mary's Hospital; and J. A. Jones, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. N. Beadles, R. J. Cyriax, S. K. Poole, and J. W. Williams.

THE UNIVERSITY OF LIVERPOOL.—The Senate at their meeting on Jan. 26th awarded the Diploma in Public Health to the following successful candidates in the recent examinations:—

F. Brechin, M.B., Ch.B. Glasg.; K. R. Dalal, L.M. & S. Bombay, D.T.M. Liverp.; E. H. R. Harries, M.D. (State Medicine), M.B., B.S. Lond., M.R.C.S., L.R.C.P.; and G. F. Oldershaw, M.B., Ch.B. Liverp.

ST. ANDREWS UNIVERSITY.—The following have successfully passed the final examination for the degrees of M.B., Ch.B. of St. Andrews University:—

Donald John Forbes, Dundee; Elizabeth Berwick Forgan, St. Andrews; and Thomas Scollay, Strathkinners.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bahia:* Dr. Joño Americo Garcez Fróes has been appointed to the chair of Clinical Propædeutics in succession to the late Dr. Alfredo Th. de Britto.—*Budapest:* Dr. Josef Kovacs has been recognised as *privat-docent* of Diseases of the Chest.—*Giessen:* Dr. R. O. Neumann, Extraordinary Professor at the University of Heidelberg, has been appointed to the chair of Hygiene, in succession to Dr. Kössel.—*Jena:* Dr. Max Henkel, Professor in the University of Greifswald, has been appointed to the chair of Midwifery and Gynæcology, in succession to Dr. K. Franz.—*Kharkoff:* Dr. S. V. Korshun, *privat-docent*, has been appointed to the chair of Hygiene.—*Munich:* Dr. H. Marcus has been recognised as *privat-docent* of Embryology and Anatomy. Dr. Fritz Salzer, *privat-docent* of Ophthalmology; Dr. Herbert Gebele, *privat-docent* of Surgery; Dr. Alois Alzheimer, *privat-docent* of Psychiatry; Dr. Wilhelm Kattwinkel, *privat-docent* of Neurology; Dr. Hermann Kerschensteiner, *privat-docent* of Medicine; Dr. Friedrich Wanner, *privat-docent* of Otology; and Dr. Ludwig Neumayer, *privat-docent* of Histology, have been granted the rank and title of Extraordinary Professor.—*Pittsburg:* Dr. Charles E. Ziegler has been appointed to the chair of Midwifery.—*Prague (German University):* Dr. Horbaczewski, Professor of Medical Chemistry, has been promoted to the House of Peers.—*Rome:* Dr. Alfredo Baduel has been recognised as *privat-docent* of Medical Pathology.—*Strasburg:* Dr. E. Hertel, Extraordinary Professor in the University of Jena, has been appointed Professor of Ophthalmology in succession to Dr. Schirmer, resigned.—*Tomsk:* Dr. Muratoff, *privat-docent* in the University of Moscow, has been appointed to the chair of Neurology and Psychiatry.—*Vienna:* The medical professors have made the following selections for the post of Director of the Gynæcological Clinic, vacant by the death of Professor von Rosthorn: (1) Professor Hofmeier of Würzburg; (2) Professor Selheim of Tübingen; and (3) Professor von Herff of Basle and Professor Wertheim of Vienna.

UNIVERSITY OF DURHAM.—The changes in the constitution of the University of Durham Act (1908) have now been made and on Jan. 25th the Senate of the University held its first meeting for the election of officers and committee. We gave a full account of the changes when the University of Durham Bill was first presented to the House of Commons by Mr. T. W. Hills (THE LANCET, Vol. I., 1908, p. 1586). The new Senate has six Crown members, 16 members nominated by the Durham Division of the University, and 16 by the Newcastle Division. At the first meeting of the reconstituted

Senate Dr. Jevons was appointed Vice-Chancellor, and Sir George Hare Philipson, Dr. Hadow, and Canon Kynaston were appointed Pro-Vice-Chancellors for the ensuing two academical years.

UNIVERSITY OF OXFORD.—The Waynflete Professor of Physiology has appointed Dr. Walter Ramsden, Fellow of Pembroke, Dr. H. M. Vernon, Fellow of Magdalen, and Dr. S. G. Scott to be his demonstrators for three years.

UNIVERSITY OF LEEDS: APPOINTMENTS TO THE PROFESSORSHIPS OF SURGERY.—Mr. H. Littlewood has, to the great regret of his colleagues and to that of the students, tendered his resignation to the council of the University. Mr. Littlewood continued his duties until the end of 1909 to meet the convenience of the department. A strong committee of the council was appointed to consider the future of the surgical teaching, and after full consideration it was arranged to institute a second professorship in the form of a chair of clinical surgery. Mr. R. Lawford Knaggs was appointed professor of surgery, carrying on the old title of the chair and with the responsibility of giving the systematic lectures on surgery. It was arranged that the former number of systematic lectures—namely, 60—should be reduced to 40, and that two lectures should be delivered every week during the first and second terms. To the chair of clinical surgery Mr. B. G. A. Moynihan was appointed. His duties will be to deliver a course of clinical lectures, 10 in number, during the third term. These lectures may be given at the medical school or at the infirmary, at the discretion of the professor. Both professors will be jointly responsible for the conduct of the University examinations in surgery. The clinical lectures on medicine, surgery, and special subjects which are delivered every week at the infirmary will in no way be influenced by these arrangements. These are given by the University clinical lecturers, who are members of the honorary staff of the infirmary.

THE WEST AFRICAN MEDICAL STAFF.—The following officers have retired: Mr. T. E. Frazer Toovey, F.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., L.M. Rotunda, medical officer, Southern Nigeria, with gratuity from August 9th, 1909; Mr. R. P. Cockin, M.B., B.C. Cantab., medical officer, Southern Nigeria, from August 31st, 1909; Mr. W. R. Larbalestier, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S., medical officer, Southern Nigeria, from Oct. 5th, 1909; and Mr. A. E. Oakeley, M.R.C.S. Eng., L.R.C.P. Lond., medical officer, Northern Nigeria, from Oct. 20th, 1909.—Mr. C. C. Robinson, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., medical officer, Southern Nigeria, has been transferred to Straits Settlements from Sept. 24th, 1909.—Mr. T. E. Rice, L.S.A., senior medical officer, Gold Coast, has been promoted to senior sanitary officer, Gold Coast; and Mr. G. C. Walker, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., medical officer, Gold Coast, to be sanitary officer, Gold Coast.—Mr. H. W. Gush, M.B., Ch.B. Edin., late medical officer, Gold Coast, has been reappointed medical officer, Northern Nigeria, from Jan. 5th, 1910.—The following gentlemen have been appointed to the staff: Mr. J. R. P. Allin, L.R.C.P., L.R.C.S. Irel., L.M. (Southern Nigeria, August 7th, 1909); Mr. T. Hood Rankin, M.B., Ch.B. Glasg. (Southern Nigeria, August 28th, 1909); Mr. C. W. O'Keeffe, L.R.C.S., L.R.C.P. Irel., L.A.H. Dub., (Southern Nigeria, August 28th, 1909); Mr. G. M. Gray, M.D. Glasg. (Southern Nigeria, Sept. 25th, 1909); and Mr. J. W. Archibald, M.B., Ch.B. Aberd. (Southern Nigeria, Nov. 17th, 1909).—*Other Colonies:* Mr. R. P. Cockin, M.B., B.C. Cantab., lately an officer of the West African Medical Staff, has been appointed a district medical officer in Cyprus; Mr. P. Harper, M.R.C.S. Eng., L.R.C.P. Lond., has been selected for appointment as medical officer in Fiji; and Mr. R. Cox, M B., B.S. R.U.I., has been selected for appointment as house surgeon in the Medical Department of the Federated Malay States.

PRESENTATION TO A MEDICAL MAN.—Dr. Robert Inch, M.B., C.M. Edin., who for a considerable number of years has taken an active interest in the public life of Gorebridge, was entertained at a social gathering held at Newbyres Hall, Gorebridge, on Jan. 15th, in honour of the attainment of the semi-jubilee of his coming to the village. The chairman, Mr. George Young, after referring to the debt of gratitude which the people of the district owed to Dr. Inch for his services during the past 25 years, presented him with a massive silver cup and a purse of sovereigns, the gift of 500 subscribers representing all classes of the people. The cup bore the inscription: "Presented to Dr. Robert Inch, Gorebridge, along with a purse of sovereigns, and a bracelet to Mrs. Inch, on the occasion of his semi-jubilee as a medical practitioner in Gorebridge and district, December, 1909."

THE SMITH TURNER PRIZE OF THE BRITISH DENTAL ASSOCIATION.—The next examination for the award of the Smith Turner scholarship in dental mechanics—annual value £30—founded by the British Dental Association in 1907 to honour the memory of James Smith Turner, will be held on April 15th, 1910. The scholarship is open to any registered dental student who, in the opinion of the committee, has financial difficulty in completing the dental curriculum. The examination in dental mechanics is both practical and *viva voce.* The scholarship is tenable for one or two years, at the discretion of the committee, and is paid to any dental school in discharge of fees. Applications must be received on or before April 1st, 1910, addressed to the honorary secretary, British Dental Association, 19, Hanover-square, London, W.

NEWCASTLE-ON-TYNE CLINICAL SOCIETY.—A meeting of this society was held on Jan. 13th, Mr. J. W. Leech, the President, being in the chair. Amongst the 200 members and visitors present were Sir George Hare Philipson (President of the College of Medicine), Sir Thomas Oliver, Dr. David Drummond, Professor T. W. McDowall, and Professor R. P. R. Lyle. Sir J. Halliday Croom delivered the annual address, the subject being "The Physiology, Pathology, and Psychology of the Menopause." The address was highly instructive, laden with suggestion, and was received with enthusiasm by the large audience. In the evening the annual banquet of the society was held in the Armstrong College, Mr. Leech again presiding over a gathering of some 150 members and guests. Amongst those who were present were Lord Durham, Lord Ridley, the Right Hon. R. Spence Watson, the Deputy Lord Mayor, Sir George Hare Philipson, Sir Thomas Oliver, and Professor Bedson (Armstrong College). After the loyal toasts the President proposed "The Guests," and Sir Halliday Croom suitably replied. Lord Durham and Lord Ridley, in amusing and brilliant speeches, proposed and replied to the toast of "The Empire," while Dr. Spence Watson proposed "The Clinical Society," to which Dr. A. J. Collis, a former President, replied. Sir George Hare Philipson and Professor Bedson replied to the toast of "The College of Medicine and the Armstrong College," proposed by the deputy Lord Mayor of Newcastle. The evening was interesting in that it was the largest gathering held by the society, and also that it was the first time it had taken place in the Armstrong College, this desirable and at the same time necessary change being made because of the increase in numbers and activity of the society during the past few years. The membership of the society is now nearly 200, and its ordinary meetings are attended by an average number of between 50 and 60. While it may be invidious to particularise it must be mentioned that the success of the society is very largely due to the work of the President of this year during the half-dozen years of his office as secretary.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ATKINSON, R. A. H., M.B., Ch.B. Vict., has been re-appointed Junior Anæsthetist to the Manchester Royal Infirmary.

BARCLAY, A. E., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer for Radiography and Electricity Department at the Manchester Royal Infirmary.

BRADNAM, C. H., has been appointed Dental House Surgeon at Guy's Hospital.

BUCKLEY, J. P., M.B., B.S. Lond., has been re-appointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

BULL, F. BOEQUET, has been appointed Dental House Surgeon at Guy's Hospital.

COPE, V. ZACHARY, M.D., M.S. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CORE, D. E., M.B., Ch.B. Vict., has been re-appointed Resident Medical Officer at the Barnes Convalescent Home, Manchester.

CURTIS, HENRY, B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the "Dreadnought" Hospital, and Joint Teacher of Operative Surgery at the London School of Clinical Medicine.

FARNCOMBE, W. T., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the South Birmingham District of the county of Warwick.

GEDGE, ARTHUR SYDNEY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fifth District by the Devizes (Wilts) Board of Guardians.

GILDER, M. D. D., F.R.C.S. Eng., has been appointed House Surgeon at University College Hospital.

LEECH, E. B., M.D. Vict., M.R.C.P. Lond., has been appointed Medical Registrar to the Manchester Royal Infirmary.

LOVEDAY, G. E., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been re-appointed Director of the Clinical Laboratory at the Manchester Royal Infirmary.

MCBRIDE, J. B., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Berkhamsted District of the county of Hertford.

MARTIN, P. S., M.R.C.S., L.R.C.P., has been appointed House Surgeon at University College Hospital.

MORLEY, J., M.B., Ch.B. Vict., has been re-appointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

O'RORKE, F. T., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Westport District of the county of Mayo.

PEARCE, GEORGE HARPER, D.P.H. Camb., has been appointed Medical Officer of Health and Medical Officer to the Education Committee of the Borough of Batley.

POWELL, R. W., has been appointed Dental House Surgeon at Guy's Hospital.

RAMSDEN, WALTER, M.D., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

SCOTT, S. G., M.B., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

THOMPSON, A. F., M.B., Ch.B. Vict., has been re-appointed Senior Anæsthetist to the Manchester Royal Infirmary.

TYLECOTE, F. E., M.D. Vict., M.R.C.P. Lond., has been re-appointed Resident Medical Officer at the Manchester Royal Infirmary.

VERNON, H. M., M.D., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

WEATHERBE, PHILIP, M.B., Ch.B. Edin., has been appointed one of the Physicians to the Dispensary at Halifax, Canada.

WILSON, S. R., M.B., B.S. Lond., M.B., Ch.B. Vict., has been re-appointed Second Anæsthetist to the Manchester Royal Infirmary.

WRIGLEY, F. G., M.B., Ch.B. Vict., has been re-appointed Gynæcological House Surgeon to the Manchester Royal Infirmary.

YOUNG, EDWARD HERBERT, M.D. Durh., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Lond., has been appointed Medical Officer of Health of Okehampton (Devon) for one year.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon (salary each £100 per annum); One Obstetric and Ophthalmic House Surgeon and One Throat, Nose, and Ear House Surgeon (salary each £75 per annum); and One Casualty Officer (salary £50 per annum); with apartments, board, and laundry. Also Honorary Assistant Dental Surgeon. Also Honorary Dental Anæsthetist.

BRISTOL UNIVERSITY.—Demonstrator of Anatomy. Also Demonstrator of Physiology. Salary £180 per annum each.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

CAPE OF GOOD HOPE, GREY HOSPITAL, King Williams Town.—Resident House Surgeon, unmarried. Salary at rate of £250 per annum, with quarters and one ration.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

EASTERN DISPENSARY, Leman-street, Whitechapel, E.—Physician Accoucheur.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for Inspection of School Children. Salary £300 per annum with travelling expenses.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

ITALIAN HOSPITAL, Queen-square, W.C.—Honorary Assistant Physician.

KING'S COLLEGE HOSPITAL.—Junior House Anæsthetist. Salary at rate of £50 per annum.

KING'S NORTON INFIRMARY AND WORKHOUSE, Selly Oak, near Birmingham.—Assistant Medical Officer. Salary £100 per annum, with residence and rations.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LIVERPOOL UNIVERSITY CANCER RESEARCH LABORATORY.—Research Worker. Salary £150 per annum.

LIVERPOOL WORKHOUSE AND HOSPITAL, Rice-lane, Walton.—Assistant Resident Medical Officer, unmarried. Salary £125 per annum, with board.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Assistant Medical Officer. Salary £25 per annum. Also Honorary Assistant Physician.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Two Anæsthetists.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Pathologist. Salary at rate of £100 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £80 per annum, with board, &c.

PARISH OF LAMBETH.—Medical Officer for District No. 8 (Norwood), also for Home for Aged Poor at Norwood. Salary in each case £50 per annum.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with board, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Honorary Surgeon and Clinical Assistants.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland-street, W.—Surgical Registrar. Salary £105 per annum.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—Pathologist. Salary £200 per annum.

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES, Old-street, London.—Clinical Assistant, unmarried, for six months.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Also Assistant House Physician. Salary of former £65, and of latter £60 per annum, with board and residence.

SOUTHPORT INFIRMARY.—Junior House and Visiting Surgeon, unmarried, for six months. Salary at rate of £70 per annum, with residence, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Medical Officer-in-Charge of the Electro-Radiographic Department.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Maiden Newton, in the county of Dorset; at Leuchars, in the county of Fife; and at Lytham, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

BALL.—On Jan. 25th, at Hunstanton, Norfolk, the wife of Charles R. H. Ball, M.R.C.S., L.R.C.P., of a son.

HANKEY.—On Jan. 16th, the wife of Stanley J. Hankey, L.D.S. R.C.S. Eng., Teignmouth-road, Cricklewood—a son (Ian Brian).

SEARS.—On Jan. 20th, at Point View, Burnt Ash-hill, Lee, S.E., the wife of C. Newton Sears, M.D., B.S. Lond., M.R.C.S., L.R.C.P., of a daughter.

WILSON.—On Jan. 7th, at Paddock, Huddersfield, the wife of David Wilson, jun., M.B., M.R.C.S., of a daughter.

MARRIAGES.

ELLISTON—CADMAN.—On Jan. 18th, at Stanford-on-Soar Church, Chatterton Eric Elliston, M.D. Edin., to Elizabeth Gwladys, eldest daughter of Walter Cadman, of Stanford Hill, Notts, and Loughton, Herts.

MARTIN—VARDON.—On Jan. 18th, at Christ Church, Epsom, Thomas Martin, M.R.C.S., L.R.C.P., of Thatcham, Berks, to Olive Mary, only daughter of Harry W. Vardon, of Epsom.

DEATHS.

ATKINSON.—On Jan. 18th, from heart failure, after a few days' illness, Dr. Stanley B. Atkinson, M.A., J.P., in his 37th year.

PAGE-MAY.—On Jan. 19th, at Brighton, after a few hours' illness, William Page-May, M.D., F.R.C.P., D.Sc., of Great Cumberland-place.

ROUSE.—On Jan. 20th, at Firlands, Reigate, Robert Rouse, late Deputy-Surgeon-General, the Frontier Force, I.M.S., retired, aged 77.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"PUERPERAL FEVER": A QUESTION OF NOMENCLATURE.

Dr. J. Savege, district medical officer to the Sculcoates board of guardians, was summoned to the Hull police court on Jan. 20th, at the instance of the Hull corporation under the Infectious Diseases Notification Act, for failing to notify two cases of puerperal fever.

The case was heard before the stipendiary magistrate (Mr. J. G. Hay Halkett). Mr. J. B. Chapman (corporation) prosecuted, and Mr. T. W. Holdich defended.

Dr. J. Wright Mason, medical officer of health of Hull, said that from information received from the midwives' inspector there had been two cases of puerperal fever in Hull. Those cases had not been notified.

A letter was given to the magistrate which had been written by Dr. Savege to the finance committee of the Sculcoates board of guardians in which he stated that the two women in question were suffering from puerperal fever.

Mr. Holdich, for the defence, admitted the letter, but said that Dr. Savege had used a phrase "puerperal fever" wrongly. The fever that the two women were suffering from was in no sense one that was necessarily attached to women in the lying-in state. The facts of the two cases were that two women living in a poor neighbourhood required assistance of a midwife from the lying-in charity. It was one of the regulations of the Central Midwives Board that in any case in which the temperature of the patient rose above 100° F. it was the duty of the midwife to ask for medical aid. The midwife in those cases had asked medical aid of the Sculcoates board of guardians because the temperature of the patients had risen above 100° F. Dr. Savege had attended to the two women.

Dr. Savege said that when he had written that letter he had used the words "puerperal fever" in the dictionary sense and not in the sense notifiable under the Act. There was nothing in the word "puerperal" to suggest a septic state. In his conception of the word "puerperal" there were 20 different kinds of fever, but there was only one kind which should be notified under the Act. The two women in question were not suffering from puerperal fever in the notifiable sense.

Corroborative evidence was given by Dr. T. Cameron and Sister Edith, head midwife of the Lying-in Charity, who said that the two women had recovered.

The magistrate dismissed the summonses and said that Dr. Savege had got into difficulty by the loose way in which he had described the illness of the two women.

We are glad that the occurrence occasioned Dr. Savege no more inconvenience than a morning in a police-court, but we are bound to admit that as he had stated the cases to be puerperal the Hull corporation, when the occurrence came to its knowledge, had no option but to prosecute, as the Infectious Diseases Notification Act very clearly lays down the practitioner's duty under the circumstances. The expression "puerperal fever" is, it is true, a thoroughly unsatisfactory one, for it has been used to connote a diverse series of conditions complicating the puerperium. At the same time, a practitioner is ill-advised to speak of a slight and transient rise of temperature as "puerperal fever" when there is no question of its being due to septic absorption from a local infective condition of the uterus or vagina, for the use of that expression to describe a pathological condition carries with it the statutory duty of notification.

PLAGUE INFECTION IN A CALIFORNIAN WOOD RAT.

An addition to the list of animals capable of harbouring the bacillus pestis is announced by Dr. W. C. Rucker in the *Public Health Reports* of the U.S.A. Public Health and Marine Hospital Service for Jan. 7th. The animal in question is the Neotoma fuscipes anectens (Elliot). Several species or varieties of this genus are found in California. They are indigenous, and although called "wood rats" are very different from the imported true rats (Mus norvegicus). They are found in wooded localities where they construct elaborate "nests," which are sometimes 6 or 7 feet in diameter and 3 feet high. In the Neotoma fuscipes the body and tail are of nearly equal length, each measuring about 8 inches.

ROBBEN ISLAND LEPERS.

The Select Committee of the Cape House of Assembly appointed to inquire into the condition of the lepers on Robben Island have, after visiting the station and examining witnesses, presented their report. It states that, with the exception of a few matters, there was a gratifying absence of serious complaint on the part of patients as regards their treatment and accommodation, "a fact which reflects favourably on the inadequate staff on the island under the unsuitable conditions prevailing there." The evidence disclosed, however, that the water-supply was brackish and deficient, and the committee recommend the adoption of a satisfactory drainage scheme, preferably such as the Scott-Moncrieff, rendering the sewage inert before disposal in the sea, adding that "at present the germ-laden drainage is cast into the sea and fed upon by fish which are eaten both on the island and the mainland." Both amongst the patients and many of the responsible staff the chief complaint against the island is on account of its damp sea winds, its glare, its loneliness, and the separation it entails upon the lepers and their friends, who are averse to sea-travelling, it being stated by many that the frequency of eye and chest diseases is due to the island's climatic conditions. The committee strongly urge the appointment of a Government commission to consider the matter "with a view to ascertaining whether it may not be possible to open a leper settlement on the mainland for at least some of the Robben Island lepers." The committee further recommend the immediate erection of one large hospital building, and provision whereby the necessary compulsory removals of serious cases from dormitories to hospital may be enforced; the separation of the 25 leper children from the adults; and the provision of better accommodation for staff attendants. One of the principal witnesses before the committee, Dr. Gregory, expressed the opinion that the advantages of Robben Island as a leper settlement far outweighed its drawbacks. He did not think there was any truth in the statement that the sea air was against the health of the lepers themselves; and so far as segregation went, his opinion was that it was the only means at present known of eradicating leprosy.

BED-MAKING.

To the Editor of The Lancet.

Sir,—May I call attention in your columns to what I believe to be a danger, unsuspected by many, in the making of beds? I refer to the custom of throwing back the bed-clothes in the morning "to air the bed" over the back rail of the bedstead or over a chair placed at the foot of the bed. The very part of the bed-clothes which comes nearest to one's mouth and nose at night is often thus thrown or drops down into direct contact with the floor, which may be clean or may not be so, and if the passage at the foot of the bed is not very wide anybody going upstairs with dirty slippers or boots before the bed is re-made, or even when it is being re-made, and passing round the end of the bed would also probably trample on the part that comes in contact with one's mouth at night time. It seems to me that to avoid this danger the foot-rail of the bedstead should be artificially raised in height by another rail somewhat in the form of a capital H clamped on to it, and that new bedsteads should be made with some such holdfast contrivance which the ingenious bedstead-maker could easily contrive in order to avoid this unhygienic occurrence.—I am, Sir, yours faithfully,

Jan. 22nd, 1910. Fulcrum.

ETHER AS AN INTOXICANT.

The *Irish Times* recently reported a case heard at Cookstown petty sessions, Co. Tyrone, in which Elizabeth McGarvey, a married woman, was charged with ill-treating her children and with being a habitual drunkard. The defendant's husband, a gardener, said he had been married to her about seven years. Three months after the marriage he noticed that she was addicted to ether-drinking. The habit had gradually increased since. He had seen her drunk from ether several times during the last six months, and when in that condition, "in the horrors of her drink," she had struck the children. To his knowledge she spent about 2*s*. 6*d*. every week on ether for her own consumption. The defendant was committed for trial. Mr. John Glasgow, one of the six magistrates on the bench, said this was the second consecutive court in which they had had to deal with sad cases having their origin in ether-drinking. He proposed that "we, as magistrates, assembled at petty sessions, Cookstown, which includes in its area a considerable district in which the drinking of ether as an intoxicant is indulged in, pray the Chief Secretary to the Lord Lieutenant of Ireland to so amend the law scheduling ether as a poison as to make it compulsory on the chemist to keep a record of the purchasers and the quantities purchased, as is done in the case of many poisons, and, if practicable, to limit any one sale to a small quantity, as we have reason to believe it is purchased in considerable quantities and resold illicitly in certain districts." The chairman (Mr. S. E. Ekin) seconded the resolution, and it was unanimously adopted.

A CONVENIENT LEG-REST.

The Purpose Manufacturing Company, Teddington, have made and placed upon the market an article of furniture with the somewhat irritating name of "The Kumfee," which will be of interest to our readers, as it was designed by a medical man. It is primarily intended to meet the objection which the average man has for the average easy chair—namely, that the seat is not long enough. It consists of a cushioned frame swinging on a stand, and forming, when placed in front of a chair, an extension of the seat, long enough to support both thighs and legs at a convenient angle. When it is no longer needed as a leg-rest the frame swings up vertically upon its stand and becomes a fire-screen with a ledge that can be let down at right angles to serve as a convenient occasional table. The article would not only be of use in an invalid's room, but doubtless acceptable to the weary practitioner after a hard day's work. It can be upholstered to meet individual requirements.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1910.

We have received once more the handy little "Wellcome" Photographic Diary issued by Messrs. Burroughs, Wellcome and Co., and again we feel justified in recommending it to the attention of the large number of medical men, who are also amateur photographers, who will find it cheap at a shilling. Those few who have practised their pictorial hobby since the days of the wet plate, when the enthusiastic operator had to go forth equipped with a small tent and all the paraphernalia of the dark room in order to obtain a landscape negative, will agree that chemistry has made no greater advances during the last quarter of a century than in its application to photography, and Messrs. Burroughs and Wellcome, by applying their well-known "Tabloid" methods to the preparation of photographic reagents, have done much to simplify the various processes of developing and printing. Full directions for the use of their various photographic products are given in the front pages of this diary, following which are pages ruled for notes concerning the conditions of individual exposures. Due stress is laid on the advantage of "factorial" development. To our mind, however, the best feature of the book is the ingenious exposure calculator upon the last page. Of course, no purely mathematical contrivance can give quite as accurate results as an actinometer, but we have tested this calculator on many occasions and under varying conditions and are satisfied that with the elasticity of exposure secured by the modern plate, and with the exercise of ordinary intelligence, constant and most satisfactory results are to be obtained by following its indications. It is interesting to note that separate editions of the book are issued for the Northern and Southern Hemispheres and for the United States of America respectively. We do not notice any reference to colour photography in the book, and we cannot agree that the device of staining slides or prints uniformly with weak solutions of aniline dyes can ever give "artistic effects." To our mind the results are garish and unpleasant, and not to be compared with those obtained by the various colour-toning methods or by carbon printing.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

Tuesday.

Therapeutical and Pharmacological Section (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 p.m.

Paper:

Dr. Bashford: The Immunity Reaction of Cancer.

Discussion:

On Proprietary, Patent, and Secret Remedies, (opened by Professor W. E. Dixon).

Pathological Section (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at the National Hospital, Queen-square, W.C., at 8 p.m.

Dr. F. W. Mott, F.R.S., and Dr. Edgar Silvester: Changes in the Nerve Cells of a Man who Died 7 Hours after receiving a Current of 10,000 Volts

Dr. F. W. Mott, F.R.S.: Two Specimens from Professor Marinesco illustrating Regeneration of Nerves.

Dr. A. J. Hall: Two Cases of Cyst of Choroid Plexus.

Dr. Batten and Dr. Gordon Holmes: A Recent Case of Acute Poliomyelitis.

Dr. Hinds Howell: Two Cases of Tumour of the Pineal Gland.

And other communications.

Friday.

Laryngological Section (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler).

Cases and Specimens.

Section of Anæsthetics (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 p.m.

Adjourned Discussion:

On Mr. Bellamy Gardner's Paper on Lymphatism (opened by Dr. Farquhar Buzzard).

Saturday.

Otological Section (Hon. Secretaries—Hunter F. Tod, H. J. Marriage): at 10 a.m.

Cases and Specimens.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

Thursday.—4.15 p.m., Clinical Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday. -4 p.m., Dr. J. Galloway: Clinique (Skin). 5.15 p.m., Lecture:—Mr. N. Raw (Liverpool): Treatment of the Surgical Forms of Tuberculosis by Koch's Human Tuberculin.

Tuesday.—4 p.m., Dr. W. Carr: Clinique (Medical). 5.15 p.m., Lecture:—Mr. H. L. Eason: Affections of the Eye caused by Inflammation of the Accessory Sinuses of the Nose.

Wednesday.—4 p.m., Mr. J. Berry: Clinique (Surgical). 5.15 p.m., Lecture:—Dr. F. Powell: The Treatment of Mastoiditis.

Thursday.—4 p.m., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 p.m., Lecture:—Mr. J. Clarke: Some Painful Surgical Conditions of the Feet.

Friday.—4 p.m., Mr. H. Tilley: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Lecture:—Mr. Baldwin: Practical Surgery.

Tuesday.—10 a.m., Dr. Moullin: Gynæcological Operations. 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Robinson: Gynæcology.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 p.m., Operations. Dr. Robinson: Diseases of Women. 5 p.m., Lecture:—Mr. Beddard: Medicine.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Dr. G. Stewart: The Significance of Ocular Paralysis in the Diagnosis of Nervous Disease.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Low: Sleeping Sickness.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 11 a.m., Mr. B. Harman: Diseases of the Eyes. 2 p.m., Medical and Surgical Clinics. X Rays. 2.30 p.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Evans), 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 p.m., Lecture:—Mr. H. W. Carson: Intussusception.

Wednesday.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. H. Pirie).

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel).

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Tuesday.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin.

Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye. 3.30 p.m., Special Lecture:—Mr. Cargill: The Normal Fundus Oculi and its Common Anomalies.

Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat. 2.30 p.m., Special Lecture:—Dr. Rankin: Meningitis and its Treatment.

Friday.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 3.15 p.m., Special Lecture:—Mr. McGavin: Operative and Post-operative Accidents and Complications.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Tuesday.—3.30 p.m., Clinical Lecture: Mr. S. Scott: Researches in Otology.

Friday.—3.30 p.m., Clinical Lecture:—Mr. D. Armour: Surgery of Paralytic Deformities.

HOSPITAL FOR SICK CHILDREN (University of London), Great Ormond-street, W.C.

Thursday.—4 p.m., Lecture:—Mr. G. Waugh: Spinal Caries.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

Monday.—3 p.m., Clinical Demonstration: Dr. H. Campbell.

Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie.

Wednesday.—3 p.m., Clinical Demonstration:—Dr. F. Palmer.

Friday.—2 p.m., Clinical Demonstration:—Dr. P. Stewart. 5.30 p.m., Clinical Demonstration: Dr. E. Macnamara.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

Monday.—5.30 p.m., Lecture:—Mr. F. S. Edwards: Fistula.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. Atkinson: The Nose.
THURSDAY.—4.30 P.M., Clinical Lecture:—Dr. Atkinson: Syphilis of the Throat.
FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Labyrinth.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—The Solution of the Confusion between Pityriasis Rubra Pilaris and Lichen, and the Treatment of Each.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (1st).—London (2 P.M.). St. Bartholomew's (1.30 P.M.), 'St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 26th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 20	29·56	W.	...	49	41	36	36	37	Fine
„ 21	29·74	N.W.	...	50	39	32	31	33	Fine
„ 22	29·92	N.	...	55	43	30	...	31	Cloudy
„ 23	30 02	W.	0·04	44	43	31	33	34	Cloudy
„ 24	28·73	S.W.	0·45	50	43	34	42	43	Raining
„ 25	29 07	N.E.	0·09	62	38	34	33	34	Cloudy
„ 26	29·18	N.W.	...	53	36	25	...	28	Cloudy

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.

B.—Messrs. Blundell and Rigby, Lond.; Mr. F. A. Brockhaus, Lond.; Messrs. Branson and Co., Lond.; Mr. C. Birchall, Liverpool; Messrs. Bolton and Paul, Norwich; Mr. E. Bougault, Paris; Messrs. P. Blakiston's Son and Co., Philadelphia: Mr. H. Booth, Bradford; Mr. Haydn Brown, Caterham; *Die Badeanstalt*, Berlin; Dr. C. A. Bucklin, Glasgow; British Medical Benevolent Fund, Lond., Hon. Secretary of; Dr. W. Lyne Blight, Cardiff; Mr. Leonard A. Bidwell, Lond.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Dr. H. J. Clarke, jun., Doncaster; Lieutenant-Colonel E. R. W. Carroll, I.M.S., Dibrugarh; Messrs. J. and A. Churchill, Lond.; Messrs. A. H. Cox and Co., Brighton; Mr. H. A. Collins, Croydon; Dr. F. G. Crookshank, Lond.; Mr. Cuthbert E. A. Clayton, Manchester; Dr. P. J. Cammidge, Lond.

D.—Dr. J. B. Deaver, Philadelphia; Messrs. Dawson and Sons, Lond.; Dr. W. Campbell Downes, Motherwell.

E.—Mr. A. R. Elliott, New York; Evian-Cachat, Lond., Manager of; Mr. W. Ettles, Lond.; E. B. I.; Messrs. Ellis, Son, and Paramore, Sheffield; E. R. M.

F.—Dr. C. Fitzpatrick, Manila; Messrs. Fannin and Co., Dublin; F. S.; F. M. J.; F. N. B.; Dr. Cecil E. Fish, Worthing.

G.—Mr. H. Wippell Gadd, Exeter; Dr. A. J. Gwens, Stamford, U.S.A.; Great Yarmouth Hospital, Hon. Secretary of; Messrs. W. Gaymer and Son, Attleborough; Glamorganshire County Council, Cardiff, Clerk of; Gloucester Royal Infirmary, Secretary of; Mr. F. E. Gordon, Cockermouth; Messrs. C. Griffin and Co., Lond.; Mrs. Galway, Weymouth.

H.—Mr. G. O. Henninger, Lond.; Messrs. C. J. Hewlett and Son, Lond.; Dr. H.; Messrs. Hough, Hoseason, and Co., Manchester; Mr. T. H. Hewitt, Lond.; H. G. J.; Mr. K. Hirose, Okayama; Messrs. Haasenstein and Vogler, Frankfort.

I.—Messrs. Ingram and Royle, Lond.

J.—Dr. O. Jennings, Le Vésinet; *Journal Médical de Bruxelles*: Messrs. R. Jackson and Co., Lond.

K.—Messrs. R. A. Knight and Co., Lond.; Dr. W. Klinkhart, Leipzig; Mr. J. Kearney, Lond.; Messrs. Kutnow and Co., Lond.; Dr. W. Kempner, Berlin; Dr. F. Kanngiesser, Braunfels a-d-Lahn; Mr. S. V. Ketkar, Ithaca.

L.—Mr. H. R. Leigh, Horwich; Leicester Infirmary, Secretary of; Mr. J. B. Lawford, Lond.

M.—Mr. G. B. Messenger, Lond.; Mr. A. Maloine, Paris; Messrs. C. Mitchell and Co., Lond.: Metropolitan Ear, Nose, and Throat Hospital, Lond.; Secretary of; Maltine Manufacturing Co., Lond.; Dr. N. W. McCrary, Woodbury, U.S.A.; Dr. H. L. McKisack, Belfast; M. C.; Dr. Modlinski, Moscow; Mr. J. Murray, Lond.; Dr. H. Mallins, Watton; Messrs. W. K. Morton and Sons, Lincoln.; Dr. M. R. McDougall, Croydon.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; *New York Medical Journal*, Assistant Editor of; Dr. A. B. Northcote, York; Mr. H. S. Northcote, Lond.; Mr. W. S. Nichol, Wiltonburn.

O.—Messrs. H. J. Osborne and Co., Lond.; Œuvre d'Enseignement Médical Complémentaire, Paris, Rédacteur en Chef.

P.—Dr. A. Howard Pirie, Lond.; Peckham House, Lond., Superintendent of; Mr. Norman Porritt, Huddersfield; *Practical Medicine*, Delhi, Publishers of; Dr. W. H. Phelps, Leigh Woods; Messrs. Peacock and Hadley, Lond.

R.—Dr. Repezeaun, Bucharest; Royal Society, Lond., Assistant Secretary of; R. C. P.; Royal Surrey County Hospital, Guildford, Secretary of; Messrs. Rebman, Lond.; Royal Statistical Society, Lond., Assistant Secretary of; Redruth Union, Clerk of; Mr. T. H. Rowntree, York; Mr. Arthur B. Rogers, Cliffe-at-Hoo; Dr. Samuel Rideal, Lond.; The J. D. Riedel Co., Lond.; Messrs. Reynolds and Branson, Leeds.

S.—Dr. N. I. Spriggs, Shrewsbury; Messrs. Street and Co., Lond; Southport Infirmary, Secretary of; Messrs. S. B. Sketch and Co., Johnston; Miss Stocks, Sheffield; Mr. C. H. Sedgwick, Leeds: Stepney Spare Motor Wheel Co., Llanelly; Dr. C. Sanders, Lond.; Mr. T. L. Simons, Lond.; Messrs. R. Sumner and Co., Liverpool; Messrs. J. Smith and Co., Lond.; St. Peter's Hospital, Lond., Secretary of; Messrs. Salt and Son, Birmingham; Scholastic, Clerical, &c., Association, Lond.; Mr. K. Schall, Lond.; Dr. W. L. Stuart, Camberley; Dr. G. Steele-Perkins, Lond.; Dr. J. Odery Symes, Clifton; Mr. T. S. Whyte Smith, Edinburgh.

T.—Mr. G. S. Thompson, Lond.; Mr. H. M. Thomas, Goodwick; Temperance Male and Female Nurses' Co-operation, Lond.; Mr. R. Thallon, Dundee.

V.—Dr. Ralph Vincent, Lond.; Messrs. Van Houten, Lond.; Messrs. J. W. Vickers and Co., Lond.; Vankaner State, India, Chief Medical Officer of.

W.—Miss Wright, Gresford; W. K.; Wolverhampton and Midland Counties Eye Infirmary, Assistant Secretary of; West London Medico-Chirurgical Society, President and Council of; Dr. G. Duncan Whyte, Swatow; Dr. F. Parkes Weber, Lond.; Captain F. Winslow, R.A.M.C., Bradford; Messrs. Wright and Sons, Bristol; W. G. D.

Y.—Mr. Macleod Yearsley, Lond.

Z.—Messrs. C. Zimmermann and Co., Lond.; Messrs. A. and M. Zimmermann, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. F. Alcan, Paris; A. B.; Dr. D. I. Anderson, Malacca; A. W. N.; A. W. K.

B.—Mr. J. Bain, Northampton; Messrs. S. and E. Banks, Lond.; Mr. H. Brice, Exeter; Mr. W. Bryce, Edinburgh; *British and Colonial Druggist*, Lond., Manager of; Mr. A. Bazire, Lond.; Messrs. Bedford and Co., Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. J. L. Bullock and Co., Lond.; Birkenhead and Wirral Children's Hospital, Treasurer to the; Dr. A. Ball, Lond.; Messrs. Bates, Hendy, and Co., Reading; Messrs. G. Back and Co., Lond.; Mr. W. Girling Ball, Lond.; Dr. J. Brena, Zacatecas, Mexico; Mr. N. Basak, Drug, India; Messrs. Beaufoy and Co., Lond.

C.—Dr. W. R. Coldicott, Lond.; Messrs. J. and J. Colman, Norwich; Messrs. Clayton, Lond.; Dr. F. C. Carlé, West Byfleet; Messrs. Colgate and Farnell, Eastbourne; Messrs. T. H. Castor and Co., Boston, U.S.A.; Dr. G. S. Carmichael, Edinburgh; College of Preceptors, Lond., Secretary of.

D.—Mr. A. Donnamette, Paris; Mr. E. S. Dean, Epsom; Messrs. Douglas and Foulis, Edinburgh; Mr. J. E. Drake, Llansamlet; Mr. J. T. Davenport, Lond.; Dr., Streatham Hill.

E.—Eastbourne Corporation, Medical Officer of Health of; Dr. D. Eakin, Lond.; Dr. G. L. Eastes, Lond.; Messrs. Eason and Son, Dublin.

F.—Messrs. Findlater, Mackie, Todd, and Co., Lond.; F. S.

G.—Mr. S. S. Grimley, Lond.; Mr. H. M. W. Gray; Aberdeen; Messrs. Gale and Co., Lond.; Mr. W. Gough, Leeds; Mrs. Gunn, Hindhead; Grimsby and District Hospital, Matron of; Dr. S. T. Gray, Albia, U.S.A.

H.—Mr. J. Heywood, Manchester; Mr. Marshall Hall, Liverpool; Dr. T. B. Hearder, Leeds; Dr. G. F. Hulme, Felixstowe; Huddersfield Corporation, Treasurer to the; Mr. J. Taylor Hughes, Altrincham; Hants County Asylum, Fareham, Clerk to the.

J.—J. H.; J. N. P.; J. R. T.

K.—Mr. H. M. Klein, Leeds; Dr. G. Kirkwood, Peterborough; Messrs. Kilner Bros., Lond.; Dr. A. Kinghorn, Coomassie; Mr. M. J. Kelly, Limerick.; Dr. G. S. Keeling, Attleborough; Kensington Dispensary, Lond., Treasurer to the.

L.—Mr. H. K. Lewis, Lond.; Leeds General Infirmary, Treasurer to the; London Association of Nurses, Superintendent of; Mr. G. J. R. Lowe, Lincoln; Mr. G. L. Luksumanaswami, Bangalore; Leeds Public Dispensary, Secretary of.

M.—Dr. G. B. McKean, Ledbury; Dr. H. Macleod, Lond.; Metropolitan Temperance Association, Lond., Secretary of; M. H. J.; Manchester Royal Infirmary, Secretary of; Male and Female Nurses' Co-operation, Lond., Superintendent of; Manchester Northern Hospital for Women and Children, Secretary of; Mr. M. D. Makuna, Trealaw; Messrs. Menzies and Co., Edinburgh; Mr. J. F. Mackenzie, Edinburgh; Dr. J. McCaw, Belfast; Manchester Hospital for Consumption, Secretary of.

N.—Dr. T. B. Nariman, Bombay; Messrs. G. Newnes, Lond.; North-East London Post-Graduate College, Dean of.

O.—Dr. I. Olmstead, Hamilton, Ontario.

P.—Mr. J. J. Phelan, Port Talbot; Messrs. Parkin, Ness, and Co., Darlington; Messrs. Perry, Thornton, and Schreiber, Lond.; Paddington Guardians, Lond., Clerk to the; Mr. A. Piggot, Lond.

R.—Royal Institute of Public Health, Lond., Secretary of; Messrs. Roberts and Co., Lond.; R. C R.; Mr. H. P. Rees, Lond.; Royal National Orthopædic Hospital, Lond., Secretary of.

S.—Professor Schott, Frankfort; Sheffield Union, Clerk to the; Swansea Corporation, Accountant to the; Surgeon, Wood Green; St. Mary's Hospital, Manchester; Dr. C. N. Sears, Lond.; Mr. L. H. Steuber, Lond.

T.—Mr. H. Tilley, Lond.; Dr. Dawson Turner, Edinburgh; Mr. J. A. Tyler, Lond.; T. F. M. D.

V.—Messrs. Vigot Frères, Paris.

W.—Dr. S. A. K. Wilson, Lond.; Dr. J. J. Wallace, St. Leonards-on-Sea; Mr. F. Woore, Lond.; W. A. J.; Professor Sims Woodhead, Cambridge; Messrs. F. Williams and Co., Lond.; Mr. J. Ward, Lond.; Dr. E. G. Hamilton Williams, Ombersley; Mr. Owen Williams, Burry Port; Dr. J. Maxwell Wood, Dumfries; Mr. V. Whitgreave, Penzance; Messrs. Wyman and Sons, Lond.; Messrs. W. Whiteley, Lond.; Miss Wright, Lond.; Messrs. W. Wood and Co., New York; Warneford Hospital, Oxford, Secretary of; Dr. D. Wilson, jun., Huddersfield.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*			
One Year	£1	1	0
Six Months	0	12	6
Three Months	0	6	6

TO THE COLONIES AND ABROAD.			
One Year	£1	5	0
Six Months	0	14	0
Three Months	0	7	0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under	£0	4	0
	Every additional Line	0	0	6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

An Address

ON

ELECTRO-THERAPEUTICS IN GYNÆCOLOGY.

Delivered at the Opening of the Electro-Therapeutical Section of the Royal Society of Medicine, Session 1909–1910.

By SAMUEL SLOAN, M.D. Glasg.,
F.F.P.S. Glasg.,
PRESIDENT OF THE SECTION.

Gentlemen,—I am deeply sensible of the great honour you have conferred upon me by unanimously appointing me your President. I trust I shall not disappoint you. But for the uniform courtesy and kindness of the members of your council during the many years I have been associated with them, and the kind reception I have always met with at your hands when bringing my views before you, I should not have ventured to accept of the responsibilities of the office. With the continued help of the members of the council and of the section, however, and the able and ever-ready assistance of our indefatigable honorary secretary, combined with my own determination to do my best, I am hopeful that the section may prosper under your new President, as it has done under his able and faithful predecessors. The principal duty of a President is to preside, and this I have made arrangements during the coming winter to do with regularity.

To inaugurate the work of this session I wish to address you on a subject which has given me much thought and labour for many years. The results of this study and work must, of course, be considerably condensed for a single address, and may appear to you less convincing than if given in detail. This is unavoidable. What I put before you, however, will, I trust, arouse your interest in a subject which some of you may have neglected in the past.

My subject, Electro-therapeutics in Gynæcology, I have chosen for many reasons. I have had opportunities of testing the value of this treatment in diseases of women, not by watching others or by ordering others to do it, but by doing it myself. In every case the treatment has been carried out by my own hands, the notes are my own, and I can vouch for their accuracy. Again, the subject ought to appeal to a large number of the members of the section, for I suppose a considerable number of them are engaged in general practice and must frequently have cases in which they can use this treatment. It requires no more knowledge of gynæcology than can easily be gained in the ordinary course of practice by a little special study, mainly from the point of view of *diagnosis*.

I hope you will excuse me for saying that as a section there is some risk of our over-specialising. We may be drifting away from the sympathies of the mass of the profession, whom it ought to be our duty and our desire to carry with us. Our work might be made to appeal to them more, not in order to increase our membership, but to increase our influence. We should try to encourage the more general use of electricity as a remedial measure. No medical man, we ought to make it plain, can be fully equipped for the treatment of disease without an electrical installation of some sort. It need not be an expensive outfit, but it must be intelligently used. Only let him realise that it is a therapeutic power, not a something which, being ignorant about it, he does not believe in. Nor must he give it up in disgust because, perhaps owing to its laws being ignored, it refuses to produce magical results at once in cases in which everything else has failed. Let him put it fairly to the test and he will use it more and drugs less. The days of polypharmacy are passed; the days of pharmacy as a necessary and a routine element in therapeutics are passing. Physiological and physical therapeutics are in no small degree taking the place of drugs, and prescribing is fast becoming a lost art. Intelligent patients no longer undervalue the advice, and over-estimate the value of the prescription. They are satisfied more now than formerly with a few general instructions and the administration of some medical common sense.

Now, what have drugs done for gynæcology in the past? A generation ago the therapeutical agents of gynæcologists consisted of mercury, opium, iodine, poultices, blisters, local blood-letting, applications of caustics or antiseptics to the cervix, and attempts to do so to the interior of the uterus, hot douches, medicated pessaries, &c. Ask a gynæcologist what he now trusts to apart from surgical interference, including under this head curettage of the endometrium, and he will answer, "Douching and tampons." I have asked several gynæcologists lately, and this was the answer I got.

In former days gynæcology was wholly in the hands of the physician: when a surgical operation was required this was done by the general surgeon. At the present time the gynæcologist is essentially and almost wholly a surgeon, and so bold and successful has he become that no part of the abdomen is free from his inroads. Abdominal surgery is a field of operation fast becoming his "by right of conquest," for he it was who first proved his ability to occupy and retain it. It may well now, therefore, be asked "Is medical gynæcology dead?" So far as carrying out systematic medical treatment in pelvic diseases nowadays is concerned the answer may well be "Yes," for so little faith have the specialist and the general physician in this, that its measures are carried out with little expectation of benefit and in a desultory way, and therefore with little likelihood of profit to the patient. The physician's main treatment nowadays consists of sedatives for dysmenorrhœa, ergot for bleeding, and, wisest of all, rest and tonics to improve the general health.

Now what I am prepared to prove to you to-night is, that more, much more, can be done with practically no drugs whatever, no tampons, no douches, little, if any, confinement to bed, and no "messing" by the patient herself. True, I have not dispensed wholly with the measures I have enumerated; but I am becoming less and less dependent upon them, and I frequently, with the best results, dispense with them entirely, thus putting the treatment I practise to an almost unfairly severe test.

Now, if electro-therapeutics be left out in the treatment of pelvic cases, what is there left? Surgical cases, even gynæcological surgeons will admit, do not comprise more than 5 per cent. of all cases of pelvic distress in women. What about the remaining 95 per cent.? Are these to be perfunctorily treated with the pretence that the best is being done for them? I read lately a tirade by an eminent gynæcological surgeon against the medical gynæcology of the past; but what had he to offer? Mainly surgery and the treatment of the husband. Of electricity in such affections he said: "The use of electricity in these cases is, in my opinion, one of the biggest frauds inflicted upon the confiding public." You will agree with me, I think, that the man who accuses so many of fraud convicts one—himself—of ignorance and prejudice. Think, therefore, of the temptation which the gynæcological surgeon is exposed to. Growing tired of perfunctory attempts at relieving his patient medically, he is tempted to suggest and carry out a more rapid, and certainly a more radical, method by removing the organ which he has not the patience or the skill to cure. Under these circumstances, since "there is a good deal of human nature in man," even in a gynæcological surgeon, a selfish ambition is apt to influence him. A desire to be able to reckon his ovariotomies and hysterectomies by the hundred is, I fear, sometimes a real danger to his patient, no matter how honestly he may try to rise above such a weakness. This would be less of a danger if mutilation meant always cure. Ovaries can be easily removed, but they often are so for a pain which refuses to be removed. Though for many years this has been suspected, it has of late been brought home to operators more forcibly, and a reaction is setting in in the direction of non-surgical gynæcology. Yet we have seen how hopeless its measures have been in the past.

What, then, have I to say regarding that which I am proposing as a substitute for semi-profitable medical treatment and useless as well as dangerous operations? Can I ask you to offer hope to the woman who will rather bear the pain of her ovaries than lose them; some bleeding than the removal of her womb? Is there no substitute for mutilation but resignation on the one hand, or nerve prostration from the baneful effects of sedative drugs or so-called stimulants on the other?—and the latter is too often the fate of the neurasthenic. I have no doubt it will please you if I am able to show that electro-therapeutics may prove a substitute for these; that by its help cure may often take the place of mutilation, and dangerous drugs may be rendered unnecessary. I do not pretend that gynæcological surgery can be very greatly reduced by electro-therapeutics, but that it will be often rendered unnecessary I am satisfied.

For the introduction of electro-therapy into the practice of gynæcology we are indebted to Apostoli, who was in some respects a great man. His work was much boomed at first, then much contemned; and I fear now that he himself is being ignored as having been of little account. Dr. Thomas Keith, the eminent pioneer in operative gynæcology, speaking of his treatment for fibroids at the close of the dedication to Apostoli of his work on "The Treatment of Uterine Tumours by Electricity," says "that in a few years you will see your treatment adopted all over the world I have no doubt." In spite of this warm appreciation Apostoli has gone from amongst us comparatively a disappointed man. Few are now ready to do him reverence. Of these few I am one, and I take this opportunity of paying a tribute to his memory.

Had Apostoli done nothing but enforce the value of electricity in the treatment of uterine fibroids he would have done a good work, notwithstanding the condemnation of this treatment by many eminent gynæcologists of the present day, these mostly, however, belonging to the class that have not tried it. Apostoli's fame, however, does not rest only on his work on uterine tumours. Whatever ultimate decision may be arrived at regarding the effects of electrolysis, I feel sure that Dr. Apostoli has rendered a signal service to the profession by his scientific methods, which have done not a little to remove this undoubtedly valuable therapeutic agent from the hands of unqualified though probably honest practitioners into those of medically qualified and scientific observers. He has also contributed much valuable information based on his own experiments and observations on the electrical treatment of most forms of pelvic disease, though his work in this direction is either unknown or ignored by those who speak disparagingly of his better-known work. That electricity in gynæcology means mainly electrolysis for uterine tumours seems to me to be not only the opinion of the profession in general, but even, though in a less degree, of electro-therapeutists also, with the exception of those engaged in the treatment of gynæcological cases by this means. This is evident from text-books on electro-therapeutics and on gynæcology. As an example, in one of the best of recently published works on medicine, Green's "Encyclopædia and Dictionary of Medicine and Surgery," less than one column is devoted to electricity in gynæcology; and the whole of this refers to the treatment of uterine tumours by the Apostoli method. I had the pleasure of knowing Apostoli, and have carefully studied his works; and I feel assured that his observations were trustworthy and his character sterling; whilst his modesty was a silent rebuke to his detractors. He never pretended that he could by his treatment remove uterine tumours by absorption, only that he could symptomatically relieve the unfortunate possessors of these tumours; and for the proof of this statement there is abundant evidence at the present day in the records of others. My work in this direction has been very limited, but it does not take from the weight of the evidence in favour of Apostoli's views. When I have said this much I have said practically all I mean to say on the subject of electrolysis. My endeavour to-night is to bring in review before you the whole of my work in electro-therapeutics in gynæcology.

For 15 years past I have in most of my cases of gynæcology used electricity in some form; and the experience thus built up may be worth asking your attention to. It has left upon me an impression favourable to the frequent application of electricity in this department of medicine. The picture, however, presented to me on looking back on my work with the present object in view, was a vague one; which, whilst it was sufficient to influence me, was too far away, too much of an impressionist picture, to appeal forcibly to one who could not be expected to appraise its value in detail. Even to myself it was a vague picture, though one that satisfied me. When considering how to convey to you my impressions of these 15 years work, I felt that whilst, during the progress of the work, I was unable to see the wood for the trees, on looking back I became unable to see the individual trees for the wood. I have accordingly gone over in detail all my work during the past. That I have been able to do so with precision is due to the fact that all the cases were minutely detailed at the time. Everything has been recorded, the successes and the failures alike; not from any expectation of after publication, but for my own guidance at the time and in the future. Sometimes the record was a despairing one, sometimes a cheering one, but always a faithful one.

In tabulating the cases, I have omitted many out of a total of several hundreds. Those omitted comprise the following: 1. Those resulting in cure where some electric treatment was applied immediately after curettage, the curetting being in my opinion the main cause of cure and the electricity only an adjunct. 2. Those in which all the usual forms of treatment were being employed *plus* some electric applications, but where there was no evidence that the latter had any material influence on the improvement obtained. 3. All cases in which only a very few applications were made, with one exception—No. 4 on the list which I intend submitting to you—and this for a special reason which I shall afterwards give. 4. All cases in which the electric treatment was general only, no local applications having been made, with two exceptions, Nos. 115 and 139, and for a special reason to be afterwards explained.

Although this reduces the total number very considerably it yet leaves a sufficient number—153 cases—to judge as to the efficacy of the treatment. For a study of these I have arranged the complaints under 15 heads. I expect to be met here with the criticism that these are labels only, not morbid entities. I frankly admit that this is so. What else, however, are our usual classifications of disease? We know diseases mainly, sometimes only, by their signs and symptoms. A classification of the diseases recorded in my list of these 153 cases, to be absolutely accurate and complete, would require probably 153 different names, for no two are exactly alike. Again, a disease of the same name requires often varied treatment—first, according to its degree, and next on account of the personal equation. My arrangement, however, is a convenient one. You will observe on the list that two labels are sometimes employed for the same case; for instance, septic infection and dysmenorrhœa, the one being frequently quite independent of the other and requiring different treatment. In two instances two records are made of the same case. Here the complaints treated were quite disconnected and were at considerable intervals of time apart.

Since this is a record of my own work only I make no mention of the treatment of diseases which are not found in my list, nor do I refer to what others have ascertained, or have believed, to be beneficial or the reverse in the conditions mentioned by me. My appeal to you is a personal one; it is based solely on a review of my own work. In order to render my complete record less bulky and more capable of being used at your leisure as a check on my calculations and inferences therefrom, as given in the tables under different heads, I have employed the letters of the alphabet to distinguish the complaints, the kind of current employed, and the result of the treatment. The following will serve as a key:—

1. *Consecutive numbers of the cases.*
2. *Complaint.—A*, Fibroids. *B*, Hæmorrhage apart from fibroids, menorrhagia and metrorrhagia. *B'*, Subinvolution without hæmorrhage. *C*, Endometritis, septic; including metritis. *D*, Pelvic inflammations, cellulitis, salpingitis, ovaritis. *E*, Dysmenorrhœa, various forms. *F*, Pruritus, vulvar and anal. *G*, Hæmorrhoids. *H*, Constipation. *I*, Pelvic distress, neuritis and other abnormal sensations. *J*, Cystitis. *K*, Irritability of the bladder. *L*, Incontinence of urine. *M*, Nocturnal incontinence. *S*, Sterility, when a cause of mental distress to the patient.
3. *Forms of current employed.—a*, Unidirected ("galvanic"). *b*, Alternating ("faradic" and sinsusoidal). *c*, High frequency. *d*, Electrochemical, "ionic." *c*, Static. *f*, Various kinds.
4. *Results.—a*, Practically cured. *b*, Very greatly relieved. *c*, Slightly or temporarily improved. *d*, Unknown or not improved.

[The notes of the following 15 cases are selected as fairly illustrative of a series of 153 which were given at length in the Proceedings of the Royal Society of Medicine, vol. iii., No. 1, November, 1909. I refer to this series by numbers.]

Some important omissions may be noted from the above list. All purely and indisputably surgical cases are excluded. Displacements also are omitted, although it will be seen from the notes that a large number of the cases in the list had retrodisplacement. This, though sometimes of considerable importance, as evidenced by the great comfort derived from a properly fitting pessary, does not of itself require mention here; since, when uncomplicated by inflammatory condition of the pelvis or by enlargement of the uterus, it cannot be considered a pathological condition. Cases requiring the galvanic cautery are also omitted, since

Table of 15 Cases illustrating the Applications of Electrical Treatment in Gynæcology.

	2	3	4	Brief notes of cases.	Remarks on results.
1	*a*	*a*	*b*	Married, aged 30, no children; hæmorrhage, due to fibroid tumour of the uterus; had been curetted.	"Practically none of the hæmorrhage since this treatment; tight feeling in abdomen gone since shortly after the electric treatment was begun; abdominal swelling decidedly less": report one year after beginning of treatment.
	b	*a*	*a*	Married, aged 29; pain when walking; uterine canal $3\frac{5}{8}$ in.; acute retroversion.	Feels "so well now"; no more treatment required.
42	*d*	*b–d*	*a*	Married, aged 43, several children; inflammatory tumour in posterior fornix, firm and tender, burning sensation in left side, spreading over hypogastrium; retroversion of uterus; pessaries could not be tolerated.	No improvement till ionic medication employed, in spite of all forms of medical treatment for years; swelling in posterior fornix gradually lessened and became moveable; uterus became normal in position without any pessary.
46	*e*	*a*	*a*	Married, aged 37, never pregnant; dysmenorrhœa since first menstruation, uterus retroverted, some adhesions.	"Could not desire to be better."
58	*k*	*b*	*a*	Married, aged 40, several children; irritability of bladder, micturition every five minutes.	Now micturition every two to three hours; patient said current was very "soothing."
69	*j*	*b*	*a*	Married, aged 25, never pregnant; pain after micturition for years, pain on pressure of sound on bladder wall, pus in urine.	"No bladder trouble whatever" after treatment.
73		*b*	*a*	Married, several children; expulsion of urine on sudden movement, urine normal, cystocele and rectocele.	"Really quite well"; primary faradic current employed.
94	*g*	*c*	*a*	Hæmorrhoids for one year, pain and copious bleeding; ordinary treatment of no avail.	"No pain, no bleeding, only a fulness."
98	*f*	*c*	*a*	Single, aged 26; "fearful itching" at vulva, in no way improved by ordinary treatment.	Remained practically free from pruritus for six years after treatment.
100	*i*	*c*	*a*	Single, aged 26; weakness and pain in pelvis; had been successfully treated for septic endometritis by curettage.	"Very much better in every way, no pain and no weakness now."
102	*h*	*e*	*a*	Married, aged 66, several children; atony of rectum, constipation sometimes absolute.	"Had practically no trouble for six years after."
106	*m*	*b–c*	*b*	Girl, aged 14; nocturnal incontinence, vulva scalded, meatus and vaginal orifice congested.	"So much better now"; improvement became more apparent a few weeks after cessation of treatment.
114	*b*	*d*	*a*	Married, aged 42, four children; metrorrhagia, practically continuous; curettage and intra-uterine monopolar high-frequency applications failed to arrest the bleeding.	Bleeding stopped after two intra-uterine applications of copper electrode, and has not returned.
116	*c*	*d*	*a*	Married, aged 45, no children; copious yellow discharge from vagina, in spite of long-continued treatment, including curettage on two occasions, left pyosalpinx which fills and empties itself into the uterus and the vagina at regular short intervals; tongue always foul.	Discharge now slight and white only; freer from pain than for eight or nine years; tongue is at last perfectly clean.
134	*c–s*	*d–c*	*a*	Married, aged 29, two children; toxæmia, weakness and pain in pelvis, inter-menstrual discharge, sterility.	"No weakness and no pain, discharge slight and pure mucus." Became pregnant six weeks after cessation of treatment.

the effect is caustic and not electric. In tabulating the results under the different items I have reckoned *a* and *b* amongst the benefited, and *c* and *d* amongst those not benefited, although some of the latter were partially improved.

The first in the list is fibroids. No case of fibroid tumour was treated by electricity unless for some symptomatic reason, usually bleeding or pain. The following are the results:—

TABLE *A*.—*Fibroids.*

Treated by *a* alone,	4	Improved, 3	Not improved, 1
,, *b* ,,	2	,, 1	,, 1
,, *a* and *b*,	2	,, 1	,, 1
,, *a*, *b*, and *c*,	1	,, 1	,, 0
	—	—	—
Totals	9	6	3

This record, though a small one, is not unfavourable to the employment of electricity in cases of fibroids, where these are causing bleeding or distress. Out of a total of nine, six cases showed sufficient improvement. Of the unsuccessful cases, one, No. 30, suffered mainly from pain. She was an epileptic and was so frightened by the current that the treatment had little chance. In another case, No. 24, where there were pain and hæmorrhage, absolutely no good resulted from the electricity or from a course of treatment which she had obtained in a hospital. Regarding the case of death from hæmorrhage, the report, one month before the fatal hæmorrhage, is, "Perhaps fully more than half as much blood lost now as was the case a year ago; the general health compared to one year ago, is now decidedly better."

Of the successful cases, the result was in some instances most gratifying. As an example, in Case No. 13 two months after treatment commenced the length of the uterine canal fell from "$4\frac{1}{2}$ inches at least" to 4 inches; whilst two months after the cessation of the treatment the patient's husband wrote to me thus: "My wife has been improving so rapidly that time has passed unknown to me. I am sure you would be quite proud if you could see how well she looks. She is quite well after her period is over, and the pain is now gone."

The limited time at my disposal to-night prevents me from entering into the details of the cases. I would state it as my opinion, however, that from my own somewhat limited experience electricity should always be tried in the treatment of bleeding fibroids before operation is resorted to. To explain why in some cases the relief from the hæmorrhage is marked and prompt, whilst in other instances the treatment is less successful or fails, I would remind you that the bleeding is not from the tumour but from the endometrium. In Roberts's "Outlines of Gynæcological Pathology," p. 173, the following remarks occur:—

> Sometimes the most remarkable changes are found in the endometrium. The whole endometrium is involved in an overgrowth of its elements wrongly called "endometritis"; but it is not as such an "itis" at all. The condition is really adenoma of the body of the uterus; vessels, glands, and stroma share in the general overgrowth, and the mucosa may sometimes be half an inch thick, or pedunculated adenomata (mucous polypi) are found. This increase in thickness is not so in every case, but appears to occur mostly in uteri with large submucous fibroids; with sub-peritoneal growths the endometrium may not be affected at all or may even be atrophied. Atrophy of the mucosa in uteri containing fibroids which project into its cavity is also seen. On the surface of such a tumour there is no endometrium, or only a few atrophied remains; in the depression into which such a tumour fits in the opposite wall a similar atrophy of the endometrium is found; it is due to pressure; while around the tumour is a distinct collar or corona of vascular endometrium, and at its very edge many of the delicate vessels of the endometrium are ruptured. Exactly the same condition occurs in the opposite pit into which the fibroid fits; deep in the hollow no endometrium, at the edge of the cup thick endometrium and a vascular corona of ruptured vessels.

The effect of the applications will thus depend on the parts of the uterine cavity in which the electrode is lying, and this the operator must remain ignorant of unless from information obtained from the results.

The treatment by the galvanic current ought with care to be perfectly safe. In evidence of this I refer you to Cases 4 and 26, in which pregnancy followed immediately after the applications of moderately large doses to the interior of the uterus: in the former case after one dose of 50 ma. for seven minutes; in the latter immediately after the fifth application, where the average dose had been about 60 ma. In this latter case the lady had been previously under skilled medical treatment and had been four years married without having become pregnant.

Regarding hæmorrhages apart from fibroids I can speak with no small satisfaction. The following table shows that there were in this group no failures, no case requiring after-curettage.

TABLE *B.*—*Menorrhagia and Metrorrhagia.*

Treated by			Benefited
a alone,	4	......	4
b „	1	......	1
a and *b*,	1	......	1
d alone,	5	......	5
Totals ...	11		11

Of these, one (No. 115) was not treated locally, but with dorso-abdominal applications of the alternating current, the benefit derived being probably due to an improvement in the tone of the abdominal circulation.

In Class *B'*—subinvolution—there are five cases. I have made this into a separate class because the cases in it were unaccompanied with menorrhagia or metrorrhagia or with septic infection of the endometrium. The patients usually complained of pain or other pelvic distress and their general health was poor. The enlargement of the uterus probably arises in such cases from an inflammation of its substance.

TABLE *B'*.—*Subinvolution.*

Treated by			Benefited
a alone,	3	......	3
a and *b*,	2	......	2
Totals ...	5		5

As might have been expected the following class, *C*, septic infections of the endometrium and the uterine walls, is by far the largest number, being in all 45. The septic fiend is woman's greatest enemy and is the despair of her physician. I have referred in a previous communication to you to the hopelessness of ordinary medicaments in such cases.

Before I began to treat these by electro-chemical methods I had treated all cases of sepsis by the curette, and in nearly all my cases with great benefit. Some further treatment was usually required, however, to complete the cure. I have practically abandoned this operation now, however, as a routine treatment, and my results are better than in the days of universal curettage. There may still be exceptional cases in which it may be advisable to perform this operation, but this will usually be as a preliminary to, not as a substitute for, ionic treatment. As an object lesson in this connexion I may mention that in seven of the septic cases in the following table curettage had been previously performed without relief, and in two of these cases this had been done on three separate occasions. Notwithstanding what I have said and inferred regarding curettage, I am ready to admit that I know of few forms of treatment to compare with skilfully executed curetting in suitable cases. That it can, however, often be superseded by electro-chemical treatment I know from a considerable experience of both.

TABLE *C.*—*Septic Endometritis.*

Treated by		Benefited	Not benefited
a alone,	8	8	0
b „	6	3	3
a and *b*,	4	1	3
c alone,	1	0	1
d „	26	25	1
Totals ...	45	37	8

Several deductions may be drawn from the above table, and some questions suggest themselves. That all these for which *a* alone were employed were successful is not to be wondered at, for the action of the intra-uterine electrode is antiseptic, if not caustic also. That *a* and *b* cases have fewer successful than unsuccessful results evidently arises from the fact that *a* alone having failed *b* could only act by improving the tone of the circulation. That *b* alone should have succeeded at all requires some explanation. I find that in one of the cases, No. 45, the septic condition was cured by local antiseptic applications and douches, but in spite of this improvement and of the benefit derived from general treatment, the faradic current was required for the pelvic pain, so that in this case, little if any credit may be due to it for the removal of the sepsis. Case 48 was also treated by antiseptics with much the same results as in Case No. 45, the faradic current acting mainly as a necessary pelvic tonic. Case 50 derived little benefit from my treatment, including curettage. No. 64 was also curetted on account of the continuance of the septic discharge. The faradic current, however, sufficed to materially reduce the pelvic inflammation. No. 66 received decided benefit generally, but there was no improvement in the septic condition. In Case 74 the current was employed after a third curettage, and was necessary for the treatment of the dysmenorrhœa. It is therefore obvious that the faradic current is of little, if any, service in cases of uncomplicated sepsis. This might quite have been inferred, but these cases attest the fact.

All the cases treated by the ionic method have done well with one exception. In this case the lady was sent to me after three operations for curettage had failed. Pus was welling out of the vagina, and there seemed no hope but from hysterectomy, the septic process having penetrated deeply into the walls of the uterus. After two months treatment the discharge became scanty, and was composed of pure mucus only. The patient now, however, began to fret at the treatment owing to arriving in a state of fatigue, in consequence of a long railway journey in cold and wet weather. The treatment therefore was less thoroughly applied and the discharge gradually returned. I advised either thorough treatment or none, and the patient is at present considering the matter. Thus out of 26 cases treated by electro-chemical methods 25 have been successful; whilst the remaining one promised to be so, and under suitable circumstances probably would have been a success also. Many of these cases had had curettage performed previously without a cure; and, whereas in all other forms of treatment for endometritis recurrences were quite to be looked for, I am observing that once this treatment is allowed to take full effect the result is practically a complete cure, there being no return of the patient for other treatment; whilst the continued improvement in the general health vouches for the completeness of the cure. No douching is permitted or required during the treatment, and there is no necessity for any change in the patient's habits; moreover, the duration of the treatment is less than that of antiseptic and caustic applications to the uterine canal in the usual manner.

That the case treated by high-frequency currents alone, No. 112, failed is probably due to the fact that the applications were vaginal only, not intra-uterine.

The affections included under the next head *D* vary considerably in their nature and in the degree of their severity. Whilst cases of sepsis may be obstinate, those arising from pelvic inflammations, including parametritis, perimetritis, salpingitis, and ovaritis, singly or in combination, are often quite hopeless by the ordinary methods. Treatment seems to relieve, but only till a little chill or a little fatigue reminds the patient that the cause of her aching pain is still there. Displacements of the womb complicate matters, pessaries being often tried, only to find that they make matters worse. These affections are the consequence of sepsis, though there may be no vaginal discharge observed. The following table indicates the results of the electric methods of treating them:—

TABLE *D.*—*Pelvic Inflammations.*

Treated by		Benefited	Not benefited
a alone,	5	4	1
b „	10	9	1
c „	4	4	0
a and *b*,	6	6	0
d, *a*, & *c*,	1	1	0
d and *b*,	1	1	0
d and *c*,	1	1	0
Totals ...	28	26	2

This seems at first sight incredible even to myself. I have gone over every case, however, more than once, and I see no reason to change the figures. True, in most, if not in all, of them the ordinary therapeutic measures were employed to assist, whenever they seemed to me serviceable; but from my previous experience of these I feel convinced that the good results are in a significant degree due to the electric measures. Indeed, I do not believe that such results could be obtained without the help of electro-therapeutics. Case 43 is put down as unsuccessful, and yet the last record says:—

> There is still great pain, but a careful examination can detect nothing except tenderness on pressure of the uterus, the broad ligaments, and the pelvic wall at the sides and posteriorly. There is great tenderness also over the lumbar vertebræ.

A gynæcological surgeon in Glasgow was then appealed to. His diagnosis was "neuralgia," and the treatment he advised was "cycling." There had been an inflammatory mass in the left fornix. This case has been put down as a failure on account of the continuance of the pain, though the inflammatory condition had disappeared; at least, there was no evidence of its presence.

Of course, several of those noted in the previous table as benefited are marked *b* on the list; that is, there was in these instances great improvement only. However, these so marked constitute 8 only of the 26 benefited, leaving 18 of "practical cures." It is interesting to note that of these 8 half of them are found to be amongst the first 12 cases of the list. A natural deduction from this is that the less favourable results at the beginning may have been due to want of experience of the treatment, the cases in the list being arranged as nearly as possible in the order of the time of their treatment.

Some of the cases in Table *D* were long under treatment, but this was compensated for by the fact that in no case was an operation required for the condition which I had treated electrically. One of them, No. 42, had unavailing treatment, including various forms of electric applications, by myself for years, a practical cure having been effected only after ionic medication was commenced, the result then having been, in the language of the patient, "marvellous." This patient has just a few days ago replied to my inquiry as to the final result. Her letter is a most grateful one and fully confirms the truth of the remark recorded in my notes at her last visit nine months ago, that "improvement will probably continue without further treatment."

The next table refers to cases of dysmenorrhœa simply as a symptom, no attempt being made to differentiate between the various forms of this affection. In some of the cases there was associated septic endometritis, and in others inflammatory affections of the pelvis; but as these may be present with no dysmenorrhœa properly so called I am dealing purposely with painful menstruation only in so far as I have treated it specially by electric methods.

TABLE *E.—Dysmenorrhœa.*

Treated by		Benefited	Not benefited
a alone	4	4	0
b ,,	8	5	3
a and *b*	4	3	1
c alone	1	1	0
d ,,	2	2	0
c and *e*	1	1	0
Totals	20	16	4

In a large number of cases of dysmenorrhœa general electric treatment is more suitable than local. In purely neurotic cases it is likely to be of more service. Case 139 was distinctly one for general treatment, and no local applications were made.

Table *F* refers to a most distressing complaint, frequently very chronic and very resistant to treatment—pruritus of the vulva. In all the cases of this which I have treated high-frequency currents have been employed by means of the effluve or vacuum electrode, and looking back on some cases in my practice before I knew of electric methods of treating disease, I often wish I had then had such effective means for their cure. No case has resisted this treatment. One (No. 56) had been temporarily benefited by galvanism and by the faradic current, but the pruritus disappeared for good only after high-frequency currents were employed. Even a case of diabetes (No. 118) yielded to this treatment. Though not absolutely cured, the trouble is now very slight, and is easily kept under by a very moderate attention to diet.

TABLE *F.—Pruritus, Anal and Vulvar.*

Treated by		Benefited
a, *b*, and *c*	1	1
c alone	4	4
Totals	5	5

Only otherwise incurable cases have been so treated. A creolin lotion and some ammoniated mercury ointment will often suffice in mild cases.

The next table refers to a complaint common in men also, but in my experience vastly more common in women. I refer to hæmorrhoids, and so I give it a separate table.

TABLE *G.—Hæmorrhoids.*

Treated by *c* alone, 6 ...... Benefited, 6

In few of these cases was a return necessary. They were all severe, and some of them would certainly have required operation. The result of this mode of treatment in my hands has been so good, even in the worst cases, that I would not advise operation, even in apparently hopeless ones, till high-frequency applications had been tried. In one of the cases zinc electrolysis was required for a fissure of the anus, two applications sufficing to effect a cure. The improvement in the general health due to the treatment is often most marked.

The next affection on the list is constipation. In no cases in all my practice have I seen this affection so obstinate in men as in some of these I have treated electrically in women. In two of them the constipation was absolute. Aperients had no effect, enemata had no effect; only by resorting to mechanical measures could the rectum be emptied.

TABLE *H.—Constipation.*

Treated by static induced current, 6 ...... Benefited, 6

The result of the treatment in these cases was a revelation to some of the patients. In one of them, the worst I have ever known, the complaint had followed an operation for piles. In a letter received from this patient ten months after the cessation of the treatment she says: "I can honestly say I never felt better than I do now. Do you think it would be wise for me to get married?"

Some additional cases of severe constipation which I am not recording in this table were also treated by the static induced current, but only for a few times. In these cases the improvement derived was in proportion to the number of applications made. From six to twelve applications generally suffice, and I endeavour to make the intervals of muscular contraction 80 to 90 per minute. A metallic electrode is inserted into the rectum and a clay pad placed on the abdomen, the length of the spark-gap being about ½ cm. The rhythmic contractions of the levator ani can be seen and felt, and their force can be regulated by the length of the spark-gap, whilst the relative force of the rectal and abdominal contractions can be altered to suit the patients' sensations by varying the amount of the clay electrode, which is allowed to rest on the abdomen.

In the next table I have placed all cases of indefinite sensations of the pelvis, including pain unaccountable unless from a neuritis. These abnormal sensations—neuroses of the pelvis—may be defined by the patient as "a bearing-down sensation," "a fulness," "a feeling of looseness," "a wearied sensation," "an aching feeling at the vulva," &c. Two were cases of severe orgasms, causing great distress and consequent nerve prostration. In the cases of neuritis there was generally a tenderness on gentle pressure over the whole of the pelvic walls and over the bodies of the lumbar vertebræ. I believe that in these cases the cause is mainly a constitutional one. Probably the affections in this table test the value of electrotherapy more than any other complaints. They are generally in no way benefited by any other form of treatment. As a rule, no sufficient cause can be found to account for them.

TABLE *I.—Pelvic Distress.*

Treated by		Benefited	Not benefited
a alone	4	3	1
b ,,	12	9	3
c ,,	3	2	1
d ,,	1	1	0
a and *b*	3	2	1
d and *e*	1	1	0
f alone	1	0	1
Totals	25	18	7

The proportion here benefited is considerable. In my experience treatment in these cases is usually unsatisfactory. As I have said, there is often present a constitutional neurotic taint. Two of them were epileptics. These, as might have been expected, appear amongst the seven unbenefited.

Those belonging to the next group, Cystitis, constitute a troublesome class under ordinary modes of treatment. I have not found them so, however, when treated by faradism. My list contains six. One of them was more a case of bacteriuria than of ordinary cystitis. It proved, however, the most obstinate of them all, though it was finally practically, if not absolutely, cured by ionic treatment. Another, No. 127, was more urethritis than cystitis, and it also was practically cured by ionic medication. The remaining four were cases of cystitis, with the usual symptoms—namely, frequent micturition, pain, and pyuria. The treatment in all the cases was effective.

TABLE *J.—Cystitis.*

Treated by *b* alone, 3	Benefited, 3
,, *c* ,, 1	,, 1
,, *d* ,, 2	,, 2
Totals 6	6

In Case 137 there was great nervousness due to pain and want of sleep, and the urethra especially was exquisitely tender, so that it was with difficulty the bi-polar electrode could be introduced. The treatment, however, at once began to tell. After three applications of the faradic current the electrode could be passed in with no pain, ordinary diet could be taken, and the urine became perfectly clear. Ten applications in all were given, and what impressed the lady most was her increase in strength and her difficulty in keeping awake. The current evidently acts as a nerve sedative and a muscular tonic. It is very soothing, but only when from a fairly large secondary coil and with rapid vibrations.

Cases of irritability of the bladder are usually difficult to cure, though dilatation of the urethra sometimes suffices. The condition is fully described by Matthews Duncan in his classical work "Clinical Lectures on Diseases of Women." He calls it "the irritable bladder." Its diagnosis is made when the following conditions exist: frequent micturition, pain, normal urine, bladder walls painless and elastic when the sound is passed. The employment of faradism in these cases gives most satisfactory results, as seen in the following table:—

TABLE *K.—Irritability of the Bladder.*

Treated by *b* alone, 3 ...... Benefited, 3

Cases of incontinence of urine are merely disagreeable, but they are sufficiently annoying to make the patient grateful for their cure. My list contains five of these. They were all treated by the primary faradic current and were all benefited. All of them occurred in married women. In three of them the cause was evidently due to parturition; in the remaining two it had followed chronic cystitis.

TABLE *L.—Incontinence of Urine.*

Treated by primary faradic current, 5 ...... Benefited, 5

In these cases the urine would escape when the patient was hurrying, golfing, laughing, lifting a weight, &c., so that the ability to dance "with no discomfort whatever," as one of them expressed it at the close of the treatment, must have been a delightful change.

I have treated two cases of nocturnal incontinence only thus: one by the faradic current alone, but in this instance with no benefit. The girl was mentally defective, and the trouble had lasted nearly all her life. Faradism was applied locally by me, and for a long time the galvanic current was applied to the spine by the girl's mother at home. As might have been expected, however, no benefit resulted. The other case was practically cured by applications of faradism to the spine, followed by some mono-polar high-frequency treatment to the sacral and hypogastric regions.

Several cases of sterility are recorded in the list, but for this treatment was mainly directed towards the removal of all existing morbid conditions and improving the tone of the pelvic organs. When this was successful pregnancy frequently followed, but I have little, if anything, to say as to what effect electricity may have upon sterility *per se.* Of course, the cause may be irremoveable. As bearing on this matter of sterility, I may relate a recent interesting case—No. 134. The lady came to me in May of last year. She suffered from toxæmia due to septic endometritis, and complained of general weakness and pelvic pain, but especially of sterility. She was 29 years of age, and her previous confinement had been three years before. She came to with the expectation that I would curette her, but I asked her to permit me to treat her without operation. After 11 applications of ionic medication her general health was completely restored, and she had lost her pelvic distress, whilst the uterus and cervix had become perfectly aseptic. She returned a few months after, still perfectly well in every way. I then administered on five occasions intra-uterine mono-polar high-frequency treatment as a uterine tonic, after which I dismissed her, stating that she required no further treatment. Six weeks later she became pregnant. Writing to inform me of this she adds: "I am very well indeed, and have felt ever so much better, ever since the first course of electricity I had."

You will have observed that some of the cases had several forms of electric treatment; but if, at your leisure, you glance over the complete list, you will notice that for some time treatment was largely confined to high-frequency applications and afterwards mainly to electro-chemical methods. This was only natural, since new methods excite more enthusiasm, and are usually employed on all possible occasions in order that one may test by knowledge and experience the theory upon which the employment of the treatment is based, and thus be able to correctly estimate their value and judge for what cases they are best suited.

This tendency to rush anything new had once an amusing result in the practice of an eminent Scottish gynæcologist of a generation ago. During a busy afternoon on one occasion the prescriptions of two of the cases became mixed, Mrs. Smith getting Mrs. Thompson's prescription and Mrs. Thompson getting Mrs. Smith's. One of these ladies on discovering the mistake hurried back in great distress and, handing her prescription to the man servant, pointed out the error. He looked at it, told her it was all right, she was just to take what was written on her prescription, adding with a smile, "They're a' gettin' that the day."

As an illustration of a case requiring more than one form of electric energy in the course of the treatment, let me relate a recent one. This lady complained that since her confinement "the womb came out of the passage," as she expressed it, there was a general sense of pelvic discomfort, the menstrual periods were too frequent, and the flow was excessive, whilst there was a constant discharge of yellow matter between the menstrual periods. On making an examination I found the following. The anterior wall of the vagina was prolapsed, the uterus was enlarged and its cavity was dilated throughout, the cervix was gaping, and the os was excoriated. She had at first vaginal and intra-uterine ionic treatment, then vagino-hypogastric static-induced applications, and, finally, since, though the discharge had ceased to be yellow, there was an excess of mucus from the vagina, some intra-uterine mono-polar high-frequency applications. Under the last form of treatment, the high frequency, the mucous discharge from the vagina became only a quarter of what it had previously been. Throughout the whole of the treatment no douching was done, no extra rest ordered, and, with the exception of an occasional pellet of styptol, on account of some bleeding following the intra-uterine ionic medications, no drugs were ordered or taken. Eight months after the close of the treatment she reported to me as follows: "I am still very well, feel quite firm, and have practically no discharge of any sort." Her husband added: "She is practically a new woman."

I should have liked to discuss the methods of application of the electricity under different conditions. I have no time for this, however, on the present occasion nor for any reference to the physiological *modus operandi* of the treatment. This latter is largely theory. I have confined myself to stating facts and I thank you for your patience in listening to them. I cannot, however, bring my remarks to a close without emphasising the importance of general electrisation in cases accompanied with low vitality, since whatever tends to improve the general tone of the patient is, of course, a great help in curing her of disease. Now that general electrisation can do this when drugs, rest, change of air, &c., have failed, I feel as sure as I do of anything in medical treatment; and the high-frequency mode of doing this is both effective and convenient. It must, however, be employed in suitable cases only, and with the skill which is obtained from experience.

Having been requested by several members of the section to supplement my address by giving some details as to technique, I trust the following remarks on this subject will prove satisfactory.

Regarding the unidirectional or "galvanic" current as it is commonly called by electro-therapeutists, I obtain my supply from a battery of 30 to 40 Leclanché cells, which gives a voltage of over 50. I prefer this to a shunt current off the main, since the voltage of this in my house is 250, and accidents might happen with such a voltage. For intra-uterine electrolysis I almost invariably apply the positive pole internally, the electrode being the usual platinum one recommended by Apostoli, the vaginal portion of which is insulated by means of a vulcanite tube. At first 50 ma. is an ample dose. More than this may be dangerous as a start. In the case with fibrosis uteri (No. 148), at the close of a seven minutes' application of this strength the patient became alarmingly faint, probably in part due to the fatigue of the preliminary examination. This was her first visit and she was, from long-continued bleeding, very weak. I have given as high a dose as 200 ma., but only in my early practice. In one case, No. 25, when a current of 95 ma. had been applied for three minutes the patient had an epileptic fit. I then learned that she had been subject to such attacks.

When applying this form of treatment for parametritis I wrap a small round leather-covered carbon electrode with a large mass of cotton-wool soaked with warm saline solution. This is inserted by means of a perineal retractor, and is placed against the part requiring treatment. In this manner I find a dose of from 50 to 120 ma. can be borne with no discomfort and with no damage to the wall of the vagina against which the electrode is placed. This is due to the fact that the surface of the electrode is proportioned to the quantity of the current. As in the application of the intra-uterine electrode, the metal stem of the carbon electrode is covered by a vulcanite tube to protect the vagina from the bare metal.

The negative electrode is usually placed over the abdomen, and for currents of over 100 ma. requires to have a surface of about 50 square inches. The one used by me is made of sculptors' clay spread on copper gauze and covered in by one or two folds of lint. It can be kept warm for an afternoon by being placed on the top of a closed copper pan filled with boiling water. It must be kept constantly moist or it will crack and lose its flexibility, besides ceasing to act as a conductor.

For ionic medication the same voltage is used, but I rarely exceed 20 ma., and for such doses one or both hands can be placed on the clay electrode, thus rendering unnecessary the undressing of the patient. Of course rings should be removed. If the speculum is a small one 10 to 15 ma. is as large a dose as the cervix can bear without suffering on the part of the patient; and where, in my haste to obtain rapid results, I have applied larger doses, I have found at the next visit that around the os there had been some superficial necrosis, causing a copious amount of muco-pus. This discharge, however, is in great part aseptic, having arisen from an electro-chemical destruction of tissue. At the next visit there will probably be found pure mucus only. With the solid metal electrode inserted into the cervix 20 ma. is an average dose, and when the electrode is a copper one three or four minutes will be required with a reversal of the current in order to loosen the electrode; first bringing the current slowly back to zero, and then, as when first applying it, gradually bringing it up to its maximum by any convenient and reliable rheostat. A zinc electrode requires no reversing. I have used the latter metal mercurialised, but if this is done more than once and there is much difficulty in introducing the electrode past the internal os the mercury may render the electrode dangerously brittle.

Before electric applications to the interior of the uterus the vagina and cervix must be cleansed either by a douche or a dry cleaning through the speculum. The strength of the solution I use is 1 per cent. $CuCl_2$, or the same of $ZnCl_2$. When there is an erosion of the cervix and the copper solution is used there will be found at the end of the séance a green deposit of oxychloride of copper covering the eroded part and difficult to remove by means of a cotton-covered probe, should an attempt be made to do so. As the erosion heals, however, this is at first easily removed by the probe and finally ceases to form, except just at the edge of the os, when the erosion has completely healed.

When the galvanic current is employed either for electrolysis or for interpolar action the sensations of the patient serve as a useful guide as to dose and time. Regarding the latter, I find from 7 to 15 minutes the average required—the former for initial intra-uterine doses and the latter for ordinary ionic applications.[1]

In the case of the alternating current the faradic form of this is obtained from a secondary sledge coil, having 8000 to 9000 turns of fine wire and capable of being tapped for a varying number of windings—the larger number for sedative and the smaller for stimulative purposes. The break is the usual vibrating hammer type. The current is measured by my faradimeter, which I consider as essential in the use of this current as a galvanometer is admitted to be in the case of the galvanic. An illustration of this instrument will be found at p. 68 of Dr. Lewis Jones's "Medical Electricity," fourth edition, whilst the construction of the instrument and the principles of its calibration are described in the Transactions of the Glasgow Philosophical Society, 1897–98. The average current for internal applications and for bladder cases is from 3 to 5 ma.; whilst when used with the double vaginal electrode, a current of 10 or more ma. may be applied. When applied mono-polar to any special part of the vagina the carbon electrode I have referred to can be used. These currents are for the more sedative form; if from a small number of turns as a stimulant less current must be used or irritation and an increase of the pain will result. Thus, harm or good may be done by these currents from the secondary coil.

The primary induced current may be applied, mono-polar or bi-polar, to the interior of the uterus or of the bladder. The impulses should be from 50 to 100 per minute, and the amount of current as measured by the faradimeter—not by the galvanometer—should vary from 1 to 10 ma. A small amount of current only can be tolerated if the application is vagino-abdominal, or if the electrode is introduced into the urethra only; if bi-polar intra-uterine or bi-polar and well into the cavity of the bladder, then a larger current can be borne. The amount of the current can be increased without distress if the rate of impulse is increased.

The sinusoidal current used by me is taken from a magneto-electric apparatus driven by means of an electric motor. I sometimes employ it as a substitute for the faradic in dorso-abdominal applications, using two clay pads for the purpose with a quantity of current of 3 to 8 ma., as measured by my faradimeter. This I find an admirable tonic, acting, as I believe it does, on the abdominal sympathetic nervous system.

In the cases recorded by me, as treated by high-frequency currents, I have employed the auto-condensation method occasionally as a general tonic. Locally this current has been used by means of the effluve connected directly with the top of the solenoid with the moveable contact attached to the highest ring of the lower solenoid. When the vacuum electrode is required it is also connected directly to the top of the solenoid, but in this case the moveable contact is attached to the sixth or seventh ring of the lower solenoid. In each case the lowest part of the solenoid is connected to the condensor plate under the couch. A conical vacuum electrode serves for the vagina and for the rectum as in cases of pruritus. When employing the mono-polar form the arrangement is as in the case of the effluve, but instead of a brush discharge there is a metal contact, my own vaginal one, Apostoli's intra-uterine, or my special rectal electrode, as the case may be, the dose varying from 100 to 250 ma., and the time about 15 minutes. The break from which I obtain most satisfaction is the Gaiffe mercury jet interrupter.

The "static induced current" is what is known as the Morton current. When speaking of this current in the treatment of constipation I have given sufficient details of my method. The duration of the application in this case also is 15 minutes. The Leyden jars I use are the pint size, and in order to keep down the rate of the muscular contractions to about 80 or 90 per minute it may be necessary, if the machine is in good working order, to permit only about half the number of plates to revolve.

---

[1] For further details regarding ionic treatment see my contribution on "Ionic Medication in Obstinate Cases of Pelvic Disease in Women," THE LANCET, July 10th, 1909.

An Address

ON

SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF CERTAIN NERVOUS AFFECTIONS.

Delivered before the Hampstead Medical Society on Dec. 16th, 1909,

BY JAMES TAYLOR, M.D. EDIN.,
F.R.C.P. LOND.,

PHYSICIAN TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN SQUARE, AND TO THE ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS).

GENTLEMEN,—My subject is, as you know, "Some Points in the Diagnosis and Treatment of Certain Common Nervous Affections," and my object is to try to convey to you a few hints on points which have impressed themselves on me, occasionally through the painful process of having made mistakes. I shall in the first place deal with

SOME DIFFICULTIES IN DIAGNOSIS.

We are probably all more or less familiar with the ordinary case of so-called *locomotor ataxy*. Such a name is unfortunate, because, while it is in a certain way descriptive of the commonest variety of tabes dorsalis, there is a tendency to use it as synonymous with the latter term, and such a use of it is apt to be very misleading. The ordinary case of tabes dorsalis, with ataxy, lightning pains, absent knee-jerks, Argyll Robertson pupils, &c., is, as I have said, familiar to all of us, but we are scarcely likely to think of such a picture if a man comes to us complaining of difficulty in seeing. If, however, you find that such a patient has pale and atrophic optic discs it is well to examine further into his nervous symptoms. You may find, for example, that he suffers from what he calls rheumatic pains in his legs, that such pains are not about the joints but between the joints, and are of a sharp, sudden, darting character—really lightning pains—and that also he may have no knee-jerks. No ataxy may be present, yet the case is undoubtedly one of tabes dorsalis, and it will be seen at once how absurd it is to speak of such a case as one of locomotor ataxy. And it should be remembered that in these cases of tabes dorsalis with optic atrophy it is exceedingly rare to find ataxy present. Sometimes, however, in such a case the diagnosis may not be so easy. It is, for example, not uncommon to find the knee-jerk present. It may remain present and active, even after the optic atrophy has developed so as to lead to blindness. In such a case I am always a little apprehensive that general paralysis of the insane may develop, but this, as Dr. F. W. Mott has pointed out, is probably the same disease as tabes dorsalis, in regard to etiology. Or the knee-jerk may gradually become more and more difficult to elicit until it can be described as absent. Also the Argyll Robertson pupil may be present and the knee-jerk also present, or in another case, of these signs only optic atrophy may be present, and yet the case turn out to be truly one of tabes.

Such cases disclose a very different clinical picture from the ordinary one of tabes, yet a recognition of all the points I have mentioned is necessary if a correct diagnosis is to be arrived at.

Nor is one likely to think of tabes dorsalis when confronted with a patient the subject of severe vomiting, uncontrollable except by morphia. Severe gastric or abdominal disease is most likely to occur to one as the cause of such disorder, and I have now known three cases in which a severe abdominal operation has been carried out (in one patient two operations were performed) for such attacks of vomiting. Yet if it had been recognised that such attacks were paroxysmal, that in all three cases the patient had Argyll Robertson pupils and loss of knee-jerk, the true nature of the cases—viz., tabes, with gastric crises—would doubtless have been recognised and the patients saved from unnecessary and ineffectual mutilation. For in this class of tabetics also it must be recognised that ataxy is the exception rather than the rule, and that therefore the absence of any difficulty in walking is not significant.[1]

I must also refer to the possibility of mistaking the true nature of the occasional difficulty in breathing, attacks of laryngeal crises, which occur in tabes. In such cases the occurrence of crises without other symptoms or obvious signs of tabes dorsalis is unusual, so the error is not easily made. Ataxy is usually present, and not infrequently affection of some other cranial nerves besides those supplying the larynx.

I have been impressed with a number of cases of vertigo I have seen in the last few years, and one gratifying thing about them has been the improvement that has been effected by treatment. The great majority have been cases of *auditory or labyrinthine vertigo*, and whenever a case of vertigo is seen it is well to inquire into the state of the hearing. As a rule, if the vertigo is auditory in origin there is some impairment of hearing on one side and also some tinnitus, and it is always well to make an internal examination of the ear, because wax alone in the meatus may give rise to vertigo. Attacks of auditory vertigo come on suddenly. They are apt to be provoked by changes in position, especially if these are sudden, and they not infrequently occur in bed at times when the patient quickly turns from one side to the other. Vomiting or nausea—rarely headache—may be associated with the vertigo; nystagmus is frequently present during an attack, but consciousness I have never known actually lost, although it is said to be so at times.

I have had at least two very instructive experiences in connexion with auditory vertigo. A good many years ago a man came to the out-patient room at Queen-square. He entered the room in a very hesitating way, and I noticed as he walked that he leaned a little forward, that he moved himself *en bloc*, and that his face was fixed and expressionless. Perhaps it would be more correct to say that his face was fixed in an expression of slight anxiety. I diagnosed the case at once as one of paralysis agitans, and as he had come in for admission I sent him at once to the ward. You can imagine my feeling of humiliation on finding him on more detailed examination to be a case of auditory vertigo—the most severe I have ever seen. The explanation of his gait and attitude lay in the fact that he had had numerous falls, and he had noticed that he always fell if he turned quickly, so he was particularly careful to move quietly and deliberately and to move himself in one piece. In this way his gait and attitude and the fixity of facial expression gave him the appearance of one of those cases, which are not so very uncommon, of paralysis agitans without tremor. So that my error in the first instance was perhaps not so unpardonable as it might seem. That patient made a most excellent recovery under treatment to which I shall refer later, and I saw him a few months ago, more than ten years after that attack, and there had been no recurrence.

Another instructive experience occurred to me in connexion with auditory vertigo. Headache is not common with this disorder, as I have said, and I always now hesitate to diagnose it if headache is a prominent symptom. In this particular case the patient was a woman who had deafness in one ear. She complained of great giddiness; it was worse when she changed her position and was usually provoked by this. She had headache, apparently paroxysmal and rather severe, occasional nausea, but no optic neuritis. I concluded that the case was one of auditory vertigo, but the sequel showed that I was wrong, for a few weeks later well-marked optic neuritis had developed, with some left-sided weakness affecting arm and leg, and the case was really one of tumour on the left side of the cerebellum.

I should like to say a few words about "*faints.*" These are probably of two varieties—viz., cardiac faints and nervous faints, and the latter class really shades almost imperceptibly into epilepsy. One is familiar with the patient who "faints at the sight of blood." Such faints occur in patients who have vivid imaginations and possibly a weak cardiac action. When, however, they occur repeatedly, and perhaps without such a definitely exciting cause as the sight of blood, they have to be regarded with suspicion, and it may be asserted that repeated faints, especially in children with no obvious heart disease, are epileptic in nature. Inquiry in such cases will probably elicit some confirmatory fact. Thus there may be a history of blood on the pillow in the morning of disarrangement of bedclothes, or, most significant of all, a history of bed-wetting or of wetting of clothes without the patient's knowledge. But it must not be supposed that these faints necessarily lead up to major epilepsy. In many patients the minor attacks are the only ones experienced, and although these may recur frequently, major attacks may not take place at all. In some instances major attacks do come on, but in such cases they are usually of infrequent occurrence and are much more amenable to the influence of drugs than the slighter ones.

---

[1] Since this was written I have seen a patient, referred to me by one of my colleagues at Moorfields, who has had three abdominal operations at a London hospital. He is a tabetic with now commencing optic atrophy, and the abdominal operations were undertaken for the relief of conditions apparently gastric crises.

I should now like to refer to a condition about which a good deal has been written in recent years—the condition known as *myasthenia gravis*. It is a very important condition because it is a real disease of very grave character, and yet it has on numerous occasions been regarded as hysterical. A series of cases very instructive from this point of view will be found at the end of the late Dr. C. E. Beevor's article on bulbar paralysis in Allbutt's "System of Medicine." In this disease the first sign of weakness usually shows itself in the levatores palpebrarum, giving rise to ptosis. Sometimes this is equal on the two sides, occasionally it is more distinct on one than on the other. The muscles effecting ocular movement also usually suffer and the effort made by the frontales to counteract the ptosis discloses weakness in those muscles also. Difficulty in mastication is also of frequent occurrence and sometimes the patient may support the lower jaw with one or other hand to assist in this process. The muscles about the mouth are also weak and there may be difficulty in whistling or in blowing out a candle. Weakness of the palate is frequent, giving rise to a nasal voice and difficulty in articulating, and one very striking thing in reference to articulation and phonation is that when the patient begins to speak he may articulate fairly well and the voice may be of good strength, but as he goes on speaking he becomes first inarticulate and finally voiceless. The respiratory muscles may also suffer and grave dyspnœa on slight exertion may be easily induced. The limbs also are weak and the patient may be unable to walk or even to feed himself. Not infrequently a woman with this disease will volunteer the information that she had great difficulty in doing her hair, finally becoming quite unable to raise the arms sufficiently. Patients are usually able to do more in the morning than later in the day. In the evening the condition may become one of profound prostration. Cold increases the weakness very distinctly and so does anxiety or any emotional disturbance, even if pleasurable. The electrical reactions of the affected muscles are quite distinctive, having the so-called myasthenic reaction, the muscle at first reacting readily to a faradic current, the reaction gradually diminishing to the same strength of stimulus until it is quite absent. At times also it is possible to demonstrate a similar condition of ready exhaustibility in the muscle subserving the knee-jerk, for in a limb in which this is readily evoked at first it is possible in some cases of myasthenia, by repeatedly eliciting the phenomenon, to reach finally a stage at which it can no longer be evoked.

I have dwelt at some length on the signs and symptoms of this curious disease because I think it is so important to recognise it. It has seemed to me that there are two varieties of the malady, one in which the progress is rapidly downwards until the end comes, perhaps only a few months after the first symptom; the other, much more chronic, in which the progress is slow and intermittent; and although the patient never gets well he only very slowly becomes worse. In both varieties the diagnosis is by no means easy unless one is familiar with the clinical picture, and yet it is most important to recognise it, otherwise there is the danger lest it may be regarded as "functional" or "hysterical," and I can imagine no more tragic mistake than that.

And now I wish to say a few words about

THE TREATMENT OF CERTAIN NERVOUS DISORDERS.

With reference to *tabes dorsalis*, I have already alluded to the treatment of that form in which the gastric crises are the chief feature. In the vast majority of cases of this nature one is forced to the use of morphia. It is best to try the administration by the mouth first of all, and if this is inefficacious it must be given hypodermically, only it should never be entrusted to the patient himself. I have known one case in which the patient became an habitual taker of morphia, yet in this case the patient has overcome the habit and now, after 15 years, he is fairly well. And in most cases it must be remembered that the gastric crisis usually ceases spontaneously after a certain time. After the initial severity of the vomiting is past I have found salicylate of bismuth most useful, and in one case this alone without morphia was efficacious in completely arresting the crisis.

In reference to ordinary cases of tabes, those with lightning pains and ataxy, the pains are usually controlled by phenazone, acetanilide, phenacetin, or pyramidon. I have never had to prescribe morphia for these pains and I hope I shall never see a case severe enough to justify this. Such cases probably do occur however. The ataxy is much helped by the exercises devised by Dr. Fraenkel—exercises adapted to overcome the hypotonia and the incoördination which are so often associated.[2] If the ataxy affects the upper limbs—the hands are specially liable to suffer in this form—a solitaire board or a cribbage board is very useful as a means of practising the hands in fine movements and in improving the power of carrying out these quickly and accurately. The use of the exercises in the treatment of the ataxy of tabes constitutes, in my opinion, a very great advance in the therapeutics of this disease, and I have now seen a good many patients who had been reduced to a bath-chair existence once more able to get about with a fair degree of ease and comfort.

In referring to *auditory vertigo* I have already remarked on the very gratifying results which follow treatment in such cases. The mode of treatment which I always use in these cases is by means of a combination of iodide of potassium, bromide of potassium or other bromide, and hydrobromic acid—a combination to which I was introduced by my honoured chief Dr. Hughlings Jackson. The only cases which I have found not amenable to this treatment have been those in which the vertigo is associated with marked vascular degeneration, and in those cases I always regard it as a very ominous symptom.

With reference to the treatment of *myasthenia* it must be symptomatic, for we are still in the dark as to its etiology. It is very probable that it depends upon some poison, possibly secreted in connexion with the lymphoid tissue which has been found in the spleen and elsewhere in fatal cases of the disease. The use of strychnia hypodermically is frequently beneficial, but not curative, and I have seen one case in which the continuous use of thyroid extract has been followed by great improvement and apparently an arrest in the progress of the disease.

I should like, in conclusion, to say a little of the treatment of *epilepsy*. It is a subject in which I have been interested for now a good many years, and I hope I am not over-sanguine when I say that I am much more hopeful now of being able to influence the course of epilepsy by drugs than I was 10 or 12 years ago. The main thing about treatment is continuity. I doubt if it is ever possible to say with strict accuracy that a case of epilepsy is cured. But in many cases you can bring it about that the patient remains free from fits during the time that he continues to use certain drugs.

Bromide is, of course, the most useful drug we have for this disease. For a case of epilepsy in which the fits occur indifferently at any time during the 24 hours it is best to give it in good doses—15 to 25 grains—three times daily. In many cases, however, the fit occurs only during sleep, and in these it is best to give a fairly large dose of bromide—30 to 40 grains—at bedtime. And in such cases it is well to combine with it a small dose of digitalis. In all cases in which I give bromide I also give nux vomica, and I am sure that if this rule is followed one will not see the condition of profound depression with which one was familiar when bromide of potassium alone was used. And the nux vomica does not interfere with the effect of the bromide in controlling the fits. There is a class of case in which the fits tend to occur nearly always in the early morning—very often while the patient is dressing—and these are most efficaciously treated by advising the patient to have an early cup of tea or milk, followed by a dose of a bromide mixture, half an hour before getting out of bed. This simple expedient is often quite successful in getting rid of troublesome fits. Should it happen only to move them to some other part of the 24 hours they must be pursued to their new time and similarly treated.

In many cases, especially long-standing cases which have been treated with bromides, the addition of borax is sometimes followed by most gratifying results. Belladonna also is useful, sometimes alone, sometimes with bromide, especially in cases of *petit mal*, which unfortunately are in my experience less tractable than the severer fits.

---

[2] Models of various apparatus calculated to promote coördination were shown.

Of bromide salts, I nearly always use either the sodium or strontium salt—practically never the potassium. It has no advantages over the others, it is much more depressing, and certainly tends to the production of acne. Bromide of strontium has the great advantage that it has little tendency —in most patients none—to produce acne. Bromide of zinc can only be used in small doses, as it is emetic in larger ones, and seems to be useful in some cases of *petit mal.*

ANKYLOSTOMIASIS A MENACE TO THE INDUSTRIAL LIFE OF NON-TROPICAL COUNTRIES.[1]

BY SIR THOMAS OLIVER, M.D. GLASG., F.R.C.P. LOND.,
PHYSICIAN, ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.

I FEEL that I owe an apology to the Fellows and Members of the Society of Tropical Medicine and Hygiene for attempting to introduce a discussion on ankylostomiasis, a disease with which many of you who have lived in the colonies and elsewhere must be much more familiar than I am. The subject is complicated by problems biological, social, industrial, and international. Any difficulty I might have had as to the lines upon which I should open this discussion has been greatly lightened for me by a suggestion from Dr. W. Carnegie Brown that, quite apart from the tropical aspect of the subject, there is still the equally large question of how the spread of ankylostomiasis may affect the industrial life of non-tropical countries. The subject is one which specially appeals to Great Britain, not only on account of her important mining industries at home, but owing to her many dependencies in all parts of the globe, for the health and lives of the inhabitants of which she has made herself more or less responsible.

My experience of the malady has been gained by visits to the coalfields of Hungary, Westphalia, and France, also to the Dolcoath Mine in Cornwall, while my knowledge of the life-history and behaviour of the larvæ is largely the outcome of experiments carried out in the Newcastle College of Medicine by Mr. Herman Belger of the Armstrong College and myself.

To the splendid work of Looss on the anatomy and habits of the parasite there is little to add, although data are still wanting in regard to the extra-corporeal stage of the life-history of the parasite, to which Mr. A. T. Ozzard of British Guiana has drawn attention.

The ankylostoma is no new offender. Whether it existed as far back as 1550 B.C. and was the Heltu worm mentioned in the Ebers papyrus we have no means of knowing. Although it is quite probable that the malady existed in the mining districts of France and Belgium 100 years ago medical interest in the worm dates from 1838, when Dubini discovered it in the intestine of a peasant woman who died in the hospital at Milan, and when shortly afterwards Prunen and Bilharz also found it in Egypt. The discovery of the parasite in Brazil by Wucherer led to the suggestion that ankylostomiasis was a tropical affection, but the discovery of the disease in epidemic form among the miners at the St. Gothard Tunnel showed that the malady was not confined to tropical countries. It was the identification of the worm by Perroncito in the Italian miners in the Alpine tunnels which gave that impetus to the study of ankylostomiasis which has not yet died down.

If there is one circumstance specially characteristic of the disease as it affects miners it is the secrecy and unexpectedness with which the disease is hatched underground and the suddenness with which it leaps into existence. Close study of events as they occurred in the mining centres of Hungary, Silesia, Westphalia, France, and Belgium shows that the malady travelled from coal-field to coal-field carried by infected workmen; that a considerable time is required for a mine to become infected; that once it is infected the workmen gradually become the subjects of ill-health attended by a form of anæmia, the cause of which is the presence of a parasite in large numbers in the intestinal canal which acts either by directly abstracting blood, or, what is more probable, by the injection into its host of a toxin or toxins at the site of the puncture made in the mucous membrane by its hooklets.

Cornwall is the only mining district in which the disease has existed in England to any extent. How long the Cornish miners have been infected we do not know. For the latest information upon ankylostomiasis in Cornwall we are indebted to Dr. A. E. Boycott and Dr. J. S. Haldane,[2] who show that while, as the result of the use of the sanitary pail underground, the medicinal treatment of affected miners, and the education of the men generally, the mine has been considerably cleared of the parasite and become less infective, yet since ova are still present in the fæces of youths working underground at Dolcoath it is evident that larvæ are widely spread throughout the mine. Those who have had experience of the length of time required for the purification of a mine will corroborate all that Dr. Boycott and Dr. Haldane have said. Recent inquiry into the health conditions of coal mines in England has shown them to be free from infection. Although there was no evidence of the disease anywhere, the Mines Commission (1909) very cautiously expressed the opinion that the absence of signs of ankylostomiasis is no proof that the disease might not be lurking somewhere in the mines of Great Britain. Our climatic conditions do not perhaps favour the spread of the disease on the surface of the soil, but the underground conditions in our coal mines are probably more favourable than colliery managers are inclined to believe.

Whether we are dealing with infected mines or men, the tendency to purification and recovery is interrupted from time to time by reinfections. Notwithstanding this, improvement goes steadily on all the same. Taking the number of cases occurring in the Ruhr Basin, Westphalia, there were in 1904 13,861 persons suffering from ankylostomiasis. In 1905[3] the numbers of sick fell to 4024, or 18 per 1000 miners; in 1906 to 3123, or 11 per 1000; in 1907 to 1851, or 6 per 1000; and in 1908 the numbers fell to 1171, or 3 per 1000. In Germany, in addition to the use of sanitary pails underground, an examination is made of the fæces of miners applying for work for the first time. If the purification of an infected mine is a necessity, the non-employment of infected miners is equally a necessity in view of what has been said of reinfection. It is not known how ankylostomiasis made its way to the French and Belgian coalfields, but in the neighbourhood of Liège the worm was first found in 1884 by Firket in the intestine of a miner who was supposed to have brought the parasite from the brick-fields beyond the Rhine. Before the establishment of a dispensary at Liège 26 per cent. of the miners were suffering from ankylostomiasis. Towards the end of 1906 the proportion fell to 5·3 per cent., and at the end of December, 1907, it was only 4 per cent., this satisfactory result being largely due to the vigilance and treatment carried out by Dr. Malvoz and Dr. Lambinet.

We do not exactly know the length of time larvæ will live in a mine, nor do we know for certain the kind of food they require. Looss found that encapsuled larvæ lived in water for 300 days. Tenholt states that encapsuled larvæ may live for months, probably years, and that the life of the mature worm may be five or six years. This opinion, as regards the adult ankylostoma, is based upon experience of men who had given up mining and had run no risk of fresh infection. In my own laboratory larvæ are still alive after having been 11 months in the same water, and to which nothing has been added. The duration of larval life is of importance, for the closure of infected parts of mines has not been followed by the satisfactory results that were expected. When at the Erin mine in Westphalia, Dr. Perner told me that he had found larvæ in the water and sludge in a disused part of the mine 10 months after it had been closed. The presence of larvæ in the wood props of a mine rather suggests that from wood they obtain nourishment. Although we have made many attempts by feeding and otherwise, we have never had any evidence of the transformation of larvæ into the adult worm outside the body, but as the larvæ have their sexual character stamped upon them, and there are often other nematodes present along with ankylostoma larvæ in the intestine, some of which develop ova under observation, and which when shed give rise to larval forms of minute size, most of which die prematurely, it is an open question whether ankylostoma larvæ may not under certain circumstances possess the same powers as these other nematodes and thus perpetuate themselves in the mines. Like Dr. R. T. Leiper, I am of the opinion that we should be careful in coming to a conclusion in regard to the heterogenesis of ankylostoma duodenale. Notwithstanding what I have said of the longevity of larvæ, myriads of larvæ must be constantly dying in a mine, so that in process of time, if there is no infection, that particular mine should become clear, but if it is possible for the larval forms to perpetuate themselves the purification of a mine becomes a tedious and expensive undertaking.

---

[1] A paper read before the Society of Tropical Medicine and Hygiene on Jan. 21st, 1910.

[2] Journal of Hygiene, November, 1909.

[3] The Mining Journal, Sept. 11th, 1909.

Occasionally ankylostoma larvæ are extremely tenacious of life. Encystment affords them a considerable degree of protection. The sheath enables larvæ to bear a great amount of desiccation and yet recovery can take place. Belger and I found larvæ alive in the drop or two of water in the small well of a microscope glass slide four months after the cover-glass had been laid on and the edges of the cover-glass smeared with vaseline. One larva had even wriggled out into the vaseline, carrying with it the merest trace of moisture, and yet in this medium, cut off from air and renewal of moisture, it lived for nearly five months. From the rapidity with which young larvæ grow it would seem as if they absorbed a considerable amount of nutriment at first. Nematode forms closely identical with ankylostoma larvæ throve well for a few days upon films of carrot cut very finely by the microtome. Ankylostoma larvæ placed in distilled water died usually in from two to four days, one or two survived to the fifth day, but none lived beyond the ninth day.

Coal dust is believed by many persons to possess antiseptic powers, but it possesses no germicidal properties so far as ankylostomiasis is concerned. When mixed with fæces it prevents them becoming too acid, probably by the absorption of gases, and therefore provides a more suitable medium for the development of ova. Larvæ live in the water by the side of the main ways in a coal mine, but several ova which were placed in water obtained from washed coal at a pit bank after reaching the stage of advanced segmentation proceeded no further, while only a few reached the larval stage of development and died shortly afterwards. This was at the ordinary temperature of the laboratory in the months of August and September. Ova placed in the coal water and kept at a slightly elevated temperature became transformed into larvæ and were alive and active two to three weeks afterwards. On analysing the water from washed coal it was found to contain 0·1 per cent. of chloride of sodium and a trace of magnesium chloride. The circumstance which acted adversely upon the ova could not therefore have been the trace of chloride of sodium in the water but the lower temperature. A temperature of from 25° to 35° C. (i.e., 78·5° to 95° F.) is best for the hatching of ova. Lambinet found that, while ova still came to maturity below 22° C. (71° F.), their numbers were few and that many of them perished.

There is a feeling that the lower temperatures of the British coal mines confer, if not absolute security, certainly considerable protection against the invasion of the ankylostoma. The temperature in Hungarian mines is much higher than that in English coal mines—a circumstance to which is attributed the thin, spare condition of the miners compared with our own pitmen at home, who work in cooler seams, who are better fed, and who have therefore greater resistance to disease. Admitting all this, I have frequently thought that our colliery owners are resting their security upon rather an unreliable basis. Temperatures of the rock in mines are not constant. In this circumstance lie possibilities for harm so far as ankylostomiasis and mine infection are concerned. Belger and myself placed ankylostoma larvæ in an outhouse in the open air at 11 A.M. on Dec. 24th, 1908, and at 9.30 A.M. on Dec. 26th they were alive. At first they seemed to be benumbed, but a few minutes after being in a moderately heated room they became active and very mobile. Other larvæ were exposed in a vessel placed on the ground to a freezing temperature from 10.30 A.M. on Dec. 26th to 10.15 A.M. on Dec. 28th—i.e., 48 hours. There was a hard frost at the time and a sprinkling of snow. A watch-glass containing the larvæ was placed so as to swim in a larger basin containing water. Subsequently the water in the larger basin was found frozen, but that in which the larvæ had been placed was not frozen. On examining those larvæ microscopically there were at first no signs of life, but by degrees movement returned. A few hours after these larvæ had regained their normal mobility the glass containing them was placed in the snow on the frozen ground over night on Dec. 28th. At 10 A.M. on Dec. 29th the water was found frozen and the frosted larvæ were found imbedded in ice. The ice was gently thawed by placing the glass in the laboratory at a short distance from the electric lamp used for microscopic purposes. The larvæ gradually revived; that evening they were again bedded out on the frosty ground; the glass was buried in the snow for six days, after which the larvæ at first immobile were gradually brought to life once more.

In thawing frosted larvæ it was found that the addition of a few drops of water from the tap hastened the return of their mobility, in consequence probably of the tap water containing air which the other had lost during freezing. We also found that ova which had been frozen and gradually thawed developed later on under a suitable temperature, but their chitinous capsule seemed to be extremely brittle. Ova could be kept for weeks at a low temperature without undergoing segmentation, but on raising the temperature development always proceeded as if nothing had been done to them.

Fæces containing ova were allowed to become hardened by frost. Gently thawed and kept at a temperature of 20° C. (68° F.) on Dec. 28th, living larvæ were found on Jan. 3rd—i.e., on the sixth day, while the ova present in a portion of frozen fæces kept in the laboratory and exposed to the ordinary temperature of the room when the weather was frosty outside did not undergo segmentation until Jan. 4th. Cold retards segmentation of ova. I have kept ova in a cold cellar for 10 weeks at a temperature of 15° to 17° C. (59° to 62·3° F.) without segmentation taking place. When some of these ova were placed under moderate temperatures they segmented and gave rise to larvæ which were much stronger and more vigorous than larvæ hatched immediately from ova at a slightly exalted temperature. The development of ova is known to have taken place at comparatively low temperatures. According to one writer[4] larvæ developed at 48° F.

In our experiments with low temperatures we always found that if ova whose developmental energies had been stayed by cold were exposed for an hour or more to sunlight segmentation rapidly appeared and proceeded. Sunlight, in England at least, is not harmful as some writers maintain, but helpful to the development of ankylostomiasis. By its influence and by heat are to be explained the presence of the disease in the tropics and also the 40 cases of men and girls reported by Herr Woltherıng, medical officer, Herzogenbusch, Holland, at the Cologne Congress as occurring in the brick-fields of Holland in persons who had never worked in mines. Similar cases, too, were reported by Goldman as occurring at Brennburg, Hungary, in persons who had not worked in mines, while those alluded to by Looss as met with in Italy and Servia showed that infection had also occurred through the soil.

As regards ankylostoma there are seasonal influences at work. Its larvæ are no exception to the rule that in cold weather and during winter all larval life and activity are lessened.

Of the three requirements necessary for the development of ankylostoma—viz., oxygen, a favourable temperature, and moisture—it would be interesting to know which one or more of these is the most important. For the development of ova, moisture and oxygen are necessary, but even ova may retain latent powers for a considerable time under conditions depriving them of both moisture and oxygen, and yet when they are supplied with these development takes place. Larvæ, as I have stated, can live through extremely low temperatures for a considerable length of time, and in this circumstance lies a menace to British coal mining.

Admitting that ankylostomiasis is a tropical disease, there is a non-tropical aspect of the question which cannot be ignored. Looss has stated that ankylostomiasis has occurred in Italy and Servia in people who have not worked in mines;

---

[4] The American Mining Journal, Nov. 21st, 1908.

it caused great havoc among the miners in the St. Gothard Tunnel at a height of 3780 feet. Goldman found it in miners as well as in the non-mining classes at Brennburg in Hungary, and Herr Woltheriug in brickfield workers in Holland. Are the climatic conditions in England, considered from the point of view of the results which Belger and I have obtained in our experiments with low temperatures, so hostile to the ankylostoma as to prevent the transformation of ova into larvæ? It would hardly seem so. If larvæ can live in low temperatures for the length of time we have indicated, they become a possible source of infection. For four months during 1905 we exposed fæcal matter containing ankylostoma ova in the grounds of the College of Medicine during June, July, August, and September in the open air to rain and sunshine under the most varied conditions, and we obtained crops of encysted larvæ for over three months. Direct sunlight had no deterrent influence in preventing the development of ova nor in destroying the larvæ. All that is required is moist soil rather than water.

Is there an inter-changeability of the ankylostoma of different animals—e.g., that of man and the dog? Looss by his accidental infection of himself with human ankylostoma larvæ demonstrated the paths by which the larvæ when they have penetrated the skin reach the intestine. Nothing has added to our knowledge of the malady so much as this illustration of how infection is brought about.

Tenholt of Bochum made several attempts to infect dogs with human ankylostoma, but he failed. He therefore takes the view that each race of animal has its own specific ankylostoma. In my own experiments I did not succeed in infecting rabbits, guinea-pigs, or mice with canine ankylostoma, but in the case of a cat there were evidences of a mixed parasitic infection of the exact nature of which I am not absolutely certain owing to the animal having strayed. Calmette and Breton also failed to infect rats, mice, guinea-pigs, and rabbits; they, like Tenholt, are of the opinion that there is something special or peculiar to the human ankylostoma.

It is probably only well developed and thoroughly encapsuled larvæ which are capable of penetrating the skin. In thus effecting an entry through the skin the capsule, according to Looss, is lost.

As regards the larger question of the transmissibility of human ankylostomiasis to the dog, I am at liberty to reproduce Looss's opinion and experience conveyed to me from Cairo in a letter dated Dec. 26th, 1909. Before he had found out the method of infecting man or animal through the skin he had given human larvæ to dogs by the mouth. In from 30 to 35 days he found in young dogs that a small number of the larvæ had developed into adult worms. Looss thus satisfied himself by experiments that the human ankylostoma can develop to sexual maturity in the dog provided the animal is young enough. When the human larvæ were passed through the skin of dogs several of the animals died, partly as the result of the wandering propensities of the larvæ. In the intestines of other of the dogs adult worms were found; the ova shed by these worms became transformed into larvæ, which on being given to dogs gave rise to mature worms in no way differing from the normal adult. Lambinet states in a private letter to my co-worker, Belger, that he found in a dog infected by human larvæ through the skin that the worm stage was reached in the intestine.

In this inter-transmissibility of ankylostomiasis lies another possibility of danger. When the transmissibility of human into canine ankylostoma takes place there arises the interesting question as to the precise nature of the worm in the dog's intestine. Is it a purely canine or is it a degraded human form? If the former, then the change is entirely due to the surroundings. Would the larvæ developed from the ova of such a worm be equally infective to man and dog, irrespective of age?

Looss found that there was very little difference in point of time between infection induced through the skin and by the mouth as regards the date at which ova appeared in the fæces of the victim; 30 to 35 days after infection ova were found in the fæces. Tenholt reports that in the case of one of his assistants who was infected through the skin, ova were not found in the fæces until the forty-seventh day and then they were very few, four to six only being found. After this date the ova increased rapidly, a circumstance which suggested that the larvæ kept arriving in the intestine one by one, and not all of them at or about the same time. Tenholt's explanation may possibly be correct. It is interesting when we compare it with what frequently occurs in other infected subjects. Samples of fæces may be examined day after day and no ova found, when all at once and without explanation scores of ova are found. I can offer no explanation as to why the shedding of ova should be interrupted for days.

The channels by which ankylostoma larvæ enter the body are the skin and alimentary canal. Knowing that encapsulated larvæ can withstand a considerable amount of desiccation it is possible that mingled with dry soil they might be blown about in dust and reach the nares or fall upon food or drinking water. I have no experience of infection through dust. The skin is *par excellence* the channel of infection. The "itch" of coolies, the eruption in the legs of the brickmakers on the banks of the Rhine, the "*kratze*" of the miners in Germany, the "*gourmes*" of French coal-miners, and the "bunches" on the limbs of the Cornish tin-miners are probably all of them the result of irritation of the skin either by ankylostoma or other larvæ. In some of the German coal-mines a few of the men work bare-footed, others in very worn and holed boots. On examining the worn boots of some of the miners Tenholt found ankylostoma larvæ, while none were discovered in the mud in which the men had been working. Old and torn boots, therefore, seem to harbour larvæ, a circumstance which at first sight seems of some importance in framing regulations for coal-mines. Boots should be waterproof and free from holes, but when we know the propensity which ankylostoma larvæ have for climbing wherever there is moisture, although sound boots would retard infection they would not altogether prevent it. Whether smearing boots daily with some germicidal grease would prevent infection is a point worthy of consideration, always bearing in mind that the larvæ do not in every instance penetrate the skin of the legs but may enter by the arms in consequence of the men handling infected materials. It is possible that if miners wore boots which were disinfected daily by dry heat and then subsequently smeared with a germicidal paste this operation would tend to prevent personal infection and might help to clear the mine of larvæ.

Carriers versus sufferers.—Just as there is no tuberculosis without the presence of the tubercle bacillus, so there is no ankylostomiasis without the presence of worms in the intestine, as indicated by the discharge of ova in the fæces; and yet a man or dog may have several worms in his intestine without symptoms or signs of suffering, and without ova being thrown off in each stool. We do not speak of persons who have recovered from diphtheria, and in whose mouth and fauces months afterwards the specific bacillus is found, as still suffering from diphtheria; nor do we say of a patient who has had enteric fever years ago, and in whose urine Eberth's bacilli are found, that he is the subject of typhoid fever; and yet these persons are a menace to the health of other people. They are carriers of disease, although not themselves suffering from it. What, then, constitutes the disease so far as the individual is concerned? Clearly something more than the living organism. A miner who has suffered severely from ankylostomiasis and recovered may be again and again reinfected without suffering to any extent, if at all. Although such a coal-miner has become more or less immune, he is none the less a danger to his fellow workmen.

The presence of other parasites in the intestine is believed to diminish the resistance of the individual to ankylostomiasis. It is astonishing how very frequently coal-miners harbour in their alimentary canal parasites other than the ankylostoma. For the purpose of detecting ankylostomiasis in a miner, apart from an examination of the blood, it is not enough to make microscopical examinations of only one stool. It may not be until four or five stools passed on successive days have been examined that ankylostoma ova are found therein. Miners in Germany who are applying for work at a colliery for the first time are familiar with the fact that no ova may be found in the stools for three or four days after taking a sharp purgative. The absence of ova is by some observers attributed to an inhibition of the sexual function of the female worm, by others to a destruction of the ova in the catarrhal secretion of the irritated mucous membrane of the bowel.

In many instances the disease tends to spontaneous cure. The toxins which affect the host are probably secreted by the whole worm and not by the anterior half of the body or the cephalic glands as some have maintained.

Allusion has been made to the possible reproduction of ankylostoma outside the body of a host. Pathologists who have carefully studied the larvæ of the miner's worm know how difficult it sometimes is to differentiate between ankylostoma larvæ and other forms of nematode life, especially the anguillula intestinalis. Anguillula intestinalis throws off ova which develop into larvæ in the alimentary canal of its host. The presence of larvæ in freshly passed fæces is therefore strongly presumptive evidence of an anguillula origin. To such larvæ the name anguillula stercoralis is given. These larvæ when outside the body develop ova which become transformed often inside the larvæ themselves into filiform active nematodes smaller than the parent forms from which they have sprung, and when they are swallowed and reach the intestinal canal of a host they again start the chain of anguillula intestinalis.

Anatomically there is the closest resemblance between the larvæ of anguillula intestinalis and those of ankylostoma, so that even competent observers sometimes find it difficult to differentiate between them. Leichtenstern lays down the following as points of difference: the vestibulum oris in the anguillula is only one-third of the length of that of the ankylostoma larvæ; the part behind the stomach and named the bulbus is widened out into an ampulla; in the female anguillula larva the genitalia are more developed, and altogether look larger than in ankylostoma.

Cultivated soils swarm with active nematode forms of life, at first sight not unlike ankylostoma larvæ. To these nematodes which live outside a host and are therefore non-parasitic, the term "rhabdites" is applied. So far as is known, rhabdites do not enter or infect living bodies. I have given myriads of these nematodes to animals by the mouth and by subcutaneous injection, but so far I have never induced infection, nor on opening the alimentary canal of a recipient have I found traces of worms or living larvæ on the intestinal mucous membrane. Leichtenstern has administered rhabdites to man without any effects following. In the fæces all he found was a few disintegrated larvæ.

There is a stage in the life of ankylostoma larvæ to which by some writers the term "rhabditiform" is applied. This stage is reached shortly after the larva has emerged from the shell, when it grows rapidly owing to its voracious appetite. Shortly afterwards it undergoes distinct changes in structure, particularly as regards the œsophageal portion of the alimentary canal. When this has taken place the larva becomes encapsuled, and as it lives largely upon material stored up within its own body it can live in water for months apparently without requiring nourishment *ab extra*. It is to this inherent power of self-sustenance that ankylostoma larvæ owe their capability of long endurance under conditions trying to most other forms of life.

Treatment is preventive and curative. I shall not deal with the treatment of infected individuals, for I am concerned rather with the measures to be adopted to prevent the infection of mines and soils, also to purify mines and ground which have already become infected. In the recommendation of means for such a purpose there are several points to be borne in mind: 1. The means used must be inexpensive. 2. They must not be hurtful to the health of the workpeople nor harmful to the skin, nor must they pollute the air the workpeople breathe. 3. They must not injure the coal for combustible purposes nor poison adjacent streams or rivers; they must not injure the boots the workmen wear nor the plant in the mine. 4. The measures employed must not make coal-mining a more dangerous occupation than it is. 5. It would be of considerable advantage if the means employed could be also destructive to the germs of other diseases, especially in view of the fact to which Dr. F. Shufflebotham has drawn attention—viz., that he found 2·8 per 1000 coal-miners suffering from typhoid fever, as against 0·7 per 1000 of the non-collier classes. 6. The measures adopted must be easy of application. The object aimed at is the destruction of the ankylostoma ova and of the young larvæ before they become encysted.

Since it is in the badly ventilated and moist mines that the ankylostoma finds the most suitable conditions for its development, free ventilation is one of the first and most important things to be attended to. In March of last year, while examining microscopically the soil round the kennel of a dog suffering from ankylostomiasis, it was found to be barren of all nematode life, while the soil taken from the garden close at hand was rich in rhabditiform nematodes. The soil round the kennel was composed largely of cinders taken from the engine-room. The liquid obtained from water in which cinders had been soaked gave an alkaline reaction and was rich in chlorides and sulphates. This liquid was hostile both to ankylostoma ova and larvæ. Healthy, vigorous larvæ placed in this liquid died within 24 hours. Fæces rich in ankylostoma ova were placed in a Petri dish containing water and cinders. The dish was kept at a temperature of 25° C. (77° F.), but no development took place.

I should be glad to know whether other workers in the field of ankylostomiasis have had similar experience in regard to the deterrent influence of cinders to which I have drawn attention, for if ashes have proved as successful with them as with us, we have in cinder ash a cheap and effective means of combating the disease in coal mines by filling up the grooves at the side of the main ways in which ankylostoma larvæ are frequently found, by sprinkling ashes round the sanitary pails underground and at all places either under or above ground to which workpeople resort when their bowels are about to be moved. Fresh cinders are less hostile to embryonic and larval life than those which have been kept for some time. Old cinders are richer in sulphates and poorer in chlorides. Basic slag in water kills larvæ in about 10 minutes. It is also destructive to such other organisms in water as paramecia.

It should be our aim to check the development of ova. The effects of sea salt upon ankylostoma ova and larvæ are well known. Some larvæ which we placed in sea water died just within the hour; others lived only 37 minutes. Ordinary lime water had no effect upon larvæ except to make them more active. Creasote killed larvæ very quickly, and this circumstance suggests the advisability of colliery managers using creasoted wood props in those parts of infected coal mines where the air is moist and there is no danger of fire. Since miners handling creasoted props have suffered from dermatitis only one end, the lower, need be dipped in creasote to the extent of one foot or two in length. Larvæ placed in a 4 per cent. solution of sodium acetate on Oct. 2nd at the ordinary atmospheric temperature were living and active on Oct. 20th, but 1 per cent. solution of the same salt prevented the development of ova. Larvæ placed in a 4 per cent. solution of magnesium acetate on Oct. 5th were alive on Oct. 20th. Lead acetate killed larvæ slowly. 1 per cent. solution of ferrous sulphate prevented the development of ova. Their capsule became much thickened. Larvæ in the rhabditic stage lived only ten minutes, whilst encapsulated larvæ died in iron sulphate solution within 24 hours. Copper sulphate is not so effective as the iron salt. Silver nitrate solution 1 per cent. killed larvæ in half a minute, 0·1 per cent. solution in 1–2 minutes, 0·05 per cent. solution killed larvæ in five minutes, and 0·025 per cent. killed very slowly, staining particularly the mouth, tail, and anus. 1 per cent. solutions of caustic soda and potash killed quickly.

Belger tried the effects of 41 different substances upon ankylostoma ova and larvæ. The opinion he came to was that manganates and permanganates are decidedly effective as destroyers of larvæ, but they would be of no use in a mine, since apart from their cost much of their oxidising power would be destroyed before reaching the larvæ. The acetates of magnesia and soda exercise a destructive influence upon ova, but very little upon larvæ, especially if encysted. The one salt which has given the most satisfactory results all round is iron sulphate. This can be bought for £8 per ton. It is estimated that 1 per cent. solution of this quantity would cover a length of 60 miles, more than a yard wide and one-third of an inch deep. Experience in Germany and elsewhere has shown how difficult and expensive it is to purify an infected mine.

The remarks which I have made in regard to the purification of mines are to be regarded only as suggestive. It would be impossible to make use of several of the chemical products which I have mentioned, but this remark does not apply to a solution of iron sulphate, which is well worth trying on a large scale.

Newcastle-upon-Tyne.

A SIMPLE AND EFFICIENT OPERATION FOR HÆMORRHOIDS.[1]

BY NORMAN PORRITT, M.R.C.S. ENG., L.R.C.P. LOND.,
CONSULTING SURGEON, HUDDERSFIELD INFIRMARY.

LATE on the night of August 19th, 1909, I was called to see a patient, an unmarried woman, aged 32 years, who was said to be in great pain due to piles. She said that with the exception of one attack of influenza she had always had good health, but five years ago she began to suffer from piles. For a long time there had been constipation, with anal pain after defæcation. On examining the anus no fissure was seen, but when the patient strained a large mass of piles encircling the bowel was extruded. Obviously, the time had gone by for palliative treatment, and the case would tax the efficiency of any operative measures. I had to determine what operation was best suited to the case.

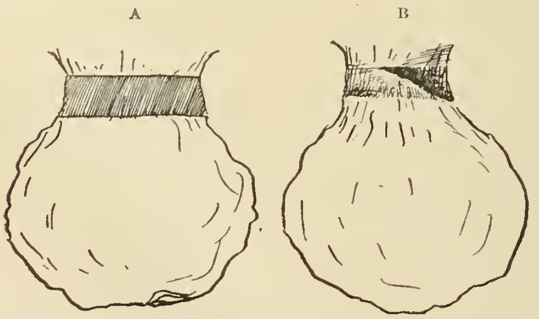
After practical experience of the ligature, clamp and cautery, and excision, I had returned to the use of the ligature. But satisfactory as the ultimate results of the ligature usually are, the method, like the other procedures I have named, is not without drawbacks. The after-pain is, as a rule, severe, retention of urine is frequent, and the return to convalescence slow. The clamp and cautery, efficient enough, are sometimes too efficient, and I have seen troublesome post-operative contraction follow their use. Nor is the operation with clamp and cautery so bloodless as one would expect, for the application of the clamp to each successive mass of hæmorrhoids tends to open the eschars of those already cauterised. Mr. F. Swinford Edwards, senior surgeon to St. Mark's Hospital for Fistula and Other Diseases of the Rectum, says of the clamp and cautery :—

> Several deaths from hæmorrhage are known to have occurred after this operation, and if I lived at a distance from a patient on whom I had just operated, I should feel much happier if I knew his piles were in the grip of a strong ligature than I should be had I to trust to an "eschar," which might be burst open by an unlooked-for escape of flatus or motion.[3]

Excision, or Whitehead's operation, in my hands has always been attended with smart hæmorrhage, and, moreover, takes much more time than either the ligature or clamp and cautery. Then the healing of the flaps of mucous membrane drawn over the raw surface is not always by first intention, and so-called stitch abscess is not unknown. Mr. Swinford Edwards[2] says :—

> [It is also followed occasionally by] the loss of rectal sense and consequently the inability to appreciate the usual call to stool. Again, the difficulty of retaining flatus, of which some patients complain, is sufficiently distressing to make them regret that they had undergone the operation.

For my own part I must confess that in my hands the ultimate results of excision have been good ; the time it takes and the free bleeding are my objections to it.



Broad flat band of crushed tissue (A) on first removal of clamp. The lax, limp, crushed portion (B) rotated upon itself to form a pedicle before the second crushing.

Whilst turning over in my mind the operation best suited to my patient it occurred to me that it might be possible to remove hæmorrhoids as one removes the appendix, by crushing the base and burying the stump. On operating I found that by slightly modifying the plan adopted in the case of the appendix this could be accomplished quickly and easily.

The sphincter having been stretched one of the hæmorrhoidal masses was seized with vulsellum forceps and pulled well out of the anus. It was encircled with a loose purse-string suture of fine Pagenstecher's thread. Above the purse-string suture entered the healthy rectal mucous membrane beyond the hæmorrhoids ; below it took up that just within the anus ; whilst at each side it was inserted far enough apart to allow the blades of the crushing instrument to grasp the base or pedicle of the pile seized. It is essential that the pile be pulled well down. As soon as the purse-string suture is placed the base of the pile is crushed. I used a Corner's appendicectomy clamp, but a pair of hæmostatic forceps with blades long enough to overlap the base of the pile would be suitable. When the clamp is released a broad flat layer of crushed tissue connects the pile with the rectum. The pedicle is now folded once upon itself by giving a half-turn to the pile, the clamp is re-applied, and the crushing is repeated. When the clamp is removed something like a pedicle has been made, but another half-turn, followed by another crushing, leaves nothing more than a fine pedicle of crushed tissue. This is tied with a fine ligature beyond the clamp, and the clamp is finally removed. The pile is then snipped away through the crushed pedicle. The stump of crushed tissue with the ligature upon it is then buried by drawing tight and tying the purse-string suture already inserted. Other portions of the mass are isolated and removed in the same way. In my patient five separate portions were dealt with, their pedicles crushed, and the stumps buried.

The after progress of the case was satisfactory. I saw the patient on the evening of the operation. She had passed urine easily and had not had as much pain as she had before the operation. On the day after the operation there were some circular swelling and pouting of the anal mucous membrane, with the appearance of an ecchymosis around it. On the next day the swelling was less. She had no pain until the desire to have a motion caused pain, not at the anus, but in the abdomen. The administration and action of half an ounce of castor oil on the third day after the operation made her comfortable. She did not complain of the pain of the first defæcation and immediately after the action of the castor oil she went to sleep for several hours. On the day after the operation the temperature was normal, but 99·6° F. on the third day after, and that was the highest point reached. After the relief to the bowels the progress of the case was uneventful and the patient got up and came downstairs on the thirteenth day after the operation. I saw her a few days ago, when she said she was in perfect health, though suffering from constipation, and she had no anal or rectal defect of any kind.

The operation is simple, easily and quickly performed, needs no special instruments, and is almost bloodless. The points of the vulsellum and the needle carrying the purse-string suture cause the only hæmorrhage there is. If the piles were seized with a pair of blunt, flat-bladed forceps much of this slight hæmorrhage might be avoided. It was not followed by retention of urine, and I do not remember so little after-pain in any other case on which I have operated by other methods. On my visit after the operation I left with the patient a draught containing 20 minims of liquor morphiæ, to be taken if pain came on, although the patient said she was quite comfortable. Notwithstanding these directions, she took the draught, although she had no pain. That was the only anodyne she had, and it might have been omitted.

Then in the nearly five months since it was done the operation has not been followed by after contraction, a condition which may be almost worse than that for which the operation is done. In order to insert each separate purse-string suture and get with it a good grip laterally a bridge of tissue must necessarily be left between each group of hæmorrhoids dealt with. It is impossible to pick up and include the whole circle of rectal mucous membrane within the sutures. The little bridge left between each hæmorrhoid is a safeguard against destroying too much of the involved structures, and whilst not militating against the efficiency and success of the operation makes the occurrence of after contraction improbable.

Huddersfield.

---

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Jan. 21st, 1910.

[2] Burghard's System of Operative Surgery, vol. ii., p. 679.

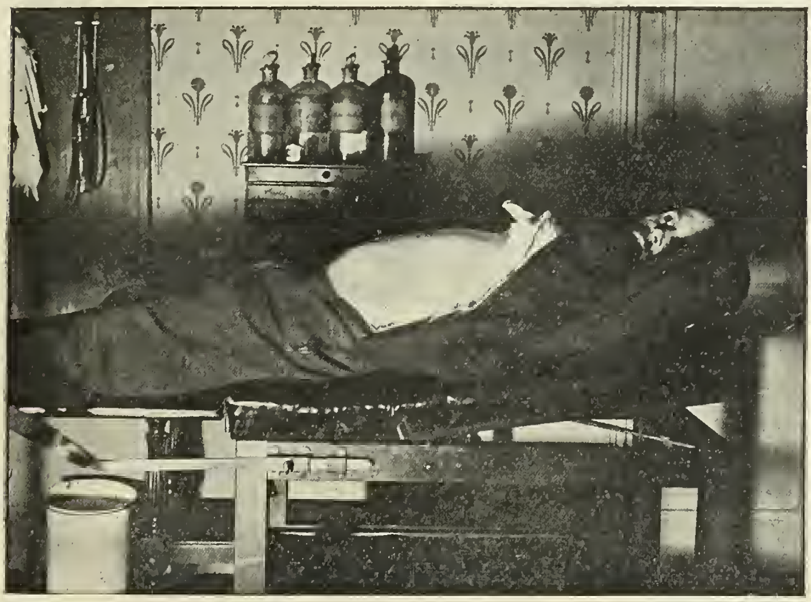
[3] Op. cit., p. 684.

THE EXTERNAL EXAMINATION OF THE ALIMENTARY CANAL.

BY LÉON MAC-AULIFFE, M.D. PARIS,
CHIEF EDITOR OF "LA CLINIQUE," PARIS.

FOR some few years a small number of French doctors have been employing a new method in examining the digestive tube. The value of this method has been tried and proved; it was initiated by Sigaud of Lyons, one of the most illustrious clinical observers of France. Its chief merit is that it can be mastered by every practitioner after some weeks of study, and that no special instruments are required for applying it. Moreover, this method enables him to study the action of the food stimulus upon the alimentary canal throughout its duration, to follow, as it were, step by step the response to this stimulus, and thus to ascertain the mode of digestion peculiar to each patient and, what is more, as we shall shortly see, to state the precise point in his evolution which the individual has reached at the moment of examination.

FIG. 1.



Abdomen the shape of which is not modified in the recumbent or upright position. Man, aged 29 years. Lying down.

The external examination of the alimentary canal comprises three clinical processes which must be used each in its turn (nor can any one of them take the place of the others)—viz., inspection, palpation, and percussion of the abdomen.

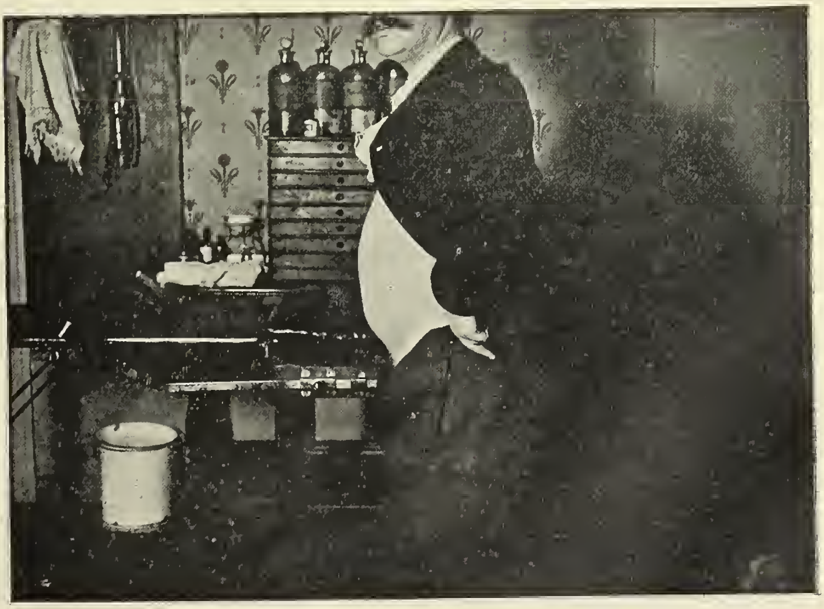
Inspection of the Abdomen.

The patient must be examined, first in a recumbent, then in an upright position. In an individual in complete equilibrium the shape of the abdomen should not change in either position. (See Figs. 1 and 2.) The tone of the muscular coats of the hollow digestive organs (stomach, intestines, and colon) is good; the organs are supported by vigorous and consequently unrelaxed ligaments or "mesos" (mesentery, mesocolon).[1] Owing to these circumstances the abdomen undergoes no morphological change in either the upright or the recumbent position.

With chronic weakening of the functions due to age, independently of that weakening which is due in the last resort to acute and subacute illnesses, abdominal tension diminishes and the abdomen will change its shape according to the different positions assumed by the individual. In the recumbent position the abdomen gives way first in a line with the flanks (batrachian abdomen). At this period of the individual's evolution the abdomen in the upright position begins to protrude "wallet fashion" (*en besace*), that is to say, it protrudes in the hypogastric region.

As this evolution progresses a depression, due to the collapse of the walls of the stomach, appears in the gastric region when the patient is in a recumbent position. The abdomen, as a whole, assumes the shape of a horizontal S (*s couchée*), with epigastric depression and hypogastric protrusion (see Fig. 3). Later on the depression extends to the entire colon as well. The result is a slight para-umbilical

FIG. 2.



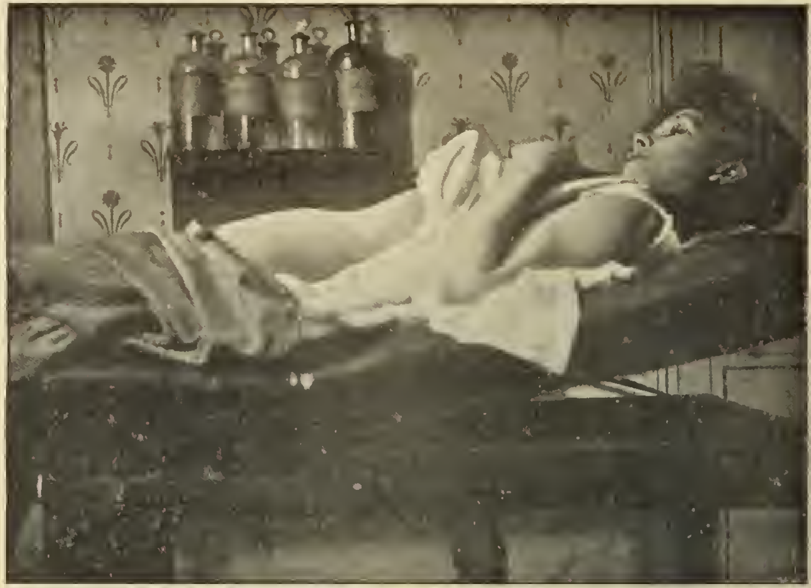
Same subject standing up.

---

[1] The chief cause of morphological variations of the abdomen is variation of abdominal tension. It is impossible to state the precise nature of these variations in this article. The question of abdominal tension is an extremely complex one and has only just been finally elucidated by the works of—Hörmann: Die intraabdominellen Drückverhältnisse, Archiv für Gynaekologie, Berlin, 1905, vol. lxxv., No. 3. Anthoine: Inspection de l'Abdomen d'après la Méthode de Sigaud, de Lyon, Thèse, Paris, 1905. L. Mac-Auliffe et A. Riva, de Milan: Pression et Tension Abdominales, 1er Congrès International d'Hygiène Alimentaire. L. Nachmann: Tension Abdominale et Palper de l'Abdomen d'après la Méthode de Sigaud, de Lyon, Thèse, Paris, 1908. L. Mac-Auliffe: La Tension Abdominale et les Ptoses (Revue Générale), La Clinique, Nov. 6th, 1908.

protrusion and all round a depression, producing what is known as the "island-shaped abdomen" (*ventre en îlot*) (see Fig. 4). Finally, like the other hollow digestive organs, the small intestine collapses in its turn; in the recumbent position the abdomen collapses completely and is surrounded by bony projections. This is called the "hollow abdomen" (*ventre creux*), and the lasts tage is known as the "boat-shaped" abdomen (*ventre en bateau*).

FIG. 3.



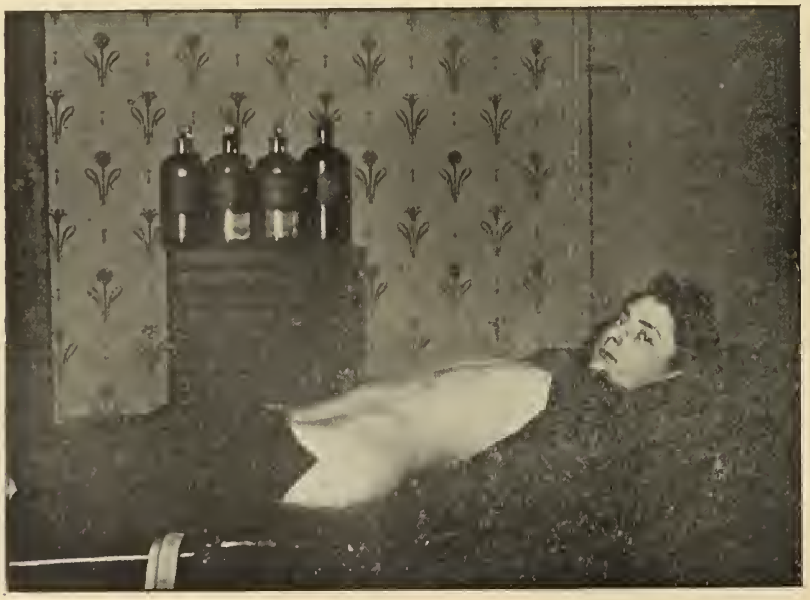
Abdomen shaped like a horizontal "S" (*s couché*). Woman, aged 29 years. Remarkable and permanent epigastric depression. Protrusion in the region of the small intestine and of the colon.

As soon as the shape of the abdomen changes—that is to say, as soon as the batrachian abdomen makes its appearance—the abdomen protrudes more and more in the hypogastric region when in an upright position. The viscera, which are imperfectly supported by their ligaments and "mesos," obey the laws of gravitation and drop towards the true pelvis and the hypogastric region. When there has been considerable dilatation of the alimentary canal before prolapsus has taken place the abdomen may assume a monstrous appearance when in the upright position (see Fig. 5).

To sum up, inspection of the abdomen should be of use not only in the diagnosis of meteorism, tumours, &c., it should also serve to indicate what the degree of abdominal tension has been during the patient's evolution.

Needless to say, the abdominal forms just described are not unchangeable: a hollow abdomen, for instance, can recover its tension and shape under the influence of suitable hygienic conditions; yet the forms to which attention has been drawn are sufficiently fixed and lasting to afford the doctor precise data. For the rest, we cannot attempt to describe in this short article every morphological variety of abdomen.[2]

FIG. 4.



"Island-shaped" abdomen. Child, aged 12½ years. The coats of the stomach and of the colon have collapsed; only the region of the small intestine protrudes.

Palpation of the Abdomen.

This must be both superficial and deep.

Superficial palpation must be carried out in the following way: "The doctor is to place the whole surface of both hands quite flat upon either side of the median line and to move them gently downwards, pressing lightly with each hand alternately; he will then repeat this process down the sides, always keeping his hands symmetrically placed so as to feel symmetrical regions." Thanks to this superficial palpation the clinical observer will find out the facts concerning two most important elements of abdominal tension—renitency and elasticity. "Renitency is measured by the amount of resistance offered to attempts at compression; elasticity is the property by virtue of which the shape that has been altered for the moment recovers itself more or less instantaneously (Léon Vincent)."

Other things being equal, elasticity is the special characteristic of children's abdomens, renitency of adult abdomens when these possess resistance. Elasticity and renitency diminish with age, and at the last stage of life, renitency having disappeared, the abdomen is always *soft*.

Again, superficial palpation enables the doctor to make out what is known as the "closed abdomen" (*ventre fermé*), in which all the muscular coats of the abdomen are contracted and resist deep palpation. In the course of apyretic gastric trouble superficial palpation mostly shows that abdominal renitency and elasticity have decreased simultaneously. This form was named by Sigaud the "doughy abdomen" (*ventre pâteux*). Finally, during the period preceding death and during the death-struggle itself, as well as in serious disorders of the digestion, the abdomen is called "œdematous," the coils of intestine that have been pressed down remain flattened for a moment, the impress of the hand forms a hollow that persists; it is what Sigaud called the "bowl of the œdema" (*le godet de l'œdème*).

---

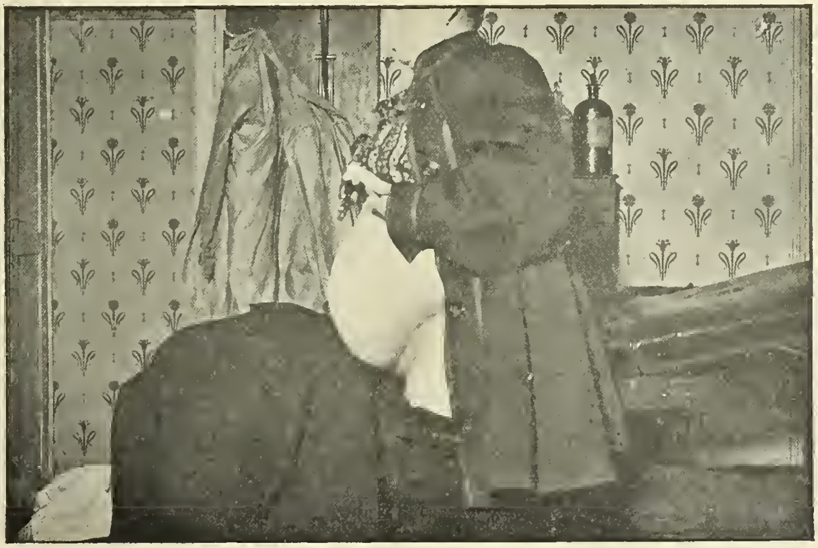
[2] See Sigaud: Traité Clinique de la Digestion, vols. i. and ii., Paris, Doin, 1900 and 1908. A. Chaillou and L. Mac-Auliffe: Précis d'Exploration Externe du Tube Digestif d'après la Méthode de Sigaud, Paris, Maloine, 1903.

Deep palpation supplies even more valuable data; with some practice and method it is very easily applied in the great majority of cases. We may remark that like every other process of external examination it must be applied in the upright and recumbent positions successively.

In the latter position the ascending colon must be investigated first, then the transverse colon,[3] then the descending colon. To examine the last the doctor presses the external edge of the rectus backwards and inwards with his left hand; with the ball of the first and middle fingers of his right hand he finds the descending colon by feeling from the external edge of the rectus to the left anterior superior iliac spine. It is impossible to point out in this place what the different shapes of the descending colon and of the whole colon signify. As Léon Vincent, one of Sigaud's collaborators, has said, in the living body the descending and transverse colon generally contrast with the cæcum as regards their size; sometimes they present the appearance of a soft cord, sometimes of a cord merely taut or ligneous, or, again, at other times, extremely hard and small in calibre. This last is the "pipe-stem colon" (*en tuyau de pipe*).

Palpation of the cæcum must take place in the following way according to Sigaud: "In order to make out the configuration of this viscus properly, we advise grasping the right flank with the left hand, thumb in front, fingers behind, whilst the right hand feels for the cæcum which, finding no outlet towards the hypochondrium, is pent up in the iliac fossa." Sometimes the cæcum is more or less swollen, tense, and gurgling; sometimes it is like a rounded pudding, either crackling or of a more or less doughy consistency and balling beneath the hand; sometimes it is like a cord, occasionally soft, occasionally more or less hard, but the hardness is clearly recognisable, and there is no crackling. All these symptoms have a precise signification, and characterise a given moment in the digestive process and in the evolution of the individual. The same remark applies to the signs detected through palpation of the epigastric region, by which we may perceive: (1) the sound of succussion got by shaking the trunk of the patient sideways, both hands grasping the base of the thorax (and not as one would feel inclined to do the flank); (2) the sensation of a stream which strikes against the hand applied to the epigastric region when one shakes the thorax; finally (but in rather rare cases) the sensation of *swaying* brought about by the complete displacement of the stomach when one shakes the patient grasping the base of the thorax. The liver and the kidneys must be examined in the recumbent, then in the upright, position by processes requiring some skill, hence we do not describe them here.[4]

FIG. 5.



Apron-shaped abdomen (*ventre en tablier*). Woman, aged 40 years, who has had only one accouchement. The viscera cause the hypogastric region to protrude enormously.

Deep palpation must end with that trial of abdominal tension which Germans as well as French have called since the works of Glénard, "*épreuve de la sangle*" (literally, trial of the girth band).

To sum up, deep palpation (which must be continued for a long time at one sitting in order to permit of the doctor registering variations of form in the digestive organs) should reveal not only the existence or non-existence of tumours, &c., it should also enable him to judge of the digestive organs, of their state of tension upon the mesenteries, of their consistency, mobility, and change of position during digestion.

Moreover, it enables him to assert that the patient examined has reached such and such a stage of his evolution. Indeed, when the alimentary canal is in perfect condition deep palpation is quite impossible. When illness supervenes (and by "illness" we mean chronic affection of the organs) the organs become more or less accessible and assume certain definite shapes according to the degree of resistance possessed by the patient. Thus in extremely cachectic and in aged dyspeptic patients, the colon becomes uniform through atrophy, and, for the same reason, the cæcum is no longer distinguishable from the descending colon, but is like a thin, loose cord, atonic on its mesentery.

Percussion of the Abdomen.

The interpretation of the sounds perceived in percussion of the abdomen is supplied by two physical laws: (1) the intensity of the sound is in inverse ratio to the thickness of the membrane; and (2) the pitch of the sound is in direct ratio to the thickness and in inverse ratio to the superficies of the vibrating membranes.[5]

Thus, percussion of the abdomen must be used not only to mark out the limits of the hollow or solid organs, it should also allow one to ascertain (and this is the most important point of Sigaud's discovery) the manner in which the muscular walls of the organs are fulfilling their functions. For instance, when the stomach contracts, in accordance with the acoustic laws mentioned above, the sound obtained by percussion rises in pitch proportionally as the organ contracts, and diminishes at the same time proportionally in intensity. When the stomach is distended the sound obtained by percussion is lower in pitch and greater in intensity.

But one may object that abdominal resonance varies ceaselessly from one minute to another and cannot therefore supply any reliable data. That is an error easily refuted by experience. True, in a certain number of cases one observes a perfect *mosaic* of sounds (to use Sigaud's expression) upon the whole abdominal surface. But this variability itself has a definite signification into the details of which we cannot here enter. Suffice it to say that in the great majority of cases abdominal resonance has a certain relative fixedness and that it offers certain characteristics, which Sigaud has analysed, for our study. Thus, a first form of abdominal resonance, the normal draughtboard (*damier normal*), as it is called in France, is characterised by a low-pitched, intense sound in the gastric region, a sound less low in pitch and less intense in the cæcal region (right iliac fossa), and a very high-pitched and very slight, sometimes even a dull, or still more, a deadened, sound in the region of the small intestine.

---

[3] The search for the transverse colon is rather a difficult matter. To find it one must rest both hands more or less lightly on either side of the median line and move them about along the axis of the body. The transverse colon is frequently to be found stretched between its two angles, right and left, and it nearly always describes a curve upwards.

[4] Besides, in practice, the ordinary processes of examining the liver and kidneys in a recumbent position are sufficient.

[5] Note that percussion of the abdomen does not as hitherto believed, or, at any rate, not to the extent believed, supply information concerning the state of fulness or emptiness of the viscera.

A second form of abdominal resonance is the inverted draughtboard (*damier inverse*), which, as its name shows, possesses characteristics the inverse of those pertaining to the first—viz., low-pitched and intense resonance of the small intestine, higher-pitched and more intense resonance in the cæcal region, still higher-pitched and still more intense resonance in the epigastric region. This form is often observed in nervous patients subject to facial neuralgia, in patients suffering from Parkinson's disease, &c.

From these few examples one may see how interesting the study of abdominal percussion is and how much it may yield for the doctor. We do not hesitate to declare that it gives information concerning the reactions brought about by the aliments so valuable that no other method, not even examination by X rays, can be compared with it. To conclude, the three processes of external examination of the alimentary canal must take their place beside the other methods of investigation now in use. They make diagnosis clearer and permit of precise prognosis at every stage during the course of disorders of the digestion.

Paris.

A CASE OF ENTERECTOMY UNDER SPINAL ANÆSTHESIA IN AN INFANT SEVEN MONTHS OLD; RECOVERY.

BY H. A. T. FAIRBANK, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON; ORTHOPÆDIC SURGEON, CHARING CROSS HOSPITAL;

AND

WILFRED VICKERS, M.B., C.M. SYDNEY,
LATE HOUSE SURGEON, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

WE venture to record the notes of this case for two reasons: first, because recovery after enterectomy in infants is such a rare occurrence; and, secondly, because we believe the success in this case to have been due in great measure to the method of anæsthesia adopted. It is generally admitted that an irreducible intussusception in an infant, whatever the surgeon may do, is almost invariably fatal. Fagge,[1] writing in the *Practitioner* in 1906, says: "I believe there is no recorded case of recovery after resection under one year." Since that date at least three successful cases of the kind have been reported. Clubbe[2] mentions the case of a child, aged 11 months, who had shown symptoms of obstruction for eight days. The intussusception was only reduced with considerable difficulty, and at the expense of so much damage to the bowel that resection had to be resorted to. End-to-end anastomosis with a double row of catgut sutures was performed, and the child made a good recovery. In 1907 Collinson[3] reported a successful enterectomy in a child aged 3 months. Operation was performed 17 hours after the onset of symptoms. An ileo-cæcal intussusception was found, and as it could not be completely reduced the unreduced portion was resected, the ends of the gut being united with the aid of a Mayo Robson bobbin. Recovery was rapid and complete, the bobbin being passed on the fifth day. A third case was recorded by Peterson[4] in 1908. The child, nearly 5 months old, was in a state of collapse at the time of operation, which was performed 30 hours after the onset of symptoms. The intussusception was in part gangrenous, so the cæcum, with four inches of the ileum and an inch of the colon, was resected. A Murphy button was used to bring the ends of the bowel together. The button was found in the rectum on the fourth day, the child making an excellent recovery. In addition to these cases successfully treated by resection, R. H. Parry[5] last year reported a case treated by lateral anastomosis. In the course of his remarks he mentions that there was no record of a recovery after resection for irreducible intussusception in a child under 12 years of age at the Royal Hospital for Sick Children, Glasgow. His patient was 6 months old and was operated upon about 39 hours after symptoms had commenced. As a portion of the intussusception could not be reduced it was left alone and a lateral anastomosis was performed. The child passed blood for about 24 hours, after which time no blood escaped and no slough was passed. By the time the stitches were removed all trace of the "tumour" had disappeared. The following are the details of our case.

A female child, aged 7 months, was admitted to the Hospital for Sick Children, Great Ormond-street, on August 20th, 1909, with typical symptoms of intussusception of about 48 hours' duration. Blood and mucus had been passed repeatedly, but vomiting had only occurred four times in the 24 hours immediately preceding admission. There had been no irregularity of the bowels before the sudden onset of pain. On admission the child looked very ill; the temperature was 100·8° F., the pulse was 164, and the respirations were 36. Under the lightest chloroform anæsthesia a mass was made out low down in the left iliac region, and the apex of an intussusception could just be reached per rectum.

The operation was performed under spinal anæsthesia, induced by Mr. H. Tyrrell Gray, the resident medical superintendent. An incision was made a little to the right of the mid-line, and the intussusception was reduced till the right iliac fossa was reached. The tumour was then brought out of the abdomen and a determined effort was made to complete the reduction. This was found to be impossible, the bowel splitting completely, so the unreduced portion was resected together with a little healthy bowel on either side. The invagination was of the ileo-cæcal variety, the cæcum, appendix, and portions of the colon and ileum, some seven inches in all, being excised. A Murphy button was used to unite the ends of the bowel, a single Lembert stitch being added at one weak spot. A second injection of stovaine was administered just before the anastomosis was done, as the effects of the first injection were wearing off and the child was showing signs of shock. The abdomen was closed with a single row of silkworm-gut sutures.

The after-treatment was as follows. Nothing whatever, not even a sip of water, was given by mouth for five days, after which sips of warm water were allowed; the breast was first taken exactly seven days after the operation. During the first week the child was sustained by rectal and subcutaneous injections of saline solution, with brandy added to the rectal injection for the first two days. Minute doses of morphia were given subcutaneously for four days. The button was passed 82 hours after operation. In spite of some subcutaneous suppuration due to infection from the bowel at the time of operation, the wound healed satisfactorily. The temperature chart showed the usual marked rise the day after operation, 104·8° being the highest point reached. The temperature reached 103·6° on the second day and then rapidly sank nearly to normal.

There are several points about the case which seem worthy of emphasis. We are convinced that had chloroform been administered instead of stovaine the child would have shared the fate of the vast majority of such cases. Although stovaine may produce some toxic effects, these are reduced to a minimum by using the solution recommended by Gray in his paper on Spinal Anæsthesia,[6] and they are certainly less than those produced by general anæsthetics in desperate abdominal cases. Furthermore, the method has the immense advantage of absolutely preventing shock from stimuli arising at the seat of operation, so long as the effects of the anæsthetic last. In the case here recorded the pulse improved immediately the stovaine took effect, and the improvement in the condition of the child was even more marked after the second injection, which was given when signs of shock made their appearance as the effects of the first injection began to wear off.

In his paper Gray has referred to the advantage gained by the absolute flaccidity of the abdominal wall in all abdominal operations performed under spinal anæsthesia. We have some grounds for stating that the method in cases of intussusception possesses a further special advantage in that it produces flaccidity of the bowel wall itself and so facilitates reduction. In two other cases of ileo-cæcal intussusception operated upon under spinal anæsthesia, as well as in that reported in detail here, reduction seemed unusually easy till the terminal œdematous portions were reached. In both of these cases, too, shock during and immediately after the operation was conspicuous by its absence, a fact which no doubt contributed towards the final recovery of both children. Both of the children were fed by the mouth while the abdominal wounds were being closed. On physiological grounds it would seem that loss of tone in the muscular coats of the bowel is quite a possible result of fairly high spinal anæsthesia, although the vagi escape the temporary paralysis. As to the method employed in uniting the bowel ends, we used a Murphy button rather in desperation, having in mind the almost inevitable result in such cases and believing that this method is slightly more rapid than uniting the bowel by a double row of continuous suture. It is somewhat remarkable that in two of the four successful cases under 12 months a Murphy button was used, this being the method adopted by Peterson in his case.

---

[1] Practitioner, December, 1906.

[2] The Diagnosis and Treatment of Intussusception, 1907.

[3] THE LANCET, Oct. 19th, 1907, p. 1087.

[4] Medical Record, New York, October, 1908, p. 438.

[5] Proceedings of the Royal Society of Medicine (Section for Study of Disease in Children), 1909, vol. ii., No. 9, p. 271.

[6] THE LANCET, Sept. 25th (p. 913), and Oct. 2nd (p. 991), 1909.

As to the after-treatment, it is surprising what little effect the withholding of all food has upon a child, provided plenty of saline solution is given subcutaneously or by the bowel. Our case had about three pints of saline a day, and this, assisted by the minute doses of morphia, seemed to satisfy her. She was the typical fat, healthy, "intussusception" baby, and a week's fasting had no very marked effect upon her appearance. These cases make great demands upon the skill and ceaseless attention of their nurses; our case was fortunate in obtaining an abundant supply of both. Without entering into a discussion of all the points arising from Parry's suggestion of performing a lateral anastomosis in preference to a resection, we must own to having grave doubts as to the wisdom of leaving a gangrenous, or possibly gangrenous, intussusception untouched in the abdomen. Although Parry's case and another which he mentions, and which was operated upon in a similar manner by one of his colleagues, were both successful, in neither does gangrene appear to have been present at the time of operation. In conclusion we would suggest that spinal anæsthesia has considerable bearing on the question as to the best means of dealing with these desperate cases, since it enables the surgeon to resort to the most radical measures with a comparative absence of shock, a condition of things impossible under anæsthesia induced by any other method.

A HOME OF REST AT LEICESTER FRITH.—In extension of a scheme which was started three years ago for the purpose of providing nursing accommodation for people of limited means an appeal is being made for £5000 in order properly to furnish and equip Leicester Frith as a home for chronic invalids and aged and infirm ladies and gentlemen. Donations and subscriptions may be paid to the honorary treasurer, Alderman Tollington, Moreley House, London-road, Leicester, or to the London, City, and Midland Bank, Limited, Leicester. A donation or collection of £100 will entitle the giver to a place on the general committee and to nominate a paying patient.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held on Jan. 21st, Dr. F. de Havilland Hall being in the chair. There were also present Mr. J. Brindley James, Dr. J. W. Hunt, Dr. W. Knowsley Sibley, Mr. J. F. Colyer, Dr. W. A. Dingle, Mr. Edward Bartlett, Mr. F. S. Edwards, and Dr. J. B. Ball. The accounts presented showed that the business of the society during the year 1909 had been very satisfactory. A large increase had been made in the amount of the invested reserves, and the number of new entrants had been above the average. The full accounts will be presented to the members at the annual general meeting to be held in May next. The committee examined over 40 special reports on the condition of the chronic cases. Little hope was found in any of them that the member would ever be able to resume professional work. The usual amount of sick pay drawn by these members is 104 guineas a year, and this is payable until age 65. Prospectuses and all further information on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

A CLINICAL APPARATUS FOR OBTAINING GRAPHIC RECORDS OF BLOOD PRESSURE.[1]

BY CHARLES SINGER, M.A., M.B. OXON., M.R.C.P. LOND.,
MEDICAL REGISTRAR TO THE RESEARCH DEPARTMENT OF THE CANCER HOSPITAL, BROMPTON, S.W.

THE ordinary needs of the clinician in measuring *systolic* blood pressure are sufficiently met by the various forms of mercurial sphygmomanometer in general use; the reading of the *diastolic* pressure on these instruments is often, however, difficult, and this defect is the more felt as the relationship between systolic and diastolic pressures has become a matter of increased scientific interest. Moreover, it is frequently desirable to obtain a *graphic record* of the pressure conditions, a record from which the personal factor has been as far as possible eliminated, and this is not yielded by the apparatus in question.

A number of instruments have, however, been devised, all of them of a complex type, to register these points in a graphic manner. An early attempt was that of Dr. Joseph Erlanger, whose instrument, though very delicate, by no means eliminates the personal factor, while its readings, even when taken with the greatest care, are sometimes equivocal.[2] In 1907 Dr. G. A. Gibson of Edinburgh described[3] an instrument that had been designed by him which was without some of the defects of Erlanger's and other previous apparatus. I have had considerable experience in the use of a model of this ingenious apparatus, which is both delicate and accurate and capable of giving objective records. A grave objection to it, however, is that it is exceedingly cumbrous and heavy, so much so that it is quite useless for ordinary bedside purposes. It is, moreover, difficult to adjust and liable to get out of order during transit.

After a number of experimental efforts I have succeeded in constructing an instrument on similar principles to Dr. Gibson's, but more adapted to clinical needs, without sacrifice of the accuracy of the older instrument.

The principle on which the apparatus acts is essentially that of the Hill and Riva-Rocci instrument which has obtained such vogue among clinicians. The upper arm of the subject on whom the observation is being made is compressed until the pulse in the wrist below ceases. Pressure is then gradually reduced until it is equal to, or slightly lower than, the force exercised by the heart during systole, so that the pulse can again be felt. The pressure which permits pulsation to first reappear is read on a mercurial manometer to which a scale is attached. As the pressure is still further lowered the mercury in the manometer shows marked oscillations, and the point at which these are of greatest amplitude is regarded by most writers as the diastolic pressure.

The manometer of the present instrument is of the uniform U-shaped type adopted by Dr. C. J. Martin[4] in his modification of the Riva-Rocci instrument, and its lumen is that recommended for the physiological kymograph by v. Kries[5]—viz., 4 millimetres in diameter. The mercury when at rest reaches to the zero of a vertical scale, 150 millimetres long, graduated so that each ½ millimetre length on the scale is marked as a whole millimetre (*vide* H in Fig. 1).

On the surface of the mercury in the open limb of the manometer there rests a light ivory float (A in Fig. 1). On this is fixed a very light but rigid upright which emerges from the top of the open limb, and is bent on itself at B and C, while attached at D is a light pen E, which writes in ink on a revolving cylinder G. The closed limb of the manometer H is connected by a thick rubber tube with an air-cushion which completely surrounds the whole girth of the upper arm, and which is held in place by an inelastic leather cover secured by straps. Within the armlet and air space above the closed limb of the manometer pressure can be raised and lowered at will by means of an indiarubber air-pump provided with a T-piece and liberating screw (vide Fig. 1).

---

[1] Demonstrated before the Physiological Society on Dec. 11th, 1909.

[2] The reader who is interested in the subject will find a full account of the apparatus in Janeway's "Clinical Study of Blood Pressure."

[3] G. A. Gibson: Quarterly Journal of Medicine, 1907, vol. i., p. 103; Proceedings of the Royal Society of Edinburgh, vol. xxviii., January, 1908.

[4] C. J. Martin: Brit. Med. Jour., April 22nd, 1905.

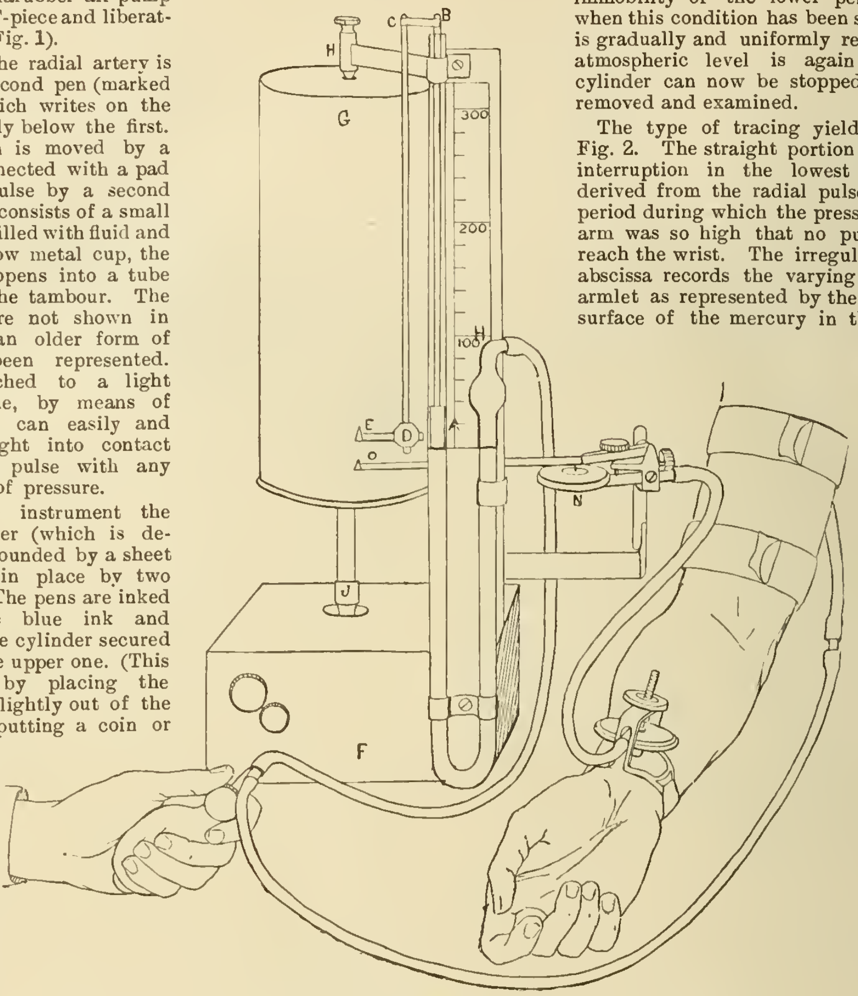
[5] v. Kries: Archiv für Anatomie und Physiologie, 1878.

Pulsation in the radial artery is recorded by a second pen (marked O in Fig. 1) which writes on the cylinder vertically below the first. The second pen is moved by a tambour, N, connected with a pad on the radial pulse by a second tube. This pad consists of a small indiarubber sac filled with fluid and fixed into a hollow metal cup, the apex of which opens into a tube connected with the tambour. The pad and cup are not shown in Fig. 1, where an older form of tambour has been represented. They are attached to a light adjustable frame, by means of which the pad can easily and rapidly be brought into contact with the radial pulse with any required degree of pressure.

In using the instrument the revolving cylinder (which is detachable) is surrounded by a sheet of paper held in place by two elastic bands. The pens are inked with methylene blue ink and apposition to the cylinder secured in the case of the upper one. (This can be done by placing the apparatus very slightly out of the vertical, as by putting a coin or other small object underneath the front of the clockwork base.)

A horizontal line, the abscissa of Fig. 2, is traced and the armlet is then put in place and secured. The pad is now fixed to the wrist over the radial artery in such a way as to give a maximum movement of the tambour. Lastly, the lower pen is adjusted so as to write on the cylinder and the latter is set revolving. Pressure is now raised within the armlet (the upper pen rising in indication) until the pulse at the wrist ceases to beat, as shown by the immobility of the lower pen; and finally, when this condition has been secured, pressure is gradually and uniformly released until the atmospheric level is again reached. The cylinder can now be stopped and the record removed and examined.

FIG. 1.



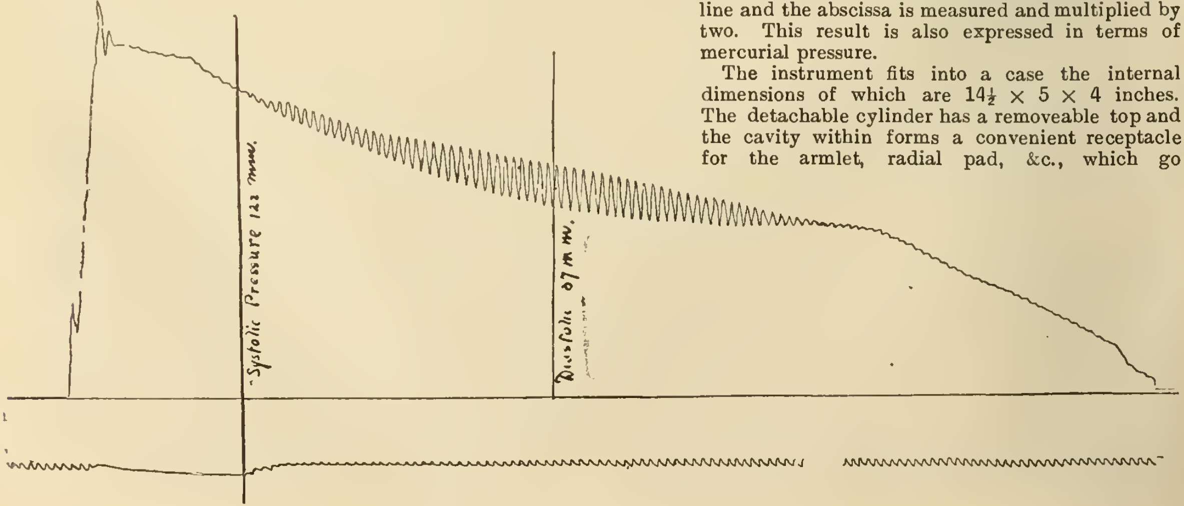
A new form of self-recording sphygmomanometer for clinical use. For lettering see text.

The type of tracing yielded is shown in Fig. 2. The straight portion which forms an interruption in the lowest line (which is derived from the radial pulse) represents the period during which the pressure on the upper arm was so high that no pulse was able to reach the wrist. The irregular line above the abscissa records the varying pressure in the armlet as represented by the height that the surface of the mercury in the open limb of the manometer is from time to time above its position of rest. The oscillations represented on this line correspond to the pulsation in the upper arm which increases and eventually again decreases as the pressure is gradually lowered. These excursions are at their maximum when the pressure on the arm is equal to the internal pressure on the brachial artery during diastole.

To read the systolic pressure from the record the point is taken at which pulsations first show themselves on the tracing derived from the radial artery after the pressure on the upper arm has been sufficiently released. The distance between the abscissa and the upper line, in the same ordinate as this point, multiplied by two, gives the mercurial pressure which the force of the heart during systole is just able to overcome—i.e., the systolic pressure. To obtain the diastolic pressure the vertical distance between the middle of the largest oscillation in the upper line and the abscissa is measured and multiplied by two. This result is also expressed in terms of mercurial pressure.

The instrument fits into a case the internal dimensions of which are 14½ × 5 × 4 inches. The detachable cylinder has a removeable top and the cavity within forms a convenient receptacle for the armlet, radial pad, &c., which go

FIG. 2.



Systolic pressure 121 mm· Diastolic pressure 87 mm.

with the apparatus. The arm to which the lower pen and tambour are attached slides inwards when not in use to further economise space. The instrument is light enough to be easily carried in the hand and is therefore adapted for clinical as well as laboratory use. It is made by Messrs. T. Hawksley and Son.

I have to thank my friend and teacher, Dr. Alexander Paine, for kind suggestions during the writing of these lines, and Sir Lauder Brunton and Dr. T. J. Horder and Dr. N. H. Alcock for advice and encouragement.

A CASE OF

FATAL CEREBRAL HÆMORRHAGE FOLLOWING GASTRO-JEJUNOSTOMY FOR PYLORIC OBSTRUCTION.

BY C. HAMILTON WHITEFORD, M.R.C.S. ENG., L.R.C.P. LOND.

THE occurrence of cerebral hæmorrhage as a complication of an ordinary operation, performed under general anæsthesia, although not unknown, is probably rare. The following case is reported in the hope that those readers of THE LANCET who have met with similar instances may be induced to record them in its columns. The patient, a robust-looking man, with a 12 months' history of gastric trouble, was seen on Dec. 15th, 1909, on account of incessant vomiting, which had commenced four days previously, of large quantities of brown, turbid, odourless, neutral fluid. He also suffered from severe and frequent cramps of the arms and legs. The temperature was 100·6° F. and the pulse 120. The urine, acid, of specific gravity 1026, contained a trace of albumin. Nothing abnormal was found in the heart. The arteries felt healthy, but the subcutaneous veins in the bend of the elbow were markedly thickened, possibly owing to the patient's arduous work, that of a smith. Under stomach lavage and saline solution per rectum the tetany disappeared, the temperature dropped to normal, and the pulse to 90, but everything taken by the mouth was still vomited. At no time was bile seen in the vomit.

On Dec. 18th, on opening the abdomen, I found a mass occupying the pylorus, with another mass, probably secondary to that in the pylorus, in the gastro-colic omentum. No other deposits were visible or palpable in either the liver or peritoneum. The ordinary no-loop posterior gastrojejunostomy was performed. Mechanical difficulties, which prevented hæmostasis by clamps, caused the operation to last two hours. The anæsthetic, with which there was no struggling or other difficulty, consisted of chloroform-ether mixture (C_1E_2) in a Rendle mask for the first 20 minutes, and for the remaining 100 minutes of ether with a small percentage of chloroform given from a box with an open air-inlet, from which the vapour was led by a tube to a facepiece with inspiratory and expiratory valves. No bag or re-breathing apparatus was at any time employed. Brisk corneal and pupillary reflexes persisted throughout. At the end of the operation the pulse was 130, strong and regular. After operation the patient was replaced in the Fowler position.

The next morning he was very drowsy, and on examination 22 hours after operation was found to have complete flaccid paralysis of the right face, arm, and leg. The tongue, when protruded, deviated strongly to the right. Attempts at speaking were made, but were unintelligible. The limbs on the left side were repeatedly making purposive movements, such as stroking the moustache with the fingers. The pulse was 120, and the temperature 99°. Of urine, 15 ounces in the morning and 10 ounces in the evening were withdrawn by catheter. Post-operative sickness was very slight, only a few ounces being vomited soon after operation. A stomach tube was passed and showed that the stomach contained only a small amount of altered blood. Liquids were freely taken and retained. The abdomen was flaccid and moved freely with respiration. The drowsiness deepened into coma and death occurred 36 hours after operation. No necropsy was made.

Plymouth.

⁎ This case has many points of interest and we therefore publish it with pleasure, but we hesitate to accept the diagnosis that the fatal issue was necessarily due to cerebral hæmorrhage. It appears to us that an embolus or thrombosis of the cerebral vessels might equally well explain the phenomena. Within recent years many cases have been recorded of cerebral thrombosis following abdominal operations, and we are inclined to place Mr. Hamilton Whiteford's case in this category.—ED. L.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Treatment of Tetanus.

A meeting of this section was held on Jan. 25th, Dr. J. MITCHELL BRUCE being in the chair.

Dr. LLEWELLYN PHILLIPS (Cairo) communicated a paper on the Treatment of Tetanus by the Intraspinal Injection of a Solution of Magnesium Sulphate. He considered that the case mortality of tetanus, even with the use of antitoxin, was still very high. The figures over a number of years gleaned from St. Bartholomew's Hospital reports gave a mortality of 56 per cent. The reports of the cases at the Government Hospital at Cairo showed a still higher mortality—viz., 75·8 per cent.—described by Dr. Phillips as an appalling figure. The main indications of treatment were to prevent further poisoning, to neutralise the poison already present, to nourish and conserve the strength of the patient, and to relieve symptoms. Antitoxin had proved somewhat disappointing as a curative measure, though as a prophylactic it was of great value. For the relief of symptoms, and so for the prevention of exhaustion, magnesium sulphate had been used in a 25 per cent. solution as an intraspinal injection. It had previously been shown that it was a spinal anæsthetic. Experiments made by Meltzer showed, further, that monkeys injected with tetanus toxin could be kept alive longer if they received injections of magnesium sulphate intraspinally. 21 cases had been published, chiefly in America, with a mortality of 42·8 per cent.—a very substantial improvement on former figures. To this Dr. Phillips added seven cases under his own treatment, of which four recovered, the same percentage mortality being observed. This substantial addition brought the number of cases up to 28, with 16 recoveries.

Mr. C. M. PAGE gave the details of a case of tetanus treated at St. Thomas's Hospital by intraspinal injection of a solution of magnesium sulphate in which death resulted, directly caused, in the opinion of Mr. Page, by the injection.

Dr. A. E. RUSSELL said that he had seen the spasms of strychnine poisoning controlled by spinal anæsthesia.

Dr. M. A. CASSIDY related a case of tetanus successfully treated at St. Thomas's Hospital by intra-thecal injection of anti-tetanic serum.

Mr. T. P. BEDDOES pointed out that in comparing the statistics on the subject it must be remembered that in London cases of tetanus came under treatment earlier than the cases did in Cairo.

PATHOLOGICAL SECTION.

Thyroid and Antithyroid Preparations.—Oöphorectomy.—The Pancreatic Reaction in the Urine.—Caseation of Adrenal Capsules.—Pigmentary Deposits in Liver and Pancreas.—Chylous Cyst.

A MEETING of this section was held on Jan. 18th, Dr. F. W. MOTT, the President, being in the chair.

Mr. WALTER EDMUNDS read a paper on the Action of Thyroid and Antithyroid Preparations. The experiments were made on rats with commercial thyroid and antithyroid preparations. Altogether 10 experiments were made and four controls used: the controls remained well throughout. The preparations used were commercial and were given by the mouth in doses of 10 grains three times a day mixed with food. One thyroid preparation produced on two rats death or severe illness in 20 days. Another thyroid preparation produced the same result on two other rats in 18 and 19 days. An antithyroid preparation produced no effect on two rats during the 39 days it was given. Thyroid and antithyroid preparations administered together, 10 grains of each three times a day, caused death or severe illness in 10, 18, 19, and 21 days. The symptoms produced were loss of flesh, roughness of coat, general weakness and illness, and death. Post mortem the chief change found was marked alterations in the suprarenal glands; they were obviously enlarged and dark in colour as compared with the glands in the controls; under the microscope they were much engorged with blood and contained hæmorrhages. The other organs, including the thyroid glands, showed no marked or uniform changes. The conclusions drawn were (1) that thyroid feeding in large doses caused congestion of, and hæmorrhage into, the suprarenal glands; and (2) antithyroid preparations in equal doses with the thyroid produced no effect in preventing the ill-effects of thyroid excess.

Mr. S. G. SHATTOCK and Dr. C. G. SELIGMANN made a communication upon Oöphorectomy and the Growth of the Pelvis in the Cow.[1] In the case of man the data for such an observation, amongst Europeans at least, were not forthcoming: that was the reason of the above investigation. The influence of an internal secretion upon the growth of bone was seen in the stunting accompanying cretinism; and, on *a priori* reasoning, the disproportionate growth of the female pelvis at puberty would be associated with the maturation of the ovaries. In passing, the authors referred to certain feeding experiments which they had carried out with dried sheep's thyroid upon the dachshund with the object of seeing whether the shortness of the limbs in this particular breed was to be ascribed to thyroid deficiency. In the case of the short-limbed Dexter oxen, it was a noteworthy fact that there was a marked proclivity to the bearing of true cretinous calves, as though the short limbness of the normal animal might be due to the diminution in some constituent of the thyroid secretion. A dachshund puppy received for two years 12 grains of dried sheep's thyroid daily. No increase in the normal growth of the limbs took place, although the administration was prolonged until the dog was fully grown. In the rabbit and pig the results of oöphorectomy upon the growth of the pelvis were, the authors had found, inconclusive. In these animals there was little or no difference in the size of the pelvis of the sexes, and for this reason the cow was selected. A calf was spayed when 7 weeks old, the uterine cornua being also removed. The animal was killed when 2 years and 5 months old. For comparison a fully grown cow of the same breed was taken. The pelves were prepared after death, together with the bones of the right hind limb as a standard of size. The measurements showed a diminished growth of the pelvis in the spayed animal. The feminine breadth of the hips observed in eunuchs castrated before puberty was probably due to local obesity. In Pelikan's work on the Russian castrating sect, the Skoptzi, figures are given showing this increase of breadth; the external conjugate diameter exceeded that of normal males. But these measurements were taken during life and were open to criticism, the actual size of the pelvis being masked by the local obesity of the buttocks and thighs and pubic region which ensues after early castration. In the eunuch's skeleton described by Lortet the pelvis presented no departure from the male type, though the length of the femora and leg bones was increased. The average height of the Skoptzi was above normal, and increased length of limb was a well-recognised result of early castration in animals.

Dr. P. J. CAMMIDGE and Dr. H. C. G. SEMON communicated a paper on an Experimental Investigation of the Origin and Cause of the "Pancreatic" (Cammidge) Reaction in the Urine. A method of examining the urine in suspected cases of pancreatic disease was described by Dr. Cammidge, and the results of 100 examinations of specimens from 94 persons were tabulated. These showed that while the urines of normal individuals and those in whom there was no reason to suspect disease of the pancreas gave no reaction, the specimens from patients who, clinically and at operation, showed evidence of inflammatory affections of the gland gave a characteristic crystalline deposit. Further experience with over 1500 specimens, a histological examination of the pancreas in 51 cases in which the urine had been examined during life, and the published results of most other observers have served to confirm these conclusions and to show, as E. H. Goodman[2] has recently said, that "taken in connexion with the clinical history and an examination and careful study of the fæces, the Cammidge reaction is strongly suggestive of inflammation of the pancreas." A chemical investigation of the products obtained in this urinary reaction has indicated that it is due to the presence of a sugar-complex, which on hydrolysis with hydrochloric acid gives rise to a substance having the reactions of a pentose,[3] and that the typical crystals seen in the reaction are pentosazone crystals. This fact lends support to the view that the reaction is dependent upon degenerative changes in the pancreas, for, according to Gründ,[4] the percentage of pentose in the dry weight of the pancreas is nearly five times as great as in any other organ of the body, and, according to Blumenthal,[5] it is more loosely combined and more readily set free than the corresponding sugar in other tissues. With the object of proving the dependence of the reaction upon diseases of the pancreas, and also to discover whether it was in reality due to degenerative changes in the gland or arose from metabolic disturbances consequent upon interference with the functions of the pancreas, the authors of the paper performed a series of experiments upon dogs. The operative portions of the work were carried out by Dr. Semon in the pathological department of the University of Freiburg. The results of these investigations confirmed the conclusions previously arrived at from clinical observation and post-mortem examination in the human subject. They showed that, while normal urines gave no reaction by the improved or C-pancreatic reaction, specimens derived from animals in which inflammatory changes had been set up in the pancreas gave a more or less well-marked reaction, corresponding apparently to the degree of the degenerative change in the gland.

Dr. HERBERT S. FRENCH described a case of Extensive yet Incomplete Fibro-caseous Disease of both Suprarenal Capsules in which symptoms of Addison's disease were not present. The patient was a man, aged 48 years, a painter by trade, who came under observation on account of a lump on the inner side of his left knee; this lump had first appeared a year previously and it had greatly increased in size so as to interfere with walking. There was now a large swelling over the internal condyle of the left femur and upper part of the tibia. The diagnosis at first lay between myeloid sarcoma on the one hand and tuberculosis of the knee-joint on the other. The trouble was ultimately shown to be tuberculous arthritis, upon which acute suppurative infection subsequently developed and caused the patient's death. At the post-mortem examination, in addition to the local mischief in the knee and leg, extensive adhesions were found all over both lungs, and in addition to scarring of the apices of both upper lobes there was a fibro-caseous focus as big as a bean near the apex of the left upper lobe, and dense fibrous adhesions without caseous material at the apex of the right upper lobe. There had obviously been extensive phthisis in both upper lobes, but this had got perfectly well an there was then no active tuberculosis of the lung. The only other organs that merited detailed description were the suprarenal glands. Each of these was of about normal size and shape, and before being cut into the only point that attracted one's attention in them was their firmness, which was comparable to the firmness of the suprarenal glands in cases of chronic heart failure. When each was cut into, however, it was found that there was considerable fibro-caseous degeneration in both of them. There was, however, a sufficiency of suprarenal tissue still left, representing about half of the right suprarenal capsule and about one-third of the left. The line of distinction between normal gland substance and the firm fibro-caseous tissue was very sharp, so that the process had presumably been going on for a long time. Nevertheless, the section exhibited showed that there were numerous giant-cell systems in the peripheral part of the caseous portion of the gland, so that presumably the disease was not obsolete but slowly progressing. About half of the section was structureless and caseous, half was normal, the two parts merging into one another without any structural line of demarcation between them. The oldest caseous change seemed to be central, the giant cells indicative of more recent tuberculous infection being round the edge. The interest of this case lay mainly in the fact that it afforded to some extent a natural experiment upon how much less than the normal amount of suprarenal gland tissue a full-grown human being might have without developing symptoms of Addison's disease. In this case the amount of suprarenal tissue left amounted to about five-twelfths of the normal total.

---

[1] The expenses incurred were defrayed by a grant from the British Medical Association and in part by the Lister Institute.

[2] Annals of Surgery, February, 1909.

[3] Proceedings of the Royal Society, B, vol. lxxxi., 1909.

[4] Hoppe-Seyler's Zeitschrift für Physiologische Chemie, Band xxxv., p. 111.

[5] Diseases of Metabolism, von Noorden's Clinical Medicine, 1906, p. 262.

Dr. **FRENCH** communicated the following note on Bronzed Diabetes with Cirrhosis of both Liver and Pancreas, and Pigmentary Deposits in these Organs as well as in the Skin. The patient was a man, aged 55 years, who came under observation suffering from glycosuria, giving a history that although he had been a heavy drinker he had been quite well until eight months previously when he noticed that he was wasting, and shortly after that he developed an abnormal thirst. Sugar was found in the urine, and a strict diet was adopted but without benefit. On admission to hospital the urine contained sugar, albumin without tube casts, acetone, and diacetic acid. He was a tall man but exceedingly thin, weighing little over 8 stones, though his height was 5 feet 10 inches. There was extensive pigmentation of the skin. In addition to the general bronzing of the body there were many very dark pigmentary deposits on the legs between the knees and ankles, and also a large number of freckle-like spots on other parts of the body. There was no similar pigmentation of the buccal mucous membrane. The degree of pigmentation was less than has been observed in some other cases of bronzed diabetes, but there was little doubt as to the diagnosis in this case. The heart and lungs were natural. It was noteworthy that the aorta was remarkably healthy and free from atheroma. The only organs that merited special attention were the kidneys, spleen, pancreas, liver, and the intestines. The intestines throughout their length exhibited upon the serous surface a characteristic broad white line on either side of the dark red blood-vessels; this was an appearance which was fairly common in diabetic cases even when there was no lipæmia—and there was no lipæmia in this instance. The white lines appeared to be lymphatics distended with some fatty substance. The spleen weighed 346 grammes, being enlarged and firm as in most cases of cirrhosis of the liver. The kidneys together weighed 538 grammes. They were symmetrical organs and looked natural to the naked eye except for their great bulk. Their increased size was due no doubt partly to the diabetes, but partly also to the patient's former habits of drinking. The capsules peeled well, leaving a perfectly smooth surface, free from cysts, and the renal arteries looked natural. There was no microscopical evidence of nephritis to account for the albuminuria, and the microscopical section showed that there was no interstitial fibrosis and that the epithelial cells exhibited no change that might not have been entirely due to post-mortem degeneration. There was no obvious pigmentation in the renal cells. The liver weighed 2551 grammes. It was a big, pale-brown, tough, cirrhotic liver of the characteristic small hobnail type. The section showed an extreme degree of perilobular fibrosis with proliferated bile-ducts in the fibrous tissue, and also what was worthy of special notice a very marked degree of dark-brown pigmentary deposit, particularly within the epithelial cells, many of which also showed large fat droplets, and in the cells of the so-called proliferated bile-ducts. Hardly a cell was free from the pigment which was thickly peppered all through them; there was little, if any, extracellular pigment. The pancreas weighed exactly 100 grammes, and although it was often difficult to demonstrate macroscopical changes in this organ in cases of diabetes, in this case it exhibited very obvious abnormality. It was exceedingly firm and one could readily see broad bands of fibrous tissue and fat infiltrated between the lobules of the gland, the lobules themselves being thereby considerably reduced in size; a great deal of the weight, therefore, was due not to pancreatic but to fibrous tissue, and the condition might well be described as cirrhosis of the pancreas exactly comparable to the cirrhosis of the liver. The microscopical section of the pancreas exhibited atrophy of many of its alveoli, together with considerable increase of the interstitial tissue both fibrous and fatty; some of the gland cells looked normal, but in some parts the parenchyma was almost unrecognisable and in many of the cells in these places there was an abundant deposit of brown pigment granules precisely similar to those seen in the hepatic cells; the arterioles did not seem to be unduly thick-walled; the islands of Langerhans were still to be detected in some places, but many of the cells in them showed brown pigment granules like those in some of the alveolar cells. The pigmentary changes in the pancreas and liver were presumably related to the pigmentary changes in the skin. They had been described by many previous observers, especially in France by V. Hanot,[6] A. Marie,[7] M. E. Jeanselme, de Massary and Potier,[8] and others. Dr. French said that he had brought the specimens before the section because they were not to be met with very commonly. The pigment granules were ferruginous, so that they were presumably derived in some way from blood pigment, though possibly only in an indirect manner. They did not seem to be related to any particular changes in the suprarenal capsules; they had been found in a great many different organs, so that the pigmentary changes were not local but widespread. It was not yet settled, however, whether the granules were merely taken up from the blood by the cells and, so to speak, stored, or whether they were produced within the cells themselves. Some observers had reported abundance of extracellular pigmentary deposits, but in the present instance its intracellular localisation was a striking feature; moreover, the healthier looking the cells were the fewer the pigment granules they contained, the pigmentary deposits seeming to be directly associated with other signs of cell degeneration, such as alteration in shape, diminution in size, and diminished capacity for nucleus-staining, together with the accumulation of intracellular fat droplets, particularly in the liver. In some cases the blood-vessels were distended with red corpuscles and no pigment granules were to be seen within these vessels. The general impression was, therefore, that the pigment granules had been produced within the cells themselves.

Mr. **SHATTOCK** gave a description of a Chylous Cyst from the neck contributed by Captain E. O. Thurston, I.M.S.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Operation for Prolapsus Uteri under Local Analgesia.—Hæmatoma of Ovarian Origin.—Malignant and Innocent Ovarian Growths.

A MEETING of this section was held on Jan. 13th, Dr. **H. MACNAUGHTON JONES**, the President, being in the chair.

Dr. **J. INGLIS PARSONS** reported a case of Prolapsus Uteri with Severe Cardiac Disease operated on under Local and Spinal Analgesia. The patient, who was 39 years of age, had had three children, the youngest being 5 years old. Menstruation had been regular but rather excessive. She had suffered for some years from a profuse leucorrhœa, and complained of bearing-down pains and falling of the uterus, which had been treated with pessaries without relief. On admission to the Chelsea Hospital for Women she was found to have a systolic mitral murmur and a systolic and diastolic aortic murmur. The pulse was a little irregular and had the typical water-hammer character of aortic regurgitation. Her general condition, however, was good. On vaginal examination the cervix was found to be enlarged and to present an erosion, the perineum was torn through to the sphincter ani, and there was prolapse of both vaginal walls. Dr. Parsons then determined to attempt injection with quinine solution of the broad ligaments for the prolapse under local analgesia. After treatment in bed for ten days the right broad ligament was injected first with 80 minims of his quinine solution after 1 drachm of saline solution containing 1-6th of a grain of eucaine β had been injected into each broad ligament. The first injection of the quinine caused a good deal of pain and the patient became distinctly faint, the pulse being hardly perceptible. The hypodermic administration of strychnine caused rapid improvement, and the second injection into the left broad ligament was then carried out. This caused almost as much pain and faintness as the first injection, but the patient recovered from it more quickly. Three weeks after the operation she left the hospital wearing a metal pessary, and when she again came to the hospital at the end of five months the uterus was in good position and she was able to do without the pessary. As the ruptured perineum still caused her a good deal of trouble she was readmitted into the hospital for the purpose of having this operated upon. In view of the condition of her heart the operation was performed under spinal anæsthesia. One cubic centimetre of a 5 per cent. solution of tropacocaine was therefore injected into the spinal theca between the third and fourth lumbar vertebræ, by the house surgeon, Dr. T. C. Clare. After waiting five minutes the patient was placed in the lithotomy position and anæsthesia was found to be satisfactory. Throughout the operation the pulse maintained its ordinary rate and there was no evidence of any cardiac distress. Two hours afterwards she felt faint and a little later actually fainted; this was no doubt due to the head of the bed having been raised eight inches for the purpose of limiting the upward diffusion of the tropacocaine solution. This case showed that spinal analgesia might be employed for operation on the pelvis, even where severe valvular lesions of the heart existed.

---

[6] Brit. Med. Jour., 1896, pp. 206–7, "Diabète Bronzé."

[7] Sur un Cas de Diabète Bronzé suivi d'Autopsie, La Semaine Médicale, vol. xv., 1895, p. 229.

[8] Un Cas de Diabète Bronzé, Bulletin de la Société Anatomique, fifth series, vol. ix., 1895, pp. 354–362.

Dr. Cuthbert Lockyer read a paper on Pelvic Hæmatoma of Ovarian Origin. He said that Mr. Stanley Boyd had given him the details of two cases operated upon for supposed acute appendicitis, but which proved to be cases of pelvic hæmatocele in which there was no evidence of pregnancy. In both instances the Fallopian tubes were intact and not damaged; in both an ovarian blood cyst had ruptured and was the cause of the internal bleeding. To these two cases of ovarian hæmorrhage not due to gestation Dr. Lockyer added a third, by permission of Dr. Amand Routh, in which after the left tube had been removed for ruptured ectopic gestation a pelvic hæmatocele formed on the right side, due to ovarian bleeding. In the first case a healthy young woman was taken ill with diarrhœa and abdominal pain. This began in the morning and became worse by night. The pulse-rate was 100 and the temperature 99·5° F. The next day, in the evening, the pain was worse; the pulse-rate had increased to 120 and the temperature was 100°. Mr. Boyd opened the abdomen by a paramedian incision and a hæmatocele was exposed. The left Fallopian tube was a little red and the ampullary end somewhat swollen. The orifice was patent but not large, and no blood could be squeezed from it. No trace of a fœtus could be found. The left ovary was represented by a thick-walled ($\frac{1}{8}$ inch) ruptured, collapsed cyst and was surrounded by clot. It and the right ovary, which was a mass of small cysts, were removed. The patient made a good recovery. In the second case a single young woman was seized while at a dance with pain in the right iliac region. The pain continued, but became rather less, until the following morning, when it recurred severely. In the afternoon the pulse-rate was 120 and the temperature 99°. Mr. Boyd saw her in the evening and found her writhing with pain. An incision outside the right rectus muscle revealed a mass of clot in the position of the right ovary. Through a paramedian suprapubic incision about 1 pint of recent blood clot was removed. The right ovary was adherent to the pelvic wall in the normal position and was surrounded by blood clot. On its anterior free surface there was a rent in the wall of a cyst, which had a diameter equal to that of a florin. The tube was apparently normal. The left ovary contained a cyst of the size of a cob-nut. This was opened and its lining membrane removed. The patient made a good recovery. Microscopic examination of the removed ovary showed that the origin of the bleeding was a corpus luteum which had matured at the last menstrual epoch—namely, a week prior to the date of the operation. The opposite ovary contained no corpus luteum. There must have been one present which ripened and discharged an ovum within a few days of the operation. The third patient was a married woman who was admitted into Charing Cross Hospital and operated upon by Dr. Routh as an emergency case. At the time of the operation she was collapsed as the result of repeated recent hæmorrhage. The abdomen contained a large quantity of fluid blood. The left tube was ruptured in its outer half and adherent to it was a mass of blood clot. The tube and ovary were removed and the patient made a good recovery. She was again admitted 16 months later complaining of pain in the right groin. Five days after admission Dr. Routh opened the abdomen and found the pouch of Douglas partly filled with blood, while the right ovary was also distended with clot, and presented a large rent on its surface. The tube was intact, but its fimbriated end was closed. The case was regarded as one of ovarian gestation, but a careful examination of the ovary showed no signs of gestation. A section of the wall of the cyst showed the lutein convolutions of a mature follicle still *in situ*. There was extravasation of blood into the stroma of the ovary, into the theca interna, and into the lutein convolutions, while engorged capillaries filled with red discs could be seen in the delicate connective tissue which kept the lutein convolutions together.—Dr. A. E. Giles said he had met with a case resembling that described by Dr. Lockyer. The patient presented symptoms pointing to a tubal gestation, and at the operation the left appendages and the right tube were normal, but there was a rent in the right ovary. The case was thought to be one of ovarian pregnancy, but an examination of the ovary by Dr. Lockyer showed that there were no signs of any such gestation present. Eight months later the patient was readmitted to the hospital with similar symptoms, and on this occasion the left ovary showed a rent with blood clot attached. The following report was given by Dr. Lockyer: "The specimen reveals the presence of very degenerate chorionic villi in the free blood clot. This was attached to the top of a hæmorrhagic area on the upper pole of the ovary. This area on examination showed a corpus luteum distended with clot and lined by very degenerate lutein cells."—Dr. G. F. Blacker said that he thought he had met with a case of this kind. The patient, a young girl, aged 19 years, a virgin, was admitted into University College Hospital with a history of acute abdominal pain. The pain had commenced suddenly two days before the period was due, and was followed by the formation of an abdominal tumour which gradually increased in size. The periods had been regular, and the last period occurred at the proper date, and was normal in amount. Dr. Herbert Spencer opened the abdomen and found a large hæmatocele, which was removed and the cavity drained. The patient made a good recovery. There was nothing to suggest pregnancy, and there seemed no reason to doubt that this was a case probably of hæmorrhage from a ruptured Graafian follicle in the ovary.

Mrs. Mary A. D. Scharlieb read a paper on the Proportion of Malignant to Innocent Ovarian Growths based on a consecutive series of 150 cases. Of the 125 innocent growths there had been paucilocular 48, multilocular 42, adenomata 10, papillomata 2, dermoid 16, corpus luteum 2, lutein cysts 1, fibroma 3, fibro-myoma 1. Of the 25 malignant cases there were papilliferous cysto-carcinomata 13, adeno-carcinomata 7, sarcomata 4, and uncertain 1. In this series of 150 cases no growth was included smaller than a hen's egg, and very few smaller than a lemon. The proportion of malignant to innocent cases worked out as one-sixth; the average age of the malignant cases was a little over 46 years and of the innocent cases about 35 years. The immediate mortality of the malignant cases was 20 per cent., whereas only two died of the 125 non-malignant cases; of these deaths one was due to the slipping of a ligature and the other to a large suppurating cyst universally adherent and not removeable. With regard to the question of whether malignant ovarian growths were primary or secondary, it was found that of 25 cases 5 were probably secondary, 2 to cancer of the stomach, 2 to scirrhus of the mamma, and 1 to sarcoma of the uterus. Mrs. Scharlieb said that it was important that all growths should be submitted to microscopical investigation by a competent pathologist.—Mr. B. Glendining offered some figures on the relative malignancy of ovarian tumours taken from the pathological records of the Chelsea Hospital for Women for the years 1908 and 1909. Among 106 cases of ovarian tumours (follicular, lutein, and tubo-ovarian cysts being excluded) the relative malignancy was 17 per cent. (11·3 primary carcinoma and 5·7 secondary carcinoma). The primary malignant cases were composed of columnar-celled carcinoma 5·7 per cent., endothelioma 1·8 per cent., and sarcoma 3·8 per cent.—The President said that he had gone through the records of 100 cases of removal of the ovaries for various growths and degenerations. Of this number there were 5 carcinomata, 3 of these being adeno-carcinomata, 1 sarcoma, 1 malignant papillary dermoid, and 1 papillary carcinoma. All the remainder were benign, including 2 fibroma and 2 adeno-fibroma.

MEDICO-LEGAL SOCIETY.

Food Adulteration in England and France.

A MEETING of this society was held on Jan. 25th, Sir JOHN TWEEDY, the President, being in the chair.

Mr. R. A. ROBINSON read a paper on Food Adulteration in England and France. In this country, he said, the local authorities were charged with the administration of the Sale of Food and Drugs Acts ; hence, as was always the case in the absence of control by a central authority, lack of uniformity was conspicuous. In some areas very few samples were taken, in others many. Some local councils allowed their medical officer of health to act as he thought fit, others controlled the work themselves. Some were reluctant to prosecute, others considered that an adverse report from a public analyst alone justified a prosecution. The Local Government Board and the Board of Trade had endeavoured to secure more efficient administration, but these two departments did not possess much real power. As regarded public analysts, in some cases these were required to give their whole time to their work, but the greater number were men who were also in private practice. In France, since 1905, the Department of Agriculture had been responsible for the suppression of adulteration of food throughout the country. Analyses might only be conducted in laboratories which had been approved by the Department. The State laboratories in France were splendidly equipped and performed their work more efficiently than was the case in England. As regarded proceedings with us, these could only be taken under Section 6 of the Sale of Food and Drugs Act, 1875, when an article "is not of the nature, substance, and quality demanded, and is to the prejudice of the purchaser." Before this could be asserted it was clearly necessary to know what it was that had been demanded ; in other words, what standard of purity or quality should be attained by a foodstuff sold under the name which the purchaser had used. The Acts did not fix any standard whatsoever. The Board of Agriculture had established a standard for milk, but with regard to the vast majority of articles of food sold retail, no department or body had statutory power to state what they should contain or to forbid the presence of any particular substance or limit the addition of preservatives. In the absence of standards, the practice of the local authorities and magistrates varied within wide limits, hardships were not infrequently caused, and many anomalies existed. At the present time it was only possible to deal effectively with two articles of food—viz., milk and butter. We could not usefully cause samples of cream, jams, golden syrup, vinegar, treacle, aerated waters, rice, preserved vegetables, tinned fruits, chocolate, lime-juice, sausages, potted meats, wines, and various drugs to be taken, and yet these articles frequently contained a proportion of boric acid or other preservative which many medical men regarded as excessive. The cheaper kinds of chocolate often contained foreign fats, starches, and powders of various kinds in considerable quantities, the makers of this stuff defining "chocolate" as "a sweetmeat flavoured with cocoa-bean." In France, as in Germany, Austria, Belgium, and the United States, a central authority had power to fix standards for articles of food. In every case the trade interests affected were consulted, and it was stated that all the standards so far framed had been agreed to by representatives of trade interests as well as by hygienists and officials. Processes of manufacture might be prescribed, or the addition of foreign substances forbidden or limited. A clear declaration of the presence of certain substances might be compelled. The result was that officials, manufacturers, and vendors knew exactly the position they were in. In Great Britain the only way of proceeding against the vendor of adulterated food was by a criminal charge in a court of summary justice, the vendor being liable to a fine and to imprisonment in default, whether or not he be shown to be a party to the adulteration. In France a *boná-fide* technical offender was not liable to any penalty or to be prosecuted under the Adulteration Act. As soon as a sample had been reported against an elaborate investigation into the circumstances was made. If the vendor failed to clear himself he was prosecuted, and if convicted was liable to severe punishment. The proper place for such an investigation was not, as in Great Britain, a court of criminal jurisdiction, but a civil court in which the judge should be assisted when necessary by technical advisers—experts in medicine or public health or analytical chemists, and unless the civil proceedings on the facts themselves revealed evidence of guilty knowledge or fraudulent intention the vendor should not be prosecuted. The law might well be amended so as to provide that every vendor of an adulterated article of food should be liable to pay a penalty to the administering authority, and that this authority should have power to sue for the penalty in the county court if not previously paid. If the penalty were paid on demand no publicity would attach to the matter, and an innocent offender would not find his reputation and his trade ruined by another's fault. This principle was already admitted in English law in the Pharmacy Act of 1868, where a person who illegally sold a poison was liable to pay a fine of £5 to the registrar. If the fine was not paid the registrar could sue in the county court. Some suggestions of a similar character had been made in a recent annual report of the Board of Agriculture.

Dr. G. S. BUCHANAN said he was in agreement with the proposition that in this country we should follow recent foreign and colonial examples and establish official definitions of articles of food. He thought Mr. Robinson had not given quite enough weight to the working compromises and makeshifts, by means of which, after all, a good deal of progress was made in this country in suppressing adulteration. Work under the Sale of Food and Drugs Acts was not merely a matter of prosecutions ; much might be done administratively by published reports, informal sampling, and warnings in appropriate cases. The Local Government Board had in the last few years given a lead to local authorities on such questions in relation to certain articles of food after a full inquiry into the trading and consumers' questions involved. The French, in their recent and comprehensive law of 1905, had the advantage of being able to take account of modern industrial organisation and modern practices of adulterating or misdescribing foods. From the information he had obtained in inquiring into French methods of securing the genuineness of descriptions of brandies and wines he believed these were resulting in good to the consumer and honest trader.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Treatment of Hæmorrhoids.—Use of the Cystoscope.—Abdominal Effusions.—Apparatus for Anæsthesia.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 21st, Dr. J. B. HELLIER, the President, being in the chair.

Mr. NORMAN PORRITT read a paper on a Simple and Efficient Operation for Hæmorrhoids, which is printed in full on p. 360 of this issue.

Mr. J. F. DOBSON read a paper on the Use of the Cystoscope, illustrated by lantern slides. He said that of the various instruments the new Nitze cystoscope was probably the best. With a cold lamp, wide field, and clear definition it was a great improvement on its predecessors. The Luys cystoscope was useful for the female. The various difficulties in obtaining a view of the bladder were discussed, and cases were described in which cystoscopy had been of great value in making a diagnosis. But, valuable as it was in bladder conditions, it was in the investigation of renal diseases that the cystoscope found its greatest field of usefulness. In cases of pyuria, hæmaturia, and bacilluria of doubtful origin accurate information could almost invariably be obtained. The presence of lesions of the bladder could be eliminated or confirmed ; disease in one or both kidneys could be recognised, and if one kidney was disorganised the functional capacity of the other kidney might be ascertained. Nephrectomy, except in cases of extreme urgency, should never be performed unless a preliminary cystoscopic examination had been made. Statistics bearing on this point were given. He said that the methods of investigating the state of the kidneys were : 1. Cystoscopy alone. This was thought to be insufficient. Details were given of a case of advanced tuberculous pyonephrosis in which the orifice of the ureter showed no abnormality. 2. Cystoscopy and the segregator. Though useful in some cases in slight hæmaturia and pyuria the segregator was not reliable. 3. Chromocystoscopy (Voelcker and Joseph).

This was a method of considerable value which should, however, be supplemented by the use of the ureteral catheter. 4. Ureteral catheterisation. The difficulties and dangers of this were discussed, and he considered that with proper care and the selection of cases the dangers were very small. He described the various methods of estimating renal permeability, such as the injection of methylene blue and indigo carmine, the production of phloridzin glycosuria and of artificial polyuria, &c. Illustrative cases were given.

Dr. O. C. Gruner read a paper on the Laboratory Examination of Abdominal Effusions. A description was given of several of the more reliable chemical tests which the author was accustomed to employ. The reactions for different varieties of albumoses were specially advocated, and it was pointed out that the richer the fluid poured into the peritoneum was in protein derivatives the more likely was the case to be one of cirrhosis of the liver or of cancer involving the peritoneum. One or two new applications of existing tests were referred to and the value of a thorough analysis of these fluids was indicated.

Dr. S. T. Rowling showed an Apparatus for the Administration of Oxygenated and Warmed Ether Vapour for General Anæsthesia. The apparatus consisted of a long cylinder containing ether, through which oxygen was passed. The gas was warmed both before and after—before, in order that more ether vapour might be taken up, and after, to counteract the chilling of ether evaporation. The warmer contained hot water and the gas passed through coiled tubes inside. The face mask had a hollow perforated frame through which the ether passed.

Dr. E. F. Trevelyan showed :—1. Two twin Jew boys, aged 13 years, with Typical Epilepsy. They were the third and fourth of a family of 10 children, all of whom had suffered from fits during teething. The fits, which had persisted in these boys and had recently become more frequent, appeared to be controlled by bromides. 2. A man, aged 41 years, with Severe Paralysis Agitans. The tremor began in the left arm five years ago and soon spread to the left leg. The opposite side and the lower face became affected 11 months ago. He presents the typical facies and, to a less extent, attitude of the disease.

Mr. J. Basil Hall showed : 1. A large Sarcocele weighing 5 pounds. The tumour occurred in a man, aged 62 years, and had been growing 18 months. A complete pathological examination of the specimen had not yet been obtained, but it appeared to be a carcinoma undergoing colloid degeneration. The inguinal glands were infected, and had been removed with the tumour. There was no thickening of the cord. There was an enlarged gland in the opposite groin. 2. A Fibrolipoma of the Pharynx, removed from a man, aged 60 years, through a pharyngotomy opening. The patient had suffered from dysphagia for six months and could only swallow fluids. The tumour was sessile, and attached to the lateral wall of the pharynx on the left side an inch below the base of the arytenoid cartilages. It could be grasped with forceps through the mouth, but the pedicle could not be secured against hæmorrhage. It was easily removed through an incision through the usual pharyngotomy route on the left side of the neck. Except for a slight secondary hæmorrhage after a fit of coughing recovery was uneventful. 3. A Hatpin, three inches long, removed through a low tracheotomy opening in a boy aged 12 years. The boy was holding the glass head of the pin between his teeth when he made a sudden inspiratory effort and the pin disappeared. No symptoms occurred, but on placing him before an X ray screen the pin could be seen lying in the left bronchus, the point being upwards close to the tracheal bifurcation. An attempt to seize the pin with forceps failed, but on allowing the patient to become semi-conscious and then tickling the mucous membrane of the trachea the point of the pin appeared momentarily in the tracheotomy opening. On repeating this manœuvre the pin was seized and removed. The tracheal incision was sutured and the wound closed.

Dr. F. W. Eurich showed a Spinal Cord from a woman, aged 50 years, who had suffered from "pins and needles" in the hands and feet and weakness of the lower limbs. The patellar reflexes were increased, there was ankle clonus, but no anæsthesia. There was very severe pain over the sacrum and in the groins; later, paralysis of the bladder, with incontinence of urine and fæces. She could flex the lower limbs but not extend them. Tumour of the lower lumbar cord was diagnosed, but at the necropsy a tumour was found in the lower sacral cord. The patient's condition was too bad to admit of operation.

Other cases and specimens were also shown by Dr. A. G. Barrs, Mr. B. G. A. Moynihan, Mr. G. Constable Hayes, Dr. A. Bronner, Dr. T. Wardrop Griffith, Dr. C. Oldfield, Mr. R. Lawford Knaggs, Dr. R. A. Veale, and Dr. W. H. Maxwell Telling.

EDINBURGH OBSTETRICAL SOCIETY.

Adjourned Discussion on the Rational Puerperium.—Ovarian Epilepsy.

A meeting of this society was held on Jan. 12th, Dr. F. W. N. Haultain, the President, being in the chair.

The discussion was resumed on Dr. J. W. Ballantyne's paper on the Rational Puerperium.—Dr. J. Lamond Lackie commented on the "Liegegymnastik," and said that while these exercises could not possibly do much harm, yet they must entail more exertion by the patient than simply getting out of bed and being wheeled on a chair to another place. There was also the possibility of exposure to chill during the exercises. He could not see that these movements could do much good when carried out for only seven days, as it was known by those engaged in physical culture that it took weeks to improve the state of the muscles. He thought that massage carefully applied after labour was more rational. The puerperal pill did not seem necessary in ordinary normal cases when the woman nursed her child. He supported early rising, as he had seen the satisfactory results following it. In private, without exception, the results were excellent, and he had found no displacements one month after. Dr. Ballantyne's statistics had shown four displacements in 107 cases, and Dr. Haultain's two displacements in 100 cases.—Dr. F. Porter criticised the reports about the women in Java, and questioned their accuracy. The one case of death from embolism during early rising was not to be considered in this connexion. Two of his cases had died from embolism —one on the fifth day after an abortion, and the other on the ninth day after labour in a patient who had never been out of bed.—Dr. E. F. Armour considered the puerperium as a physiological process, with a striking tendency to depart into the pathological. He feared the medical man's instinct to consider and treat all puerperal cases as patients. The usual habit of women, taken generally, in such matters would probably be a safe guide for a normal rule. He had been satisfied with his experience of early rising.—Dr. H. O. Nicholson thought that a good clue for consideration in this matter was obtained in dispensary practice. During his term there were 1000 cases, with no death and no serious sepsis. These women would sit up freely in bed to nurse the child and to urinate, and with no harm. They gave better results than were obtained in maternity or private practice. He considered that the essential point was satisfactory drainage. The puerperal pill helped this by acting on the uterus.—Dr. J. Haig Ferguson considered that the immediate results of early rising would be that some women would take many liberties with impunity. The results of too early rising were very evident in the poorer classes—in prolapse, cystocele, and displacements, and these were never seen to the same extent in private practice. He did not consider that there was any more danger in the exercises in bed than on getting up. He could not agree with the suggestion that the patient's wishes should be taken as a guide; the medical man was called in to guide them in such matters. The puerperium, being a physiological condition, did not require any pill; but if the woman did not nurse, the condition was then really pathological and the pill would give the necessary stimulus to the uterus. He was quite satisfied with the present system; one should secure good uterine drainage and prevent the patient from stagnating.—The President thought that the crux of the whole matter was our attitude to the puerperium, whether it was physiological or pathological. The puerperal process was not more finely balanced and ready to pass into the pathological than any other physiological process in the body. If the puerperium were physiological, why then should a woman be condemned to lie for two or three weeks in bed? Most women were only too keen to rise. He asked them, "Would you like to get up?" and if answered in the affirmative, then he said, "There is no reason for you to lie in bed." Since his paper[1] he had had 25 cases in private, and of these 20 rose on the third day; all had progressed perfectly well, and those who had come through other confinements all expressed that they felt better than previously. Of the other five two would not rise, one was a case of placenta prævia, one had heart disease, and one had a child of 11 pounds weight. This last patient he thought as a precautionary measure he would not advise to get up; she was kept in bed for three weeks, and afterwards developed a prolapse. The question of prolapse was a remote one, and his belief was that it was not increased by early rising. He did not agree with Dr. Ferguson's comparison between the incidence of displacements and prolapse in hospital and private patients. There were more of the former. Thrombosis was a rare condition. He had seen no phlebitis in the series of 125 cases. Early rising stimulated the circulation and thus acted as a preventive to phlebitis and thrombosis. Dr. Ballantyne's alternative of exercises in bed must do good, but was not such a good method of producing exercise as getting up out of bed. He saw a difficulty for the ordinary individual to adopt early rising as it would be blamed for everything that went wrong.—Dr. G. Keppie Paterson and Dr. W. N. Elder also discussed the paper.—Dr. Ballantyne, in his reply, considered the puerperal period as physiological, but liable to stress and strain. He admitted that there were advantages in early rising but with risk; by practising movements in bed first and rising later they got the advantages and avoided the possible risks.

Dr. Hugh S. Davidson read a paper on Ovarian Epilepsy with a report of two cases treated successfully by operation. The first case was a single woman who suffered from fits which came on a few hours before the menstrual period. There was great pain before the period and during the first day; she had always been regular. The fits began about six months after the onset of the menses at the age of 14 and had now lasted for some years. The fits did not occur during the intermenstrual period. With the onset of the fits the patient became unconscious, fell down, and frequently injured herself. She never bit her tongue; only once did she urinate in a severe fit. The unconsciousness lasted from half an hour to two hours, followed by headache and drowsiness. If 30 grains of bromide of potassium were taken the night before the convulsion was due the fit usually did not occur; or if taken in 10-grain doses thrice daily continuously the fits usually did not occur. Latterly, however, the fits did occur and in spite of increased doses. On examination the only abnormality found was an enlarged and tender left ovary; pressure on it did not produce a convulsion. This ovary was removed; the right ovary was left as it appeared healthy. Follicular ovaritis was found on section of the left ovary. Three months after the operation she had a fit at the time of a period when she was overworked. One year had since elapsed with no return of the fits. The second woman was also single and had suffered from fits from the age of 12 years when the menses appeared; the fits occurred on the day before and on the first day of the period. They did not occur every month and at first not at all between the periods. Bromides stopped the fits, but they recurred when the medicine was discontinued. Curettage was performed, resulting in a great improvement for two years, when the fits returned. Bromides again controlled them for a time, but later failed altogether. The fits increased in frequency, appearing between the periods. During the fit she became unconscious, fell down, and bit her tongue. Nothing abnormal was found on vaginal examination in the uterus or ovaries. On operation the ovaries appeared normal; both were removed. Since the operation, three years ago, no fits had occurred and the patient had improved greatly in general health. Though generally termed menstrual epilepsy from the coincidence of the fits with the menstrual period, it was apparent from these two cases, and from a study of all others in literature, that it was not in any way due to menstruation, but that it was an ovarian condition. The first point to decide was whether such cases were examples of true epilepsy or of hystero-epilepsy. On operation in 31 other recorded cases the ovaries appeared normal in 3, cystic in 15, hypertrophied in 4, cirrhotic in 4, adherent in 2, degenerated in 1, blood cysts in 1, and in 1 no mention is made of the condition. In 16 cases bromides were stated to have had no effect on them; 22 cases were cured by operation and 5 showed improvement.

Northumberland and Durham Medical Society.—The January meeting of this society was held at the Royal Infirmary, Newcastle-on-Tyne, Mr. E. H. Davis being in the chair.—Professor Stuart McDonald gave a *résumé* of the Morbid Changes found after Delayed Chloroform Poisoning.—Dr. William Martin showed some tracings illustrating the effect produced on the blood pressure of rabbits by the intravenous injection of pituitary extract.—Mr. John Padbury, C.E., showed the "Draeger" Automatic Pulmotor for Artificial Respiration, and its uses as a means of resuscitating persons apparently dead from chloroform poisoning, drowning, carbonic acid gas poisoning (down coal-mines), &c.—Professor McDonald showed the following specimens: 1. The Brain from a case of Epidemic Cerebro-spinal Meningitis; the exudate extended over the vertex in addition to the base. 2. The Brain, Lung, and Kidney from a case of General Streptothrix Infection showing Purulent Deposits; also the organs of a rabbit inoculated intravenously with a pure culture of the streptothrix isolated in the foregoing case, the resemblance of the lesions to those of tuberculosis being marked. 3. Microscopical specimen from a case of Delayed Chloroform Poisoning demonstrating the fatty degeneration in the muscular substance of the heart and in the renal epithelium, but more especially in the liver.—Sir Thomas Oliver showed an Aortic Aneurysm which had burst into the pulmonary artery, together with micro-specimens of the radial artery from the same case showing the thickening of the tunica intima and tunica media.—Dr. W. D. Arnison showed a series of radiograms demonstrating Fractures, Foreign Bodies, and Genito-urinary Calculi.—Mr. J. Clay showed two Ovarian Cysts with Twisted Pedicles obtained respectively from children aged 3 and 12 years.—Dr. T. Gowans showed a Rodent Ulcer of the Outer Canthus of the Eye excised with the lower eyelid from a female aged 48 years. She had had X ray treatment for months, but a temporary improvement had been succeeded by a recurrence.—Dr. J. W. Heslop showed a specimen of Popliteal Necrosis of the Femur in a boy aged 16 years; sequestrotomy by division of the femur was performed, but secondary hæmorrhage from erosion of the femoral artery made it necessary to amputate through the thigh, and the patient succumbed; the specimen showed marked sclerosis of the bone and the carious end of the divided portion which lay against the femoral artery and eroded it.—Dr. Ranken Lyle showed the right section of a Double Uterus containing a macerated fœtus; the left section contained a three months' pregnancy and was not interfered with. The patient was 23 years of age; she had been three years married and had one child. There was a history of 12 months' amenorrhœa, and she was now seven months pregnant.—Dr. Lyle also showed a case of Inversion of the Uterus from a nulliparous patient aged 40 years.—Dr. A. M. Martin showed a specimen of Acute Inflammation of a Meckel's Diverticulum, with a large enterolith *in situ*. The patient was a young man suffering from intestinal obstruction. The diverticulum was completely gangrenous; its proximal end was found in the region of the gall-bladder; it was tightly stretched across a loop of small intestine, causing obstruction; it was removed along with an adherent portion of omentum, and a good recovery ensued.—Mr. Rutherford Morison and Mr. R. J. Willan showed Renal Calculi removed by operation from a male aged 25 years, together with figures giving the estimation of the renal function (both kidneys) arrived at by means of the phloridzin glycosuria test after catheterisation of the ureters.—Dr. A. S. Percival showed a Series of Pseudo-gliomata with Tumours of the Optic Nerve.—Mr. W. G. Richardson showed a Benign Tumour of the Prostate, weighing 9½ ounces, removed suprapubically from a patient aged 78 years, who made a good recovery.—Dr. J. V. W. Rutherford and Mr. Willan showed a Malignant Growth of the Kidney removed by operation from a female aged 55 years. The renal function was estimated by the phloridzin glycosuria test by means of the ureteral catheter. The patient made a good recovery.—Dr. S. S. Whillis showed a Papilloma of the Larynx removed under cocaine by Brüning's direct laryngoscope.—Mr. Willan showed Vesical Calculi removed by litholapaxy from a man aged 65 years, who made a good recovery.—Dr. W. F. Wilson showed a series of Rhinoliths. —Other specimens were shown by Dr. T. Beattie, Dr. W. E. Hume, Mr. H. B. Angus, Dr. H. P. Bennett, Mr. Edward B. Kitching, Mr. J. W. Leech, Dr. J. Dunlop Lickley, and Mr. T. G. Ouston.

---

[1] See The Lancet, July 31st, 1909, p. 297.

HARVEIAN SOCIETY.—A meeting of this society was held at the Hospital for Paralysis and Epilepsy, Maida Vale, on Jan. 27th, Dr. Montagu Handfield-Jones, the President, being in the chair.—Dr. George Ogilvie showed: (1) Three children, sisters, suffering from a form of Hereditary Ataxia differing in several features from Friedreich's disease; and (2) three cases of Tabes treated over varying periods by special exercises, showing the gradual improvement in gait obtained thereby.—Dr. Leonard Guthrie showed: (1) A case of Acute Bulbar Poliencephalitis in a child aged 13 years, improving under treatment; (2) two cases of Congenital Spastic Paraplegia; and (3) a case of Cerebellar Encephalitis. —Dr. H. Campbell Thomson showed: 1. A case of Paralysis of the Serratus Magnus Muscle from Injury, and demonstrated the consequent loss of power in fixation of the scapula as shown by its winged appearance when the arm was raised, and also the inability to lift the arm freely above the head owing to the rotation of the scapula being incompletely performed. 2. A case of Cerebral Tumour of the Motor Area in which the chief localising symptom had been the occurrence of Jacksonian epilepsy in the right foot. Removal of the tumour had been followed by great temporary benefit, so that the patient had been able to return to his work for some months. Unfortunately, the growth proved to be malignant, and signs of extensive recurrence were now present.—Dr. Griffiths showed for Dr. Harris a case of Infantile Hemiplegia with extreme Contraction of Wrist Flexors treated by division of the tendons; and for Dr. Johnston a woman suffering from Tabes with Charcot's Disease of the Knee.—The cases were discussed by the President, Dr. Collie, Dr. Turtle, Dr. Campbell Thomson, Dr. Guthrie, and Mr. E. Laming Evans.—The meeting concluded with a vote of thanks to the members of the hospital staff.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 26th, Dr. A. Fulton, the President, being in the chair.—Mr. H. B. Tawse, in a paper on Killian's Submucous Resection of the Nasal Septum, emphasised the value of a local anæsthesia by means of cocaine and adrenalin hydrochloride in this operation. He employed this method with one exception in 110 cases with complete success. The sitting posture and the conscious help of the patient greatly helped the operator, and complaints of pain were very few; whereas chloroform meant the patient being recumbent and the presence of a first-class anæsthetist. He ordered the patient to have a good meal before the operation and an alkaline nasal douche. Describing the operation, he made a buttonhole incision in the mucous membrane with a tenotome, and with a blunt dissector carefully freed the muco-perichondrial tissue from the cartilage. The cartilage was then incised in the same line as the original incision and then freed from the opposite muco-perichondrial tissue. After cutting away the cartilage the mucous membrane was united with a few stitches and the nasal cavities were plugged for 12 hours. The œdema which appeared after 24 hours disappeared after several days. Blowing the nose was prohibited for three weeks. Mr. Tawse, after dwelling on the difficult cases, enumerated the errors likely to be made during the operation, such as buttonholes, especially where adhesions resulting from old fractures were encountered. Secondary hæmorrhage was easily remedied by prompt plugging of the bleeding point. After enumerating the various indications for operation, Mr. Tawse gave a review of 110 cases, 102 of which were completely successful as regards the operation.—The President, Dr. A. R. Tweedie, and Dr. F. H. Jacob took part in the discussion.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The Gaskell Prize examination and the examination for Certificate in Psychological Medicine will take place early in July. Essays for the Bronze Medal of the Association should be sent to the registrar, Dr. A. Miller, Hatton Asylum, Warwick, before June 14th.

Reviews and Notices of Books.

Atlas of Clinical Surgery, with Special Reference to Diagnosis and Treatment. For Practitioners and Students. By Dr. T. BOCKENHEIMER, Professor of Surgery, University of Berlin. English adaptation by C. F. MARSHALL, M.D. Vict., F.R.C.S. Eng., late Assistant Surgeon to the Hospital for Diseases of the Skin, London. With 150 coloured figures from models by F. KOLBOW in the Pathoplastic Institute of Berlin. London: Rebman, Limited. 1909. Three volumes. Pp. 419. Price, half roan, £4 6*s.* net; full roan, £4 14*s.* 6*d.* net.

THE success which attended the publication by Messrs. Rebman of the portfolio of dermochromes by Professor Jacobi naturally suggested the desirability of issuing similar volumes dealing with those parts of clinical surgery which could be usefully illustrated by coloured pictures. It is probable that in no other part of the world is there so extensive a collection of models of morbid conditions as in the Pathoplastic Institute of Berlin, where the models have been executed by Kolbow. The realism with which they recall the very shape and appearance of the diseased tissues has rendered these models of the greatest service in the teaching of clinical surgery, and they thoroughly deserve the more widespread recognition which will be given them by their publication in the present volumes. The illustrations have been reproduced by the four-colour process, and the eulogy which we gave to the volumes of dermochromes is equally deserved by the volumes before us. They are extremely lifelike, and if anything can supply the want of a personal view of living cases it will be these illustrations. The text represents the teaching of von Bergmann's school, and Professor Bockenheimer has described carefully the diagnosis, prognosis, and treatment of each case illustrated. With regard to the translation we need only say that Dr. Marshall has very successfully rendered into English the German text, and he has added here and there a few paragraphs where they appeared to be needed. He is apparently not responsible for the titles placed under the several illustrations; these are in Latin and they do not always adequately represent the names of morbid conditions employed in this country. This is, however, only a small fault and does not materially detract from the value of this excellent work, which we commend to the attention of practitioners who wish to have the assistance in diagnosis which plates such as these would give.

Transactions of the Bombay Medical Congress, 1909. Edited by Lieutenant-Colonel WILLIAM ERNEST JENNINGS, M.D. Edin., D.P.H., I.M.S., General Secretary of the Congress. Bombay: Bennett, Coleman, and Co.

THIS volume of the Transactions of the Bombay Medical Congress contains many really valuable contributions to tropical medicine. The Congress held at Bombay was the second of its kind, the first having taken place at Calcutta in 1894, and these Transactions show that it followed its predecessor in furnishing information of the greatest use to the State, while at the same time it reflects notable honour on the medical services of the Crown whose labours are carried on in our Eastern dependency. The various sections have certainly dealt exhaustively with the chief tropical diseases: thus we find among the subjects treated cholera, dysentery, enteric fever, tropical diarrhœa, malarial fever, the plague, the Leishman-Donovan-body invasion, relapsing fever, animal parasites, snake venoms, beri-beri, mycetoma, leprosy, elephantiasis, disposal of sewage in India, water-supplies, disinfection, naval and marine hygiene, quarantine, and tropical surgery, including ophthalmic surgery, vesical and renal calculi affections.

The Transactions open with the address given by the President, Surgeon-General Henry Wickham Stevenson, I.M.S., followed by the Presidential Address of His Excellency the Governor of Bombay, Sir George S. Clarke. Many of our readers have, no doubt, already read these addresses, and we may pass from them to the sectional work, especially to the general conclusions arrived at. First, with regard to cholera. Here, as the result of discussion, we are somewhat surprised to find that the employment of opium was favoured in the first stage either hypodermically or by several small doses internally, the total quantity to be given being within the limits of a single lethal dose, to obviate accumulation and subsequent absorption *en masse.* With regard to the second stage, the intraperitoneal method of saline injections is stated to be superior to the intravenous or subcutaneous method of administration, whilst Major Leonard Rogers's plan of the hypertonic salt solution should be employed to maintain a high percentage of salt in the blood, and thus to cause the osmotic current to carry fluid to the vessels rather than allow it to escape therefrom.

Stress was laid on the spread of dysentery by means of the convalescing human being acting as a "carrier"—by the shedding of the virus from unhealed intestinal lesions which reaches the alimentary tracts of healthy persons in various ways. The recognition of the above fact will be of the greatest value in effecting efficient prophylaxis in prisons, asylums, schools, and other institutions. As regards the treatment of dysentery, evidence was adduced as to the value of vaccine therapy with vaccine prepared from Shiga's bacillus in the acute forms, and of the same combined with mercury in the chronic forms. The much-discussed prevalence of enteric fever in India received due acknowledgment. Stress here also was laid upon the part played by bacilli carriers: first, by those who after an attack of the disease continue to harbour infection and excrete it in their fæces and urine; and, secondly, by those who have been in close contact with the patients, or who have lived under conditions where infection was possible, and in whom the virus is harboured without having actually passed through a recognisable attack. Such carriers may be dangerous for months or years. As was well pointed out by Colonel D. Semple, R.A.M.C., great importance should be laid on ready methods of detecting carriers and of rendering them harmless. Dr. A. G. Newell read a paper on Hill Diarrhœa, in which he controverted the mica theory, and suggested the etiology of the affection to be the diminution of the atmospheric pressure causing a deprivation of blood in the internal organs, leading to diminished functional activity and an abnormally luxuriant growth of intestinal flora. He recommended as the most important prophylactic measure the wearing of some non-conductable material next the skin. The importance of a blood examination in the various forms of obscure tropical diarrhœas was insisted on.

The important subject of malaria gave rise to a lengthy and spirited discussion. This section had the advantage of the presence of Major Ronald Ross, I.M.S., to whom the whole tropical world is so much indebted. The lines of prevention he has laid down were most favourably received —viz., the prophylactic administration of quinine in villages and rural districts with scattered populations, mosquito reduction in cities, towns, and densely populated places, and a combination of these two measures in the presence of severe malaria and other suitable conditions.

With respect to blackwater fever, the evidence brought forward as to its etiology pointed to its undoubted malarial origin; here this opinion certainly is somewhat difficult to understand, when there is the evidence of many medical officers who amongst their hundreds of cases of malarial fever have never met with a case of the disease in question. Still, it coincides with the view of Dr. W. T. Prout, one of the acknowledged authorities on blackwater fever. Major George Lamb, I.M.S., with respect to plague, showed that in man it was entirely dependent on the disease in the rat, the infection being conveyed by the rat flea. There was no dissent as to the part inoculation—for which we are indebted so much to the labours of Haffkine—should take in the matter of prevention.

Sleeping sickness received due attention from the hands of Captain E. D. W. Greig, I.M.S., who indicated the best means of prevention by operations directed against the tsetse fly and against the parasite harboured by the fly. Dr. Leonard Braddon read a paper on Beri-beri, which would appear to leave practically no doubt that the disease is due to an intoxication caused by a specific poison contained in rice when stale—that is to say, after long exposure when decorticated. Many communications in our own columns, notably those of Dr. H. Fraser and Dr. T. A. Stanton (THE LANCET, 1909, vol. i., p. 451), and of Mr. C. W. Curtis (THE LANCET, 1909, vol. i., p. 1777), support this view.

We are very glad to note the recommendation of the advantages of orange or red coloured material for the lining of helmets and protection of the spines of those exposed to the sun's rays, corroborating the theory of the action of this colour in obstructing the passage of the actinic rays of the sun and of their causation of sunstroke, for which we are indebted to Colonel F. Maude, C.B., R.E.

We make no attempt to review this book—in other words, the whole proceedings of the Congress—at length or in detail. We would only state that the report of the Transactions of the Bombay Medical Congress is of the greatest value to tropical medicine, and that its perusal will well repay close attention. It reflects the highest credit on the medical officers of the Indian and the Royal Army Medical Services.

Pain: Its Causation and Diagnostic Significance in Internal Disease. By D. RUDOLPH SCHMIDT, Assistant in the Clinic of Hofrat von Neusser, Vienna. Translated and edited by KARL M. VOGEL, M.D., Instructor in Pathology, College of Physicians and Surgeons, Columbia University; Clinical Pathologist and Assistant attending Physician, St. Luke's Hospital; and HANS ZINSSER, A.M., M.D., Instructor in Bacteriology, College of Physicians and Surgeons, Columbia University; Assistant Pathologist, St. Luke's Hospital. London: T. Fisher Unwin. Pp. 326. Price 12*s.* 6*d.* net.

IN supplying a careful analysis of pain and its significance from the clinical standpoint Dr. Schmidt has produced an interesting book which should serve to emphasise the value of some of the subjective aspects of disease. These features are too often overlooked or misinterpreted in the ordinary routine of case taking, and since pain often looms largely on the patient's mental horizon it should be given due consideration both in connexion with diagnosis and treatment. After a general consideration of the sensations of pain and of their modification by various factors, Dr. Schmidt discusses the forms of pain referred to various parts of the body in a chapter headed Topography in its Relation to Pain. The characters of pain as evidence of morbid conditions of the various systems are then considered in some detail. The difficult subject of headache and its significance is dealt with at length under the heading of Pain in connexion with the Nervous System, and a classification into three groups is adopted—viz., forms due to elevations of intracranial pressure, those caused by chemical poisons, and those of reflex nature. Neuralgia is also considered fully and the diagnosis of visceral neuralgia is discussed. Dr. Schmidt admits that this is one of the most difficult problems in diagnosis and that it can never be made with absolute certainty. In the chapter devoted to the digestive system gastralgia is described and classified and considerable attention is given to it. The term hunger pain is apparently applied to one form, but no reference is made to the association of hunger pain with duodenal ulceration. Dr. Schmidt suggests that anæsthesin or cocaine may be useful in distinguishing between the pain of gastric ulcer or carcinoma and that of duodenal ulcer, since in the former cases the pain usually ceases within a quarter of an hour after the administration of these drugs in small quantities—e.g., 16 drops of a 1 per cent. solution of cocaine. The consideration of the various forms of pain associated with the digestive organs occupies considerable space and the differentiation of these causes is carefully discussed. In the chapter on pain in connexion with the respiratory and circulatory organs a brief discussion of angina pectoris is included and the pains which occur in association with chronic aortitis are described.

The editors have added a chapter on cutaneous tenderness in visceral disease with many diagrams, embodying Dr. H. Head's researches on that subject. The book as a whole is an interesting and full study of pain and its clinical indications.

LIBRARY TABLE.

The Operations of Aural Surgery, together with those for the Relief of the Intracranial Complications of Suppurative Otitis Media. By C. ERNEST WEST, F.R.C.S. Eng., Aural Surgeon to St. Bartholomew's Hospital; and SYDNEY R. SCOTT, M.S. Lond., F.R.C.S. Eng., Assistant Aural Surgeon to St. Bartholomew's Hospital. Illustrated. London: H. K. Lewis. 1909. Pp. 201. Price 7*s.* 6*d.*—Few departments of surgery have undergone such radical changes during the past few years as has the surgery of the ear, and a modern work on the diseases of this region differs enormously from one written only a few years ago. In most books on this subject the whole treatment of diseases of the ears is considered, but in the volume before us the authors have restricted themselves to an account of the operations on the ear, the non-operative treatment not being considered. The operations on the ear are now very elaborate, and there was distinctly room for a book dealing in detail with the mode of performing them. In this work the authors take each operation in turn and describe the indications for it; then follows the general and local preparation of the patient; and lastly a list is given of the instruments and other appliances which the surgeon will need. In some cases a photograph is supplied showing all the required instruments for the particular operation. We have formed a high opinion of the value of the work; it should be of especial use to senior students working in the ear department of a hospital and to those qualified surgeons about to devote themselves to otology. In operations so modern as most of those on the ear there are many points on which general surgical opinion has hardly yet crystallised, and it is of value to possess in this book an account of a practice followed at St. Bartholomew's Hospital. The style is condensed, and so the work contains much more than might be expected from the size of the book.

The Practical Medicine Series. Comprising ten volumes on the year's progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post Graduate Medical School.—Vol. IV., Gynecology. Edited by EMILIUS C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, Gynecologist to St. Luke's and Wesley Hospitals, Chicago; and A. VON BACHELLÉ, M.S., M.D., Assistant Professor of Obstetrics, Chicago Policlinic and College of Physicians and Surgeons, Gynecologist to the German Hospital, Chicago. Illustrated. Series 1909. Chicago: The Year Book Publishers; and Glasgow: G. Gillies and Co. Pp. 225. Price 5*s.*—The Practical Medicine Series presents in text-book form annotations covering the advances made in medicine and surgery for the year to which they relate. The arrangements of different subjects in handy volumes coming out at intervals make the series of practical value, and the present work forms no exception to the rule. The subjects discussed cover the whole ground of gynæcology, and the mode of annotation is one that should render the book of special value as a work of reference to the busy practitioner. The volume dealing with gynæcology gives in a short form the most noteworthy articles on this subject that have appeared in the years 1908–09. Among important matters touched on is the treatment of uterine hæmorrhage by subcutaneous and intragluteal injection of fresh human serum in 10 cubic centimetre doses. Discussing the value of lumbar anæsthesia, it is stated that "the psychic effect of the things seen and heard by the patient during the operation is not good." Hysterectomy is dealt with in several articles. The fate of belated ovaries is mentioned and also their value. It would appear that the last word still has to be said about perineorrhaphy.—Vol. V., Obstetrics. Edited by JOSEPH B. DE LEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. With the collaboration of HERBERT M. STOWE, M.D. Illustrated. Series 1909. Pp. 236. Price 5*s.* This is a companion volume to that on Gynecology just referred to, and is also a most practical and readable work. The pathology of pregnancy is dealt with fully in a section containing many useful and interesting facts. The section dealing with the toxæmia of pregnancy gives suggestions for further lines of research, the results of which would be invaluable. The compilers have taken considerable trouble in their chapter on operative obstetrics to point out the choice of operative interference suitable for each individual case, and in this way give the practitioner much more scope than has heretofore been at his immediate disposal. The section dealing with labour in the case of contracted pelvis is interesting and well written. Puerperal sepsis, the management of the puerperium, and the pathology of diseases affecting newborn infants form other good portions of the book. All references are given at the bottom of each page, and consequently there should be no difficulty in referring to the original works and papers from which the annotations are culled. At the end of paragraphs dealing with the more important subjects the editor gives his own experience in a concise and definite manner. Both the volumes under review are well printed and contain good indices.

A Text-book of Genito-urinary Diseases. By Dr. LEOPOLD CASPER, Professor in the University of Berlin. Translated and edited, with additions, by CHARLES W. BONNEY, B.L., M.D., Assistant Demonstrator in Anatomy, Jefferson Medical College, formerly Surgeon to the Southern Dispensary, Philadelphia. Second edition, revised and enlarged. With 230 illustrations and 24 full-page plates, of which eight are in colours. London: Rebman, Limited. 1909. Pp. 645. Price 21*s.* net.—In reviewing the first edition of this English translation of Professor Casper's work we expressed our high opinion of the translation and the probability that the book would prove useful to the student. The fact that only two and a half years have elapsed since the first edition appeared demonstrates clearly the appreciation which the book has received at the hands of the medical public. We are glad to see this second edition, and once more have to commend the translator for the additions he has made to the original volume.

The revision of the chapter on Prostatic Hypertrophy has been carried out by Professor Casper himself. As to the etiology of this condition he expresses complete ignorance, but refutes all the ordinary theories which have been advanced to explain it. As to the radical treatment, Professor Casper expresses himself in favour of the suprapubic route for the majority of cases; in his own clinique it is the operation of choice, notwithstanding the slightly higher mortality which statistics show. He prefers the perineal route when the gland is hard and fibrous and projects but little into the bladder.

JOURNALS AND MAGAZINES.

Bulletin de l'Office International d'Hygiène Publique.—We wish to draw the attention of our readers to this publication, now a year old, which presents features of interest to all sanitarians. It has successfully fulfilled the responsible position of official mouthpiece to the permanent International Office of Hygiene established through the medium of the conferences held from time to time by the representatives of the Governments of many both great and small Powers. How all this came about has been fully described in our pages,[1] and we have reviewed the contents of the first four numbers of the *Bulletin.* Since then the interest of the publication has been well maintained: it contains now not merely official information, but reviews of recent publications and reports concerning various sanitary questions are added. The official part includes, among other things, a catalogue of places where cases of plague or cholera have occurred, and the text of new sanitary laws and international treaties and agreements is given. For instance, a recent Act enforcing general regulations in Tunis in regard to returning pilgrims is included, as are the new regulations issued by the Government of the United States of America to facilitate the prompt landing or transhipment of fruit coming notably from South American ports where there are cases of yellow fever. The crews of such ships are not to handle the fruit. Sets of men are to be kept to work on ships coming from ports where there is yellow fever, and these men must undergo a quarantine of six days before they are allowed to circulate freely outside the docks. By these means it is hoped that perishable goods such as fruits will not be contaminated. The *Bulletin* also gives easy access to documents that are not, as a rule, ready at hand. Thus, for instance, the October number announces that the Commonwealth of Australia joins the international arrangement for the establishment of the International Office of Hygiene, according to the conditions laid down at Rome on Dec. 9th, 1907. This is followed by the full text of the international sanitary convention between Argentine, Brazil, Paraguay, and Uruguay. Then there are the English and the Scotch regulations issued on Sept. 9th and 13th, 1907, relating to ships arriving from foreign ports with cases of cholera, yellow fever, or plague on board. Such documents in their original form take up much space and could not be kept in a private library, but the 12 annual numbers of the *Bulletin* do not take up much room. In the non-official part of the *Bulletin* there is much useful information based on official documents. Thus, we are given some account of the regulations issued in various parts of the United States of America, the District of Columbia, for example, for the sanitary control of the milk-supply. The licensing of the farms and of the tradesmen or distributers of the milk follows upon a thorough system of inspection, the instruction to the inspectors being to ask as few questions as possible and to see everything for themselves. The inspectors carry outline drawings of cows on which they note any characteristic marks or external symptoms of disease, so that the cow, if passed on to another farmer, can be readily recognised. The New York Board of Health has from time to time increased the number of its dairy inspectors, but in 1908 there were only 27 inspectors and no less than 40,000 farms from which milk might be obtained for the city supply. On the other hand, when these inspectors find milk obviously adulterated they are authorised to seize and pour it down the nearest sewer without any legal procedure. Such summary justice has, doubtless, a wholesome effect and saves much trouble and time, only if the inspectors were not thoroughly trustworthy it might lead to some gross abuse. The *Bulletin* has a good deal to say about abattoirs, especially from the financial aspects of the problem. What, for instance, should be spent for a rural centre where the population does not exceed 5000 people? Though the revenue must of necessity be small, the sanitary requirements may not decrease in proportion. Then when is an abattoir sufficiently large to justify the addition of cold storage? Both the Belgian and the Dutch Governments have organised competitions with a view of obtaining replies to such questions, and we have here some of the plans that were submitted, and the estimated cost for small abattoirs we learn therefrom varies from £800 to £1200. The plan in such a case includes compartments in which all the usual preparations of the foodstuffs can take place, in spite of the limited size of the abattoir required by a small population. The *Bulletin* also contains much material concerning water-supply, its filtration and treatment with ozone, drainage, and so on. Reports on these matters are given and experimental work is described. But descriptions only are given, not criticisms. No opinion is expressed, though there may be a quotation of what someone has said. The publication is quite neutral, as, indeed, it is bound to be, but it supplies the starting point for many investigations and criticisms. Above all, it keeps the reader well informed as to what is going on in regard to public health questions in all parts of the world. The annual subscription is only 10 francs, postage included. The *Bulletin* is issued from the Office International d'Hygiène Publique, 195, Boulevard Saint-Germain, Paris.

The Medical Chronicle.—In the January number Dr. A. T. Wilkinson writes on Cirrhosis of the Liver; he lays stress on the importance of tympanites as an early sign of this disease and calls attention to the different forms of cerebral disturbance met with in it. Dr. J. Barnes Burt discusses the etiology of Heberden's nodes, which he attributes to increased pressure on the posterior margins of the joints resulting from weakening of the ligaments.

The Dublin Journal of Medical Science.—The first issue of this magazine for 1910 opens with an address by Professor W. H. Thompson on the Physiology of the Pylorus, in which he calls attention to recent researches tending to show a difference in the rate at which different kinds of foodstuffs pass out of the stomach and to the influence of conditions in the duodenum in producing closure of this orifice and of those in the stomach in causing its relaxation. Mr. Arthur H. Benson writes on Trachoma and notes that certain microscopical bodies of a protozoal nature are now "on their trial" as the causal agents of this malady. These bodies, discovered by Provazek, seem to multiply within the cells and to cause their destruction, subsequently escaping into the tissues.

West London Medical Journal.—In the January number of this journal is published an interesting paper by Mr. Hugh Wansey Bayly on the Laboratory Diagnosis of Syphilis, in which are discussed the technique of the Wassermann reaction and that of examination for the spirochæta pallida in the dark field—inaccurately if frequently called the ultra-microscope. Mr. N. Bishop Harman writes on Excision of the Lacrymal Sac, a procedure which may be necessary for the cure of chronic mucocele, and explains the method of procedure which he adopts ; and Mr. J. G. Pardoe advocates a wise conservatism in urinary surgery, noting the harm that is done by promiscuous prostatectomy and the disappointing results of this operation for cancer of the gland. On the other hand, he thinks that undue conservatism seems to prevail in diagnostic procedures, where the need for the minutest possible examination is urgent. Mr. Keetley's historical notes on the West London Hospital and those connected with it, of which a further instalment is still to come, makes a sad appearance after the talented surgeon's death.

---

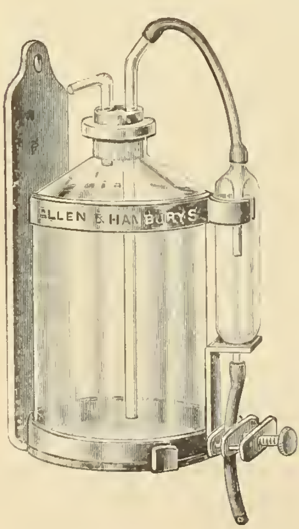
[1] See THE LANCET of July 9th, 1904, p. 111, and of July 10th, 1909, p. 100, among many references.

The Midland Medical Journal.—This journal appears to like its contributors to remain anonymous, and there is much to be said for the method. An unsigned original article in the January issue deals with the hygiene of the body in the matter of underclothing, and strongly advocates the use of linen for this purpose, as against the advice usually given in favour of wool. As a matter of fact, both have their distinct indications. A report on the proceedings at the meeting of branch representatives of the British Medical Association recently held at Belfast is given by the representative of the local branch.

New Inventions.

AN APPARATUS FOR APPLYING CONTINUOUS IRRIGATION WITH HYDROGEN PEROXIDE.

THE apparatus illustrated in the figure has been devised to deliver peroxide of hydrogen in a slow, steady stream into septic sinuses or septic cavities. It comprises a reservoir, a tube to indicate the rate of flow, and a clamp to regulate it. The apparatus is placed some two or three feet above the level of the patient and the delivery tube leads the peroxide to the foot of the sinus or cavity to which it is being applied. It has been found most suitable to dilute the peroxide to "5 volumes." With the solution running at the rate of 10 to 20 drops per minute, 6 ounces should be sufficient to irrigate the average sinus for four hours—say, two in the morning and two in the afternoon. It is important that the tube should lie at the deepest part of the sinus or abscess cavity, to ensure the whole surface coming in contact with the peroxide. The mouth of the wound may with advantage be kept open by a short piece of wide drainage tube, and covered with some absorbent dressing such as gauze or cellulose. The tube may be fixed in position by adhesive strapping. This treatment has been used in some 30 cases, chiefly appendix abscesses, but also in empyema, tuberculous sinuses in soft tissues and in bones, chronic mastoiditis, &c. The results were very satisfactory, particularly in cases of appendix abscess. In several cases after two or three applications the abscess cavity has become clean, ceased discharging, and healing has taken place in a week or ten days. In a case of large parotid abscess, which contained a quantity of foul-smelling pus, due to B. coli, ordinary drainage and irrigation were employed through two incisions for several days with slight improvement. Continuous irrigation with peroxide was then employed, and in five days only dry dressings were needed, there being no discharge. One or two cases have been disappointing, for although at first there was rapid improvement the sinuses refused to heal. In these the peroxide was discontinued after a week and dry gauze plugs were inserted ; healing then gradually took place. Septic superficial wounds have also shown rapid improvement under continuous peroxide irrigation. If used economically the expense of the hydrogen peroxide is not great and is justified by the more rapid recovery.



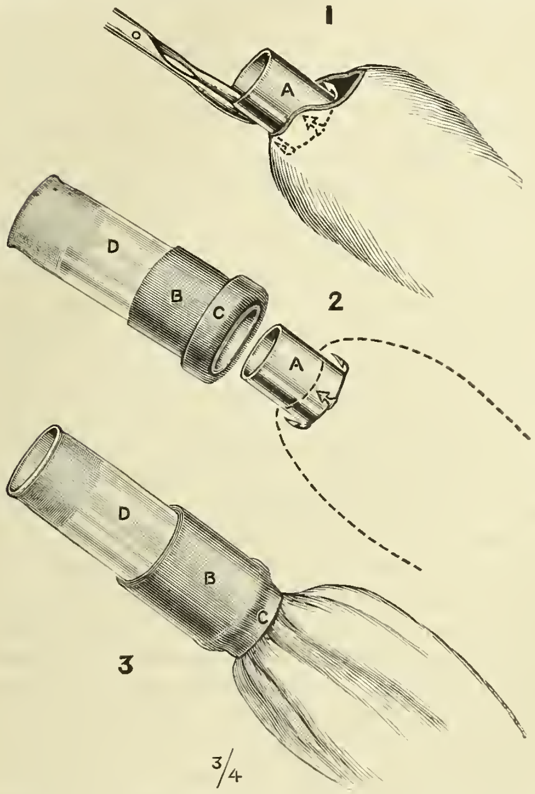
The apparatus is made for me by Messrs. Allen and Hanburys, Limited.

R. DOUGLAS LAURIE, M.B. Edin.,
House Surgeon, Royal Hants County Hospital, Winchester.

A SIMPLE METHOD OF DRAINING THE GALL-BLADDER.

THE effectual drainage of the gall-bladder after cholecystotomy and certain other operations is a matter of considerable interest to the surgeon and, incidentally also, to the patient. The surgeon is anxious to convey the contents of the gall-bladder into a suitable receptacle without risk of extravasation into the abdominal cavity or contamination of the abdominal wound. The patient also is saved considerable discomfort if the large amount of bile and mucus that is often secreted after these operations can be conveyed away without soaking into the dressings. For some time it has been the custom to tie a stout rubber or gum-elastic tube firmly into the opening in the gall-bladder by means of a purse-string suture. The drawback to this method is that it is difficult to tie a suture round a rubber tube sufficiently tightly to prevent the latter slipping out without partially occluding its lumen and thus diminishing its usefulness. If, on the other hand, a flanged glass tube be used, there may be some difficulty in removing it, especially in fat patients. In some cases, also, the use of a ligature to tie in the tube may be detrimental, as the suture may become the seat of fresh gall-stones.

Mr. C. A. Hoefftcke, of 21, Woodstock-street, Oxford-street, W., has made for me a very useful little apparatus which is designed to overcome all these objections and has proved very satisfactory in my hands. It is illustrated herewith. A small metal tube (A), which is seen most clearly in Fig. 2, is armed with four little spikes sufficiently sharp to engage easily in the mucous membrane of the gall-bladder. Fig. 1 shows the tube A being inserted into the opening in the fundus of the gall-bladder. It will be seen that the opening is larger than the circumference of the tube but this is of no consequence, as the angle of the incision seen in the figure is easily caught up on the disengaged hook and secured. Fig. 2 shows the metal tube A in position inside the gall-bladder the outline of which is represented by the dotted line. It is held there by the fingers of one hand much in the way that each half of a Murphy's button is held in the bowel when the two portions are being applied. While it is held in this position the drainage portion of the apparatus is applied to it. This consists of a glass tube D, one end of which is just large enough to fit comfortably over the metal tube, but not over the little hooks projecting from it. Over this end is applied a piece of strong rubber tubing B of slightly smaller diameter than the glass tube itself. The rubber has therefore to be stretched in order to get it over the glass tube, and about a quarter of an inch is left projecting beyond the end of the latter, as is shown in C, Fig. 3. Before the two halves of the apparatus are joined together, the portion C is turned back upon itself, as is shown in Fig. 2. The glass tube D is then passed down over the metal tube A until its edge is arrested against the sharp metal points impaling the wall of the gall-bladder. The two tubes are then held in position with the thumb and forefinger of the one hand, whilst with the other the cuff C of the rubber tube is turned down again. Owing to its being of a smaller diameter than the glass tube, this contracts and gives rise to the appearance shown in Fig. 3. The rubber keeps the two tubes firmly applied to one another and makes a water-tight joint between them, so that the contents of the gall-bladder escape through the tube without contaminating the wound. The free end of the tube is slightly tapered so that a suitable drainage-tube can be applied to it in order to carry the bile into a convenient receptacle. The elastic pressure of the rubber brings about gradual destruction of that portion of the gall-bladder wall with which it is in contact and the tube becomes loose within a period varying from three to seven days. The apparatus has proved very successful in my hands as it acts as a water-tight drain, comes out spontaneously later on, and does not leave behind any foreign body to form the nucleus of fresh calculi. It is worth remarking that, as the proper working of the instrument depends upon the elastic pressure of the rubber, the glass and rubber portions should be kept in fluid and in the dark to prevent deterioration, and the life of the rubber should, of course, be tested on each occasion before its use is contemplated. This latter part of the apparatus—i.e., the glass and rubber tube—is identical with that made and patented by C. A. Hoefftcke, Limited, for use in establishing an artificial anus.



F. F. BURGHARD, M.S. Lond., F.R.C.S. Eng.,
Surgeon to King's College Hospital and Senior Surgeon to the Children's Hospital, Paddington Green.
Harley-street, W.

MEDICINE AND THE LAW.

Butter Adulteration and the Sale of Margarine as Butter.

AT the Tower Bridge police-court recently two defendants were summoned for selling butter containing added water. One was fined 10*s.* with 15*s.* costs, and the other successfully defended himself by proving a warranty from the person from whom he purchased. On the same day two other defendants were convicted of selling margarine as butter, one being fined 10*s.* with 10*s.* 6*d.* costs, and the other 40*s.* with 17*s.* costs. The defence in the first case, offered evidently on behalf of a dealer in a very small way of business, was that "between the lights" she made a mistake and gave margarine when asked for butter. Possibly the story was accepted, as the penalty inflicted was slight. In the other a serious charge of entrapping shopkeepers was suggested by the defence, and the defendant in the witness-box stated that he was asked for shilling butter and supplied it, but that then the agent of the borough council who purchased it complained that it was rancid, and was served with margarine, the wrapper distinguishing it as such being omitted at her special request. It was argued that good palatable butter could not be purchased at 1*s.* per pound, and that most buyers preferred to have margarine, although they objected to its being labelled as such. The answer to such defences would appear to be that those who purchase are entitled to have what they ask for, and that the official who invited the sale of margarine intending to give an untrue account of the transaction in the witness-box would run a very grave risk with little or nothing to gain by so doing. It might be added that whatever may be the relative prices and merits of margarine and the cheaper varieties of butter the selling of the former for the latter is, speaking generally, the substitution of a cheaper for a dearer article to the profit of the vendor. The substitution also is apparently in all instances that which was complained of by the local authority in the two cases referred to. The "accident" of selling butter for margarine never takes place, or the buyers do not complain of it, as we might expect them to do if their preference for margarine were as strong as was suggested at the Tower Bridge police court.

Burning Accident and the Children Act.

Mr. Wynne Baxter held an inquest recently at the London Hospital upon the body of the three-year-old son of a Whitechapel stickmaker. The mother had left the child in a chair in her room when she went out to shop, and returned two hours later, according to a neighbour's evidence, to find him lying on the floor, so severely burnt that he was dead when he reached the London Hospital. According to the mother her absence lasted for a quarter of an hour only. The jury, however, in returning a verdict of "Accidental death," asked that she and her husband should be severely censured for their neglect. The case is referred to because it is one of those provided for in the Children Act, 1908, which makes it an offence, punishable by fine, to allow a child under the age of 7 years "to be in any room containing an open firegrate not sufficiently protected to guard against the risk of the child being burnt or scalded without reasonable precautions against that risk," if by reason of such conduct the child is killed or suffers serious injury. This section does not prevent proceedings being taken by indictment for an indictable offence, such as manslaughter, and the coroner called attention at the inquest to the Act and to the serious position in which the mother had placed herself. She was apparently quite aware of the provisions of the new Act at the time when she left her child in the room, and this in spite of the fact that she was a Pole who had the evidence, which was given in English, translated to her, for the neighbour already mentioned declared that on his return from carrying the child to the hospital he found that a guard which had not been there before had been placed before the fire. This, he stated, had been borrowed for the purpose from the caretaker of the house. The father deposed that his earnings were between 15*s.* and 18*s.* a week, of which he paid 6*s.* 6*d.* for rent, and that he had a family of five children. The mother was said to have the appearance of being half starved. It will be seen that in a case of this kind when the law is brought into force owing to the death of a child it is probable that no legal proceedings under the Act will follow on account of the commiseration felt for a bereaved father or mother of the class described. At the same time it must be remembered that very little ingenuity should enable a working man to contrive something which at most would cost him only a few pence, and which would serve as a barrier between his young child and an open fireplace, while if proceedings are taken only in exceptional circumstances the Act will run some risk of becoming wholly ineffective as a protection to those unable to protect themselves. The Bill introduced by Sir T. A. Bramsdon in the House of Commons in 1907 to provide against overlying and against the accidental burning of children made the absence of an efficient fireguard evidence of criminal neglect, unless "the contrary" appeared, on the part of parents and others having the care of children. The Government Act which we have quoted above refers more definitely to "reasonable precautions" which conceivably may be meant to suggest other measures, such as tying the child to something. Any confinement of this kind would have to be resorted to with care and for a shorter time than the two hours referred to above, or it might prove not much less dangerous than an open fire.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 5, 1910.

Is Sleeping Sickness Incurable?

IN THE LANCET of Jan. 22nd, we published an abstract of the recent official report upon sleeping sickness in Uganda by Sir H. HESKETH BELL, in which that able administrator gives a straightforward account of his views on the disease and on the measures adopted for its suppression in the Protectorate. Towards the conclusion of his report he expresses himself in somewhat pessimistic terms on the subject of the cure of the malady. It must be admitted that the high hopes which were entertained respecting atoxyl and other remedies, when they were first introduced, have not been realised, and this perhaps has been partly due to the indiscriminate treatment by these drugs of all cases, no matter in what stage of the disease they happened to present themselves. As in some other diseases so in sleeping sickness, if cure is to be expected, treatment must be begun before the malady has made much progress. While certain writers doubt if there are any really permanent cures, others claim to have effected a cure in the patients who came under treatment in the first stage of the illness. At the present time investigations as to the action of remedies proposed as cures for trypanosomiasis in man and animals are being carried out by a number of well-skilled scientific workers. As evidence of this we may mention that in the current Bulletin, No. 13, of the Sleeping Sickness Bureau there are recorded a number of observations and experiments in the treatment of trypanosome infections. Among others to which attention may be drawn is the report of the Portuguese Sleeping Sickness Commission which visited the island of Principe, in the Bight of Biafra, off the West Coast of Africa. Here cases of the disease were treated for a period extending over seven or eight months with atoxyl given hypodermically, by injection into the spinal canal, or by the mouth. This drug was in some instances combined with afridol-violet, perchloride of mercury, or trisulphide of arsenic. The report states that in patients treated by hypodermic injections (48 hours' interval) of from 0·5 gramme to 0·6 gramme of atoxyl every 10 or 15 days the trypanosomes disappeared completely and definitively, and in those cases which had been thus treated in the first stage of the disease lumbar puncture, performed before the departure of the Commission from the island, showed that the cerebro-spinal fluid remained free from the parasites. On the other hand, in those treated in the later stages of the malady the trypanosomes persisted in the cerebro-spinal fluid. The results obtained by injecting atoxyl into the spinal canal, or when administered by the mouth, were unsatisfactory. As regards substituting other drugs for atoxyl, or combining it with other preparations, the Commission reports that it did not see any advantage in substitutes for atoxyl or in its combination with other remedial agents, a view which is altogether in opposition to that held by the majority of authorities on the treatment of sleeping sickness.

Mention is also made in the same publication of the Sleeping Sickness Bureau of a paper by Professor EHRLICH on the chemo-therapy of infectious diseases, in which he discusses two methods of treatment—viz., (1) treatment by stages, that is, as is usually carried out, or (2) *therapia magna sterilisans.* In the latter method the parasites are killed in the course of one or two days. Commenting on this Dr. A. W. G. BAGSHAWE, the editor of the Bulletin, remarks that "the principle of giving the remedy when trypanosomes are numerous in the blood may be an important one." He adds: "The usual results with atoxyl are so unsatisfactory that it would be quite justifiable to treat several cases on those lines, not giving the drug for the first time until many trypanosomes were seen in the blood, and withholding it till their reappearance." BREINL and NIERENSTEIN contribute an article on their repetition of the work of EHRLICH and others in treating experimental animals such as dogs, donkeys, and horses with arsenophenylglycin. As a result they formed the opinion that this drug is superior to atoxyl, but that the chances of success diminish as the weight of the animal increases—i.e., smaller animals were cured, while larger animals were not. Arsenophenylglycin, it may be added, is regarded by some as the most promising of all the arsenicals as a remedy for trypanosome infections. EHRLICH believes that to get a sterilising effect from the drug it is not necessary to have all the parasites killed; it is enough if the drug acts on that part of the trypanosome which is concerned with multiplication, so that the formation of new individuals ceases. Arsenophenylglycin is supposed to act in this way. The combination of atoxyl with tartar emetic, while regarded by the French observers, G. MARTIN, LEBOEUF, and RINGENBACH, as capable of giving excellent results in early cases, does not succeed in staying the advance of sleeping sickness in those who have reached the second stage. Reference is also made in the Bulletin to the experience of Colonel F. J. LAMBKIN, R.A.M.C., in using for syphilis an atoxylate of mercury, an account of which was published in THE LANCET of Jan. 1st of this year. Suggestion is made that this compound should have a trial in the treatment of sleeping sickness. In this connexion we draw the attention of our readers to a letter in THE LANCET of Jan. 22nd in which Mr. GREEFF, of the firm of German chemists who manufacture the preparation, corrects the formula previously given for atoxylate of mercury. VAN SOMEREN has for some time advocated the administration of soamin and mercury either on the same day or in the same injection, and he regards the method as the best we have at present. Other experts, however, do not look upon it with so much favour.

The drugs to which we have briefly made allusion above, and of which mention occurs in different connexions in the current Bulletin of the Sleeping Sickness Bureau, do not exhaust by any means the list of remedies which have been put forward for the cure of trypanosomiasis; others, it is well known, are being tried and tested by competent workers with more or less prospect of success. While some authorities at the present moment doubt if any real permanent cures of this disease have been brought about by drugs, other experts maintain that they have effected a number of cures by employment of remedies in the early stages of the malady. It is obvious that it is a difficult matter to establish the fact of a permanent cure of sleeping sickness, since the tendency is for the disease to recur after a shorter or longer interval of apparent freedom from trypanosomes in the system. Sufficient, however, has been said to show that although as yet it cannot be asserted that a specific remedy has been found for sleeping sickness, yet the search for such a cure is being carried on diligently by a number of highly skilled scientific investigators, some at least of whom are not without hope that a sure and safe remedy will at last be found for this formidable malady. The last word, therefore, has not yet been spoken on the subject, and in the circumstances it is unnecessary to conclude that sleeping sickness cannot be cured, at least in its earlier stages.

◆

The Actions of Pituitary Extracts.

RECENT researches have tended to throw some light upon the functions of the pituitary body, and although there are still many problems awaiting solution in this regard, yet it is of interest to review some of the clearly important results obtained, the more so that extracts of this body promise to be of practical value not inferior to that of other glandular extracts. Dr. ARTHUR DELILLE,[1] who has devoted considerable attention to some of the effects of opotherapy, has published an important monograph on the subject of the pituitary body, in which he gives an interesting account of the structure and functions of this organ, reviewing critically the work of previous investigators, giving an ample bibliography, and recording the results of his own studies, which comprise both experimental and clinical observations carried out in collaboration with Professor L. RÉNON. It is well known that the pituitary body consists of two lobes—an anterior of glandular structure and a posterior of nervous organisation. These parts own a different embryological origin, the former being derived from a pharyngeal diverticulum, the latter from a depression from the embryonic mid-brain. The anterior lobe in some animals shows a double structure, although the two parts are not sharply marked off in man—the anterior or glandular lobe proper and the posterior or infundibular lobe. The cells of the glandular part are of several kinds and possess different staining affinities, the most important being cells which stain badly or chromophobe cells and others which are chromophile, the latter being either eosinophile or basophile. The products of secretion visible microscopically consist of two substances—one fatty, the other colloid—analogous to the colloid substance found in the vesicles of the thyroid body. The colloid substance can be seen in the interior of the cells, in the connective tissue, the vessels, and the vesicles. This substance is insoluble in water, alcohol, and ether, and does not yield gelatin on boiling. The process of secretion has been studied histologically, and although there is not as yet unanimity of opinion the chromophobe cells are generally regarded as in the resting or exhausted state, and various stages of activity are recognised, characterised by the presence of eosinophile or basophile granulations. The colloid substance elaborated as the result of the glandular activity passes into the capillaries or collects in the centre of the glandular tubules, and the cells return to the chromophobe condition. These results are based on the observations of M. P. E. LANNOIS and M. P. THAON.

Histological observations thus seem to indicate that the anterior lobe is the active part of the pituitary body, the posterior being regarded by some observers merely as a vestigial structure; but physiological experiments seem in accord in demonstrating that the extracts from the anterior lobe are for the most part inactive, while those made from the posterior lobe possess very active properties. It is striking to compare these facts with those obtained in regard to the suprarenals. In both the structure is formed of two parts, histologically and embryologically distinct; in both the part histologically glandular in appearance yields an inactive extract, whereas the other yields substances with marked effects upon the cardio-vascular system. These effects in the case of the pituitary are in brief a rise of arterial pressure, with increased force and diminished rate of the cardiac beat. The rise is due to vaso-constriction and is relatively short in duration in the nasal mucous membrane, more prolonged in the kidney, and is very persistent in the case of the thyroid body. In the kidney it is succeeded by a secondary vaso-dilatation which reaches its maximum when the mean arterial blood-pressure comes to its original value. This vascular effect is associated with a marked diuretic action which was investigated by MAGNUS and SCHÄFER and confirmed by SCHÄFER and HERRING.[2] Pituitary extracts appear to exert an action upon muscular tissues analogous to that of suprarenal extract, but the results obtained so far have not been absolutely convincing. They also stimulate metabolism and exert an influence upon the excretion of nitrogen, calcium, and phosphorus; but in this respect also further observations are required, since the observations of Mr. JOHN MALCOLM[3] seem to suggest that dried extracts exert different effects to those of the fresh ones. Extract of the whole pituitary produces hypersecretion of the pituitary itself, going on to diminished function if the doses are too strong or are administered for too long periods, diminished activity of the thyroid, hypertrophy of the suprarenals, going on to diminished activity if too prolonged, and slight congestion of the kidneys. Extracts of the posterior lobe only give rise to identical results, while those of the anterior lobe cause a mild over-activity of the pituitary and may even lead to hyperthyroidism. The degree of these effects varies with the methods of administration. It is most marked on intravenous injection, less with intraperitoneal or subcutaneous administration, and less still on ingestion. It is probable that the pituitary exerts an antitoxic action, but this has not been conclusively established. The pituitary body generally hypertrophies after thyroidectomy, parathyroidectomy, ablation of the suprarenals, and after castration. This hypertrophy is due to a toxic reaction and to disturbance of the interglandular equilibrium. Removal of the pituitary leads to prostration, apathy, increasing muscular weakness and tremor, dyspnœa, anorexia, and progressive emaciation, leading to a fatal cachexia. Insufficiency of the pituitary body produced by the administration of a cytotoxic serum for that structure has been studied by M. F. MASAY, who found emaciation from muscular wasting and disappearance of the panniculus adiposus, great muscular weakness, a plantigrade method of progression, and some modifications in the skeleton. Dr. DELILLE also outlines the symptoms which he regards as indicating excessive action of the pituitary. They are high arterial tension, polyuria, glycosuria, disturbances of nutrition, emaciation in some cases, obesity in others, hypertrophic processes leading to giantism or acromegaly, certain psychical phenomena, somnolence, genital and frequently thyroid insufficiency. He maintains, however, that pituitary deficiency is usually accompanied by symptoms due to other glandular disturbances.

---

[1] L'Hypophyse et la Médication Hypophysaire, Étude Experimentale et Clinique. Par M. le Docteur Arthur Delille. Paris: G. Steinheil. 1909. Pp. 336. Price Fr.6.

[2] THE LANCET, Feb. 2nd. 1907, p. 304.

[3] Journal of Physiology, vol. xxx., 1904, p. 270.

A substance of such importance in the animal economy was sure to be extensively tried clinically, and Dr. DELILLE gives very full references to the recorded cases, adding others of his own. In general he recommends it in cases where it is desired to raise blood pressure, lessen the rate of the pulse, produce diuresis, suppress painful sensations of heat and profuse perspirations, improve the appetite and capacity for sleep, combat asthenia, and exert a stimulating effect upon nutrition. He advises that it should not be given when the blood pressure is high, and that it should not be combined with suprarenal extract. He advises the use of an extract of the whole gland, since it is nearly as active as that of the posterior lobe only and being more easy to prepare is less costly. He states that the daily dose administered for therapeutic purposes should not exceed a quantity corresponding to half a fresh gland of the ox, that the patient should be carefully observed, and that the arterial pressure should be taken as a guide to the necessity for modifying the dose given. Dr. DELILLE gives details of its use in a considerable number of different conditions, including typhoid fever, tuberculosis, certain cardiopathies, Graves's disease, paralysis agitans, and some defects of growth. He is, perhaps, over-sanguine as to its utility, but he brings forth evidence sufficient to warrant a trial of this substance in such conditions as Graves's disease, paralysis agitans, and some conditions of physical and mental backwardness, the more so in that he claims that the extract is practically without toxic effects in ordinary doses. We have read Dr. DELILLE'S book with great interest, and it affords a valuable review of the present state of our knowledge in regard to one of the most obscure of the organs of the body.

Annual Report of the Medical Department of the Board of Education.

WE make no excuse for reverting again to the issue of the first annual report of the chief medical officer of the Board of Education, for the matter is one of national importance. We have already considered the circumstances which led to the institution by law of a medical inspection of the children in our rate-supported schools and approved of the organisation of inspection which has followed upon appreciation of the fact that the hygiene of school cannot be divorced from the hygiene of home. To-day we propose to look a little closer into the details of the report and see how far the working of the Act is carrying out the ideals of the numerous clear-sighted and thoughtful people, medical and lay, who have been saying for many years that some such measure is absolutely needed. The report shows that a large number of medical men through the agency of the medical inspection of school children, are being brought into touch with the Board of Education, which now has what the future will probably prove to be an embryonic medical department, comprising a chief medical officer and four medical officers. It seems, indeed, as if before many years have passed a considerable proportion of the medical men in this country will have some official relation with the Home Office, the Local Government Board, or the Board of Education. The report relates mainly to the year 1908, and we have already dealt in our columns, when noticing the reports of local school medical officers, with many of the points with which it deals. But it was obviously impracticable to issue this, the first report, at an earlier date, and the volume, summarising as it does the experience of the whole country, contains much of interest which will make new reading to everyone, medical and lay. The history of the medical inspection of school children with which the report opens shows, like the history of most other movements of similar type, that years ago there were those who recognised the importance of such inspection, but whose voices carried only a little distance and whose efforts were soon forgotten, and in summarising the antecedent history of the movement we might well have alluded to JAMES WARE, who in dealing in 1811 with the eyesight of Chelsea children and of Oxford students, was to some extent anticipated by FRANK in 1780, and was followed by LORINSER in 1836, and by the classical researches of HERMANN COHN in 1866. But we were speaking in particular of the school hygiene movement in England, and in justice to the pioneers attention should be drawn to the fact that in several towns medical inspection was in operation some years before what may be called the national impulse.

As regards the number of medical men engaged in the school medical service we are told that there were in 1908 approximately 1084, and that 49 local authorities have appointed 68 lady medical officers, 8 of whom are school medical officers within the meaning of the code. In the matter of school nurses there were 292 employed in 1908, and of these 134 were whole-time officers, while the total number of children to be medically inspected in that year was estimated at 1,227,000 out of an average attendance of 5,291,449. The physical condition of the school children as actually revealed by medical inspection is, of course, the most important question of which the report treats, and in this particular the point which at once attracts notice is the need for more precise standards for comparison and the manner in which the personal equation factor makes itself felt in the statistics. It would obviously be unwise to attach any great significance to these first year's figures, and it is only when, after some years' work, sufficient data for drawing reliable averages have been accumulated, and more or less stable standards have been established, that we shall be able to assess the prevalence of the several defects. Perhaps the most difficult condition to standardise is that which comes under the head of "nutrition," but Dr. NEWMAN, although abstaining from any numerical expression as to the prevalence of insufficient nourishment, is able from the local annual reports to conclude that there is an important number of children (rising in poorer districts to a serious proportion) who in greater or less degree exhibit evidence of malnutrition. Somewhat similar criticism may be directed against statistics relative to cleanliness of the body, but it is possible to show from the earlier results both of Bradford and London that a marked increase in the percentage of clean children may be brought about by repeated inspection. The prevalence of ringworm seems to be still under-estimated, as in places where much activity prevails in searching out the cases the disease has been found to be more widespread than is generally believed. As to dental caries, the absence of a satisfactory standard again emphasises itself, but it is commonly found that from 20 to 40 per cent. of all children examined, with the exception of those in the babies' classes, have four or more teeth decayed, and the Bradford figures bring out the point that in the schools of the better-class districts 4·72 per cent. of the children have sound teeth, as compared with 7·62 per cent. in the very poor districts. The actual presence or absence of adenoids is in the majority of cases a matter of inference only, but on this basis it is estimated that from 8 to 10 per cent. of children have adenoids on admission. But the percentages for the several different areas raise the question whether this is not an understatement, since in the country districts the incidence rates range from 4·1 per cent. to 15·7 per cent. Defective vision is estimated to exist in about 10 per cent. of the children who were about to leave school, while some 5 per cent. of school children are thought to suffer from some defect of hearing.

One of the most interesting and puzzling sections in the report is that which deals with the difficult and at present obscure question of the prevalence of tuberculosis among school children, and the different percentages found amongst the children in different areas are probably best explained by differences of method and nomenclature. For instance, percentages of 0·49 of all forms of tuberculosis in Bedfordshire and of 5·16 in Worcestershire are difficult of explanation on any other basis. Similarly, taking phthisis alone in towns we find a percentage incidence of 0·098 in Leicester and 3·32 in Barnsley. The future may perhaps enable some sort of understanding to be arrived at amongst school medical officers as to what signs or symptoms are to be held to justify a positive diagnosis of pulmonary tuberculosis in children. As is well known, some French authorities claim to have detected this disease in a very large percentage of Paris school children, and it is possible that careful observations will show that this condition is far more common than is as yet believed. From these investigations we may learn something more than we know at present as to latent tuberculosis and as to the relation which pronounced tuberculosis in adults bears to conditions diagnosed as tuberculosis in child life.

As regards the action taken by local education authorities in respect of medical treatment there is not a great deal to add to what has been already said in THE LANCET during the past year, but Dr. NEWMAN, from the pinnacle of vantage which he occupies, is able to report that as a result of medical inspection "many thousands of school children in all parts of the country have been receiving medical and surgical treatment of which they have stood for some time in sore need, and still more widely there has been felt the 'pervading influence' of the school medical service both in the sphere of public health and in the sphere of education." During the code year ended July 31st, 1909, there were 37 authorities who were allowed to employ school nurses for purposes of treatment, the total expenditure upon such nurses having been £1800. As regards the gratuitous provision of spectacles, expenditure was sanctioned by 21 authorities, but only when it was quite clear that such provision could not otherwise be made. Contributions to hospitals have been sanctioned in eight instances, but, as Dr. NEWMAN observes, there has been with but few exceptions throughout the country an added burden of work thrown upon the voluntary hospitals. Only one fully-equipped school clinic has been sanctioned, and that at Bradford; but at Brighton, Reading, Abertillery, Southampton, and York (for ringworm only), arrangements as regards clinics have been made on a smaller scale, while at Cambridge private munificence has founded a dental clinic. In reference to cost, local education authorities will hear with satisfaction that at Bradford the establishment expenses amounted to only £220, and the maintenance expenses to only £378. The establishment expenses included £130 for an X-ray apparatus for ringworm. These scattered pieces of information serve to show, as do the statistical discrepancies to which we have alluded above, that time is required before the Act can play with definiteness the great part for which it is destined in our national development. We are as yet in the stages of collecting information and of experimenting in the best ways to make use of it. But let it be remembered that the act of collecting the information is lowering by perceptible gradations the evils into which inquiry is being made, while the various schemes for dealing with those evils are bearing good fruit already.

Annotations.

"Ne quid nimis."

ENGLISH URBAN MORTALITY IN 1909.

THE Registrar-General's returns continue to afford evidence of the improving sanitary condition of the population residing in the largest English towns. According to the returns for the 52 weeks ending on Jan. 1st it appears that the crude rate of mortality last year in the 76 largest English towns, having an estimated population little short of 16,500,000, did not exceed 14·7 per 1000, against 15·9, 15·4, and 14·9 in the same towns in 1906, 1907, and 1908. The death-rate last year in these towns was, indeed, lower than in any previous year on record, and was 0·8 per 1000 below the mean rate in the four preceding years 1905–08. In London, with an estimated population of nearly 5,000,000, the crude death-rate last year was only equal to 14·2 per 1000, against 15·1, 14·6, and 13·8 in the three preceding years. The death-rate in London last year thus very slightly exceeded the unprecedentedly low rate in 1908, but was 0·5 per 1000 below the mean rate in the four years 1905–08. One of the most satisfactory features of the constant decline of our urban mortality in recent years is the marked decrease in the fatality of epidemic disease. Small-pox, measles, scarlet fever, diphtheria, whooping-cough, "fever" (almost exclusively enteric), and diarrhœa have long been classed and specially dealt with in the Registrar-General's returns as the principal epidemic diseases. The death-rate from these epidemic diseases during last year in the 76 largest English towns did not exceed 1·42 per 1000, against 1·95, the mean rate in the five preceding years, 1904–08, in which the rate ranged from 2·49 in 1904 to 1·54 in 1907. In London the death-rate last year from these epidemic diseases was not higher than 1·31 per 1000, against a mean rate of 1·72 in the five preceding years. It is noteworthy that notwithstanding the excessive aggregation of poverty in London the death-rate both from all causes and from the principal epidemic diseases has in recent years been distinctly lower than the similar rates in the 75 other large English towns, having populations exceeding 50,000, thus affording conclusive evidence of efficient sanitary administration by the county and borough authorities of the metropolis. The markedly low death-rate during last year from the principal epidemic diseases in the largest English towns was in great measure due to the low summer temperature, with frequent and abundant rainfall, which caused an exceptionally small mortality from infantile diarrhœa. The death-rate attributed to diarrhœa in the 76 towns, including London, was lower in 1909 than in any recent year, and was considerably less than half the rate from this disease recorded in these towns in each of the three years, 1904–05–06. The returns for last year, however, also show a remarkable decline in the deaths referred to "fever," mainly enteric, the death-rate from which cause affords a trustworthy test of sanitary efficiency. The deaths referred to "fever" in the 76 English towns during last year did not exceed 954, against 1319, the average number in the five preceding years; and in London the number recorded was only 151, while the mean number in the five preceding years was 247. The death-rate from "fever" in London last year did not exceed 31·4 per 1,000,000 of the population, whereas it was equal to 69·2 per 1,000,000 in the 75 other large English towns. These figures afford further evidence of more efficient and successful sanitation in London than in the aggregate of the 75 large provincial towns. On the whole, the mortality statistics relating to our largest towns in 1909 provide legitimate general ground for congratulation to the sanitary authorities and medical officers of health upon whom rests the responsibility for their health condition and progress. If, however, this health progress is to be fully maintained it will be necessary for the ratepayers to show more active interest in public health administration and to bring public pressure to bear upon the sanitary authorities in those provincial towns, the mortality statistics of which still compare most unfavourably with those of the county of London.

CIGARETTE SMOKING IN THE ARMY.

Lieutenant-General Sir L. J. Oliphant, C.B., commanding the Northern Command, has just issued special orders prohibiting excessive cigarette smoking by young soldiers serving in his command, and has directed medical officers detecting cases of injury to health produced by cigarette smoking to draw the attention of commanding officers concerned with a view of prohibiting the use of cigarettes by the men in question for a specific period. Restriction of cigarette smoking amongst the rank and file of the army has only recently attracted the attention of some of our military commanders, foremost amongst whom we may mention the name of Field Marshal Lord Grenfell. This distinguished officer, while Commander-in-Chief of H.M. forces in Ireland, during his visits to military hospitals was struck by the harm that the increasing prevalence of cigarette smoking appeared to be doing to the health of the army, and alluded to it in general orders as not alone a military question but one of national importance. Lord Grenfell appealed to the Irish Command to give earnest thought to combat the pernicious habit of cigarette smoking, which, he thought, was gradually but greatly affecting the efficiency of the troops, and he directed all commanding officers to impress on those under their command the evils that invariably result from this excess. With a view of helping men to overcome the habit the Commander-in-Chief ordered that cigarette smoking was to be prohibited at certain times when, on the other hand, no similar restriction as regards pipe smoking would be made. For instance, the smoking of cigarettes was not to be permitted when men were on fatigues or under arms on any occasion, including field operations and manœuvres. There can be little doubt that excessive smoking of ready-made cigarettes is encouraged by their cheapness, and it may be to some extent responsible for cardiac affections. It is generally agreed that tobacco smoking has a toxic effect upon the heart, although this effect varies greatly in intensity in different individuals, and at the same time causes increased resistance to the blood stream by contracting the small arteries of the systemic circulation. The average British recruit is on enlistment younger and in poorer physical condition than the recruit of any other civilised army. He is very often an inveterate cigarette smoker and may have enlisted after a period of privation, not being in the best of condition to face even the present modified system of physical training. Recruits undergoing their first drills at the regimental depôt are very receptive; this is probably the most impressionable time of their service, and it is then that the first attempt might be made with some success to teach them to be moderate in cigarette smoking. Following on the same lines as Lord Grenfell's appeal it would be a good thing for the health of the army if all commanding officers were equally firm in drawing attention to the harm of over-indulgence in smoking. We may note that the officer commanding the 1st Seaforth Highlanders started a campaign some time back against cigarette smoking and directed in battalion orders that cigarettes should never be smoked by any officers or men of his regiment when on any duty whatsoever. The examples quoted are, we believe, more or less isolated, but they are valuable. Over-indulgence in smoking is harmful, and the ready-made cigarette, being cheap to buy and convenient to smoke, is an inducement to such over-indulgence. To smoke it entails but little sacrifice in money or trouble.

INTESTINAL PERFORATION IN ENTERIC FEVER SIMULATED BY PERFORATION OF A PYOSALPINX.

AT a meeting of the Société Médicale des Hôpitaux of Paris M. L. Galliard and M. Chaput have reported recently a case of enteric fever in which intestinal perforation was simulated by a rare complication—perforation of a pyosalpinx due to the typhoid bacillus. A woman, aged 30 years, was admitted into hospital on May 28th, 1909. For three weeks she had complained of pain in the back and lassitude, but had taken to bed only for four days. For some days there had been diarrhœa. On admission there were headache, stupor, furred tongue, a temperature of 101·8° F., and a rapid pulse. The spleen was slightly enlarged. The abdomen was tympanitic and there was gurgling in the right iliac fossa. Lenticular rose spots were present. Typhoid fever at the eighth day was diagnosed. The evening temperature was 103°. On the 29th the temperature ranged from 104° to 104·7°, and the serum test was positive. The case ran an ordinary course, and on June 12th the temperature had fallen to 99° and convalescence seemed to be imminent. But on the 13th the patient complained of abdominal pains and there was slight meteorism. On the night of the 15th there were great abdominal pain, nausea, and vomiting. When she was seen on the following morning the respiration was rapid, the eyes were sunken, and the features were drawn. The pulse was 160 and small and the temperature was 104·3°. No urine had been passed. The abdomen was not tympanitic and showed no region specially tender to palpation, no swelling, and no resistance even in the right iliac fossa. Vaginal examination revealed nothing abnormal. Intestinal perforation was suspected and laparotomy was performed under spinal anæsthesia induced by novocaine, as chloroform would not have been well borne. A little turbid fluid was found in the peritoneal cavity. The small intestine was examined throughout its whole length but no perforation could be discovered. There was only congestion of the lower part of the ileum. The cæcum and appendix were normal. On exploring the pelvis pus and a greatly enlarged right Fallopian tube were found. The left uterine appendages were sclerosed and surrounded by adhesions. The uterus and right appendages were removed. Lavage of the peritoneum was not performed, but only dry wiping. No arrangement for drainage was made as the large communication between the vagina and the peritoneal cavity ensured this. The patient's condition after the operation was good, the evening temperature being 101·6°. On the 23rd the sutures were removed from the abdominal wound. It had suppurated and its edges were gangrenous at the level of the muscular fibres. The evening temperature was 102°. The wound cicatrised without further incident and the patient left hospital in good general health at the end of July. Examination of the specimen removed showed a much enlarged Fallopian tube full of pus. On its posterior wall was a circular perforation with violaceous edges. There was no lesion of the uterus. The pus contained the typhoid bacillus in pure culture. M. Galliard and M. Chaput suggested that this unusual localisation of the typhoid bacillus was due to previous lesions of the Fallopian tube, which acted as a predisposing cause. The chronically inflamed condition of the left appendages and the adhesions rendered the conclusion probable that a similar condition had existed on the right side before infection with the typhoid bacillus. On admission the patient denied any previous illness, but when the question of operation was discussed at her bedside she feared that her uterine appendages might have to be removed.

THE LATE DR. EVAN THOMAS.

ONCE again the risks to which the profession is exposed in the carrying on of its work are exemplified in the death of Dr. Evan Thomas of Newbridge. He contracted septicæmia while doing a post-mortem examination on Jan. 8th, and died on Jan. 15th. He was educated at University College, Aberystwith, and University College, London, and held the M.D., B.S. Lond. as well as the diplomas of the Conjoint Board. He was formerly obstetric assistant to Dr. Herbert Spencer at University College and also held resident posts at Highgate Infirmary and Hanwell Asylum. He was a typical example of what the surgeon should be—thorough in his work and keen on it, very conscientious, and kind and sympathetic to his patients. He was a justice of the peace for the county of Monmouth. His remains were laid to rest at his birthplace, the village of St. Dogmaels, near Cardigan. We offer our sympathy to his widow and two children.

A FRENCH NAVAL SANATORIUM.

WHILE we are still hesitating how to deal with the tuberculous cases discharged from the Army and Navy the French Navy has opened a sanatorium at Brest for sailors and dockyard workmen. In that large harbour there is an island, Tréberon, which for some 200 years has been alternately a hospital and a quarantine station. It has a warm sunny exposure, sloping gently from its northern cliffs to its southern sandy shore. In May, 1909, Admiral Boué de Lapeyrère, the French Minister of Marine, then maritime prefect at Brest, was struck, when inspecting it, with the promise it gave of usefulness as a sanatorium, and directed that cases should be sent there from the naval hospital at Brest by way of experiment. Accordingly, in June, 23 cases, all with tubercle bacilli in their sputa, landed there under the care of Dr. Cazimian of the French Navy, who reports his experiences in the *Archives de Médecine Navale* for December, 1909, in a very interesting paper. He spent three months on the island; his staff was a steward, a good cook, and ten male nurses. The patients at most numbered 40 (64 passed through the sanatorium) and the principles of their treatment were fresh air, rest, and slight overfeeding. In the barrack-rooms of the old quarantine station each patient had at night 2500 cubic feet of air space, and all the windows were kept open on the side away from the wind. Then by day each man took the stretcher given him on his arrival and put it in a sheltered place, under a shed in wet weather or out among the trees when it was fine, and thereon lay down and rested for hours. These men had all come from treatment in the naval hospital, yet the added therapeutic influence of sanatorium treatment on the island produced marked improvement. Their weight generally went up steadily during the first fortnight; they lost their fever, sweats, and sleeplessness; they gained appetite and strength, and the pulmonary signs improved. Of 23 men who had left the island when the reporter was relieved, only four had gained no benefit, but they, when they had arrived, had each two or more lobes attacked; all the rest (19) were improved, and four are even reported cured. The sanatorium was only experimental, but it seems likely to be kept open at any rate through the winter. Dr. Cazimian points out that in the French navy the regulations provide, not for the cure of tuberculous cases, but for their immediate removal to prevent the infection of others in the service, greater risk being thereby entailed of the infection of the civil population who live in the crowded and inferior houses to which most of these invalids return. He very pertinently asks, When the statistics of the German insurance societies show the financial saving which results from sanatorium treatment, why should not the State in France save this money for itself? The departments of State disembarrass themselves of those, their servants, who are attacked by tubercle, and so transfer to the rates the uncounted cost of their care and treatment. If they were compelled to provide for all their tuberculous employees till cure or death, the cost in the end would be much the same to the country, but it would be borne, not by the rates, but by taxes, it would be from year to year very exactly noted, and the heavy loss by consumption would be better realised by the responsible Ministers, and a more serious endeavour for prevention would be awakened within the departments themselves.

THE EXHIBITION OF LIQUID EXTRACT OF MALE FERN.

Liquid extract of male fern is a well-established anthelmintic which usually produces the desired effect. There are at least two methods of exhibition which are almost equally good—namely, in capsule form or as an emulsion. It occasionally happens, however, that owing to a gastric affection the patient is unable to take the usual dose of the liquid extract and it is in such a case that a correspondent asks for our advice. He may either administer the drug in some bland form or substitute another remedy. The capsules containing the extract can be so coated as to render them insoluble in the gastric juice, so that they pass unchanged into the intestine. Three methods of attaining this object are practised in the case of pills and capsules generally, but the one which is probably the most suitable for male fern capsules consists in dipping them in solution of formaldehyde; this has the effect of hardening the capsules in such a manner that they resist the action of the gastric juice. Other methods are to coat the capsules with keratin or with salol, and the latter is more suitable for pills. Sometimes, however, it is preferable to discard the male fern treatment and to substitute tannate of pelletierine. This alkaloidal salt of pomegranate root bark, the dose of which varies from five to eight grains, may be given in a capsule or in a little syrup, or suspended in water; the patient should fast 12 hours before taking the dose, which should be followed in from one to two hours by an active purge, such as castor oil. The treatment of tapeworm has been dealt with in The Lancet in some detail in an article the main points of which it may be useful to recall. The general method of treatment recommended was as follows:—Prepare the patient by dieting; give purgative suitable for removing excess of mucus at bedtime, and if necessary at 7 o'clock next morning; let a dose of the vermifuge be taken at 9 A.M.; wash away the remains of this from the bowel, even if the worm has passed, by castor oil at 11 A.M., and look carefully for the head of the parasite so as to be able to give a certain opinion of the result of the treatment. Magnesium sulphate with tincture of jalap was recommended as a more suitable purgative than castor oil for administration before giving the vermifuge. If it is desired to administer liquid extract of male fern as an emulsion the following formula gives a good result: Extract. filicis liq. ʒi., mucilag. acaciæ ʒi., aq. cinnam. ad ℥i. Another equally good preparation may be made by using tincture of senega as the emulsifying agent. 10 minims of the tincture are made up to one drachm with water or cinnamon water in a measure glass, and one drachm of liquid extract of male fern is measured on the top of the mixture; the whole is then poured into a one-ounce phial and well shaken, and when properly mixed the bottle is filled with the water.

PANICS AND DRINKING BOUTS.

The late Allen Raine, in her novel "A Welsh Singer," described a picturesque form of panic occasionally prevalent in Wales. One of her characters, a shepherd boy, rushes bellowing into the farm kitchen complaining that the solitude of the mountains has, so to say, "got on his nerves." The novelist goes on to state that such seizures are well known among Welsh mountain people. Nor is this to be wondered at, for anyone who has experienced great solitude in desolate places, during a day's fishing or walking, will fully sympathise with those simple folk who are driven to relieve their sense of it by panic, flight, and screaming. An interesting question is raised by the occurrence of these seizures—to wit, Are primitive and healthy people given to attacks of "nerves" which suggest the phenomena of degeneracy? Or, if degeneracy and lack of mental equilibrium be ruled out of court, can such attacks be explained from the tribal point of view—from that of custom, etiquette, and habit? Again, are the vices of primitive peoples the result of nervous or mental instability or of custom and so forth? Dr. Tom A. Williams in a paper in the *New York Medical Journal* of April 24th, 1909, on "The Psychological Basis of Inebriety," traces drunken habits to errors of education, or to a man's desire to rise superior to a sense of depression occasioned by failure, trouble, fatigue, and so forth. But the drinking bouts of savages or primitive people can scarcely be traced to an intolerance of malaise or to their having been over-indulged or repressively educated by their mothers in early childhood. Certain peasants in the neighbourhood of Lough Mask resort at intervals to solitary islands where illicit stills are to be found. Once in the island, a most respectable and temperate man has been known to deliver himself over to a perfect orgy of intoxication, lasting day after day for about a fortnight. The bout once over, such a man has been often observed to return home to a life of humdrum sobriety and hard work. Here surely we have the relics of a tribal custom, at one time held in honour and still genially tolerated in the countryside. It is a question whether the drinking habits of our own poorer classes on pay-day are not also reminiscences of the tribal condition. The abnormal and irrational excitability of people at election times is another relic of a rudimentary state of society. An election fight, ending in broken heads, is not usually entered into by neurotic or merely vicious people, but it may very well be explained as a thrilling reminiscence of Viking or early Saxon manners which no amount of education can eradicate.

THE SYMPTOMATOLOGY AND FUNCTIONS OF THE OPTIC THALAMUS.

In the *Journal of the American Medical Association* of Dec. 18th, 1909, was an article from the pen of Dr. C. L. Dana of New York on the symptomatology of disease of the optic thalamus. The thalamic syndrome, to use a convenient expression, has been the subject of many studies in England, the Continent, and America, and in its typical form it is easy of recognition. On the sensory side there is constantly a defect of sensibility, consisting in a hemianæsthesia for touch, pain, and temperature, in varying degree, and a more pronounced loss of deep sensibility. With these changes is associated one of the most remarkable features of thalamic disease—namely, pain of central origin. It involves the arm and hand most, the leg and foot next, rarely the head; it is often very intense. It is usually different from ordinary kinds of pain, being a sort of burning discomfort, much more distressing apparently than sharp or aching pains, and often making the patient's life a burden. Astereognosis and ataxia may also occur on the affected side. From the motor standpoint there is hemiplegia, sometimes of a transient nature, and unaccompanied by contractures. The motor symptoms may be attributable to an accessory capsular lesion. In none of his cases did Dr. Dana observe the so-called paralysis of emotional expression and the explosive laughing or crying, attributed by many to disease of the thalamus. The association of choreic and athetoid movements with the thalamus must also be considered with reserve. In two instances Dr. Dana discovered that the blood pressure, tested with the Riva-Rocci apparatus, was lower on the affected side by from 5 to 10 millimetres—a difference which he failed to find in other hemiplegics who did not present symptoms of thalamic involvement. The modern view of the thalamus is that it is essentially an organ for the reception and distribution to the cortex of sensory impressions, though whether it forms a part of the primary sensory centres for other impressions than those of deep and superficial sensibility, among others those of vision and hearing, is undetermined. The thalamic syndrome varies somewhat according to the extent and location of the lesion. The vascular supply of the organ is from three different sources, and on account of its varied supply of small arteries hæmorrhages of the optic thalamus are commonly smaller than those of the corpus striatum.

THE INVESTIGATION OF NEW SOUTH AFRICAN DRUGS.

WE have already published two annotations [1] on the results obtained by Mr. John Maberly of Woodstock, Cape Colony, in the treatment of typhoid fever by means of certain principles obtained from the plant Monsonia biflora, to which he has collectively applied the name of entericin. We pointed out that these results seemed to warrant a more extended trial of this drug, and suggested that it would be useful to know the methods employed by Mr. Maberly in the separation of this substance from the plant. We have received a copy of the *Transvaal Medical Journal* for November, 1909, in which some further details are given. Mr. Maberly states that the principles obtained from Monsonia are of an indefinite chemical composition, and he describes some of them as belonging to the tannic and gallic acid series; the remainder make up entericin, consisting probably of two substances. Attempts to separate and purify these substances have, however, not given satisfactory results. One of them, to which the name of "tericin" was given and which was regarded as the most important, proved on purification to be useless, if not harmful. Mr. Maberly regrets his inability at present to continue his investigations, on the dual grounds of the expense involved and of the dearth of clinical material. He maintains that no really satisfactory research as to the value of new drugs can be successfully accomplished unless the chemical, clinical, and biological work necessary for the purpose is coördinated and carried out in one centre with adequate endowment. He urges that such a coördinated mechanism would obviate the necessity for "premature publication of partial investigations with the object of gathering further facts." He admits that his own work is of this character and doubts if satisfactory information of Monsonia or any other South African drugs which are worth investigating will be forthcoming until some such organised and subsidised inquiry has been established. It would certainly be an advantage if this could be done, and the investigation might afford valuable additions to our list of drugs. Meanwhile, we can only congratulate Mr. Maberly on his painstaking, though inconclusive, labours.

"SMOKE ESSENCE."

WE are told sometimes that when "things are not what they seem" that is a sign of a progressive age; antiquated methods have been supplanted by new and more scientific procedure. A case in point is seen in a rapid method of making hams, bacon, and certain fishes appear to be smoked by applying to them a fluid called "smoke essence." It may be that this application renders an article of food identical with that produced by the ordinary operation of smoking. Even that is very doubtful, but assuming that it does, is it straight dealing to call an article painted over with smoke essence "smoked"? We had occasion recently to examine a specimen of smoke essence in the laboratory, and the results of analysis were interesting. We found it to consist chiefly of creasote, aniline dye, and a salt of iron. The generally ubiquitous borax or boric acid appeared to be absent. The contention that such a mixture is harmless—and we are inclined to agree that the only doubtful ingredient present in this regard is the aniline colour—may be right, but that fact does not justify leading a consumer to suppose that a bloater, a tongue, a rasher of bacon or ham, treated by this simple process had been adequately cured by the operation well known as "smoking." There can be no question at all that the colour is added to complete the disguise, and we feel bound to admire the ingenuity of the inventor of a mixture who puts into it a salt of iron which is calculated to give a side of bacon an appearance of natural rustiness. It is a pity that such important matters as these affecting the purity of our food-supply were not strongly dealt with when the Departmental Committee on Food Preservatives and Colouring Matters issued its recommendations nearly ten years ago.

THE AMATEUR METEOROLOGIST.

THE amateur meteorologist must have found his study a somewhat disappointing one during the last month or so. If he has been bold enough to forecast the weather even only for 24 hours, basing his predictions on previous history and happenings, his faith must have been badly shaken, for the relationships between the barometer and the weather have been remarkably unconventional. In the northern latitude he is instructed that the barometer rises for a northerly wind, including north-west by the north to the eastward, for dry or less wet weather, for less wind, and so forth. It lately has seemed to be the rule that the glass has fallen not for Atlantic weather, as is usually the case, or a south-west wind, but for more or less wet weather with the wind in an easterly direction. Conversely, a rising glass has frequently preceded a strong south-west wind and fine dry weather. "The barometer falls," reads the weather guide, "for southerly wind, for wet weather, or stronger wind," but recent experience has often shown the reverse to be the case. These facts have led not a few people to wonder whether such things as comets, earthquakes, sun-spots, or even wireless telegraphy have had anything to do with turning the normal course of the weather in these islands. Some seriously adhere to the view that wireless telegraphy is a disturbing factor. One favourable word only can be said for this view—and that is, that the vagaries of recent weather are, after all, confined to a quite limited area. But the forces of wireless telegraphy are inconceivably small compared with the great natural agencies. It is pretty certain that if cosmic influences were at work they would effect a very profound disturbance over the surface of the whole globe, and there is no evidence that the weather has taken a topsy-turvy turn everywhere. The study, in fact, of meteorology is made all the more difficult by events which may be cosmically tiny, but which all the same seriously, and for some time, affect relatively small areas. Generally speaking, however, the familiar axioms of the "barometer manual" hold good, in spite of the smallness of these islands.

---

[1] THE LANCET, Nov. 6th (p. 1363), and Dec. 18th (p. 1828), 1909.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

Mr. D. B. Balding, chairman of the council of the Poor-law Medical Officers' Association of England and Wales, and Dr. Major Greenwood, the honorary secretary of the association, have addressed a circular letter to the members of the association asking the opinions of the Poor-law Medical Service of the country upon some of the main points connected with the impending reform of the Poor-law. If a sufficient number of Poor-law medical officers answer the questions, the association should be in a position to say whether to those members of the medical profession principally concerned the whole-time or part-time appointments seem the more preferable, and whether the amalgamation of the present Poor-law Medical Service with the Sanitary Medical Service can be satisfactorily accomplished. Some such general expression of opinion is now called for.

We regret to announce the death of Dr. Cecil Arthur Reynolds, medical officer of health of Shrewsbury, from scarlet fever contracted in the discharge of his duties at the isolation hospital of that town. Dr. Reynolds was only 38 years of age. He was a graduate of Oxford and a student of St. Thomas's Hospital. He leaves a widow and three children.

A telegram from the Governor of Mauritius to the Secretary of State for the Colonies reported 14 cases of plague with seven deaths during the week ending Jan. 27th.

It is announced that Mr. W. H. Lever has accepted the chairmanship of the Liverpool School of Tropical Medicine, in succession to the late Sir Alfred Jones.

A serious charge under the Sale of Food and Drugs Act was brought against Messrs. Clewley and Co. of Buckingham-street, W.C., last week at Bow-street police court. According to a report in the *Daily Telegraph*, Mr. Rotton, who prosecuted on behalf of the Westminster city council, stated that on Dec. 13th last an inspector took samples from two churns of milk which were in course of delivery by the defendant company at Charing Cross Hospital. On analysis the samples were found to be deficient in fat to the extent of 21 per cent. and 33 per cent. respectively. Defendants' manager said that at the date in question milk was exceptionally scarce, and in order to fulfil the contract a foreman added some separated milk. Owing to the bad weather last year, the company had been paying 3*d.* a gallon more for milk than their contract price to the hospital, but even then they found it impossible to make up the required quantity on that particular day. Mr. Rotton said that the defendants were fined 40*s.* and 12*s.* 6*d.* costs for a similar offence in April of last year. The magistrate remarked that this was a serious matter, especially as the milk was for a hospital. The defendants would be fined £5 on one summons and £10 on the other, with 4*s.* costs.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

By Harry Campbell, M.D. Lond., F.R.C.P. Lond.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

VI.[1]

Physiological Resistance.

The organism possesses the power of modifying, according to physiological requirements, the resistance which the flowing blood encounters in the blood-vessels. This is achieved by modifying the calibre of the arterioles and venules. We must not neglect the influence of the venules in this respect, for it is obvious that the capillary blood pressure and the rate of capillary flow can be modified considerably by the contraction and dilatation of these vessels, and we can well believe that changes in venular resistance may play a not unimportant part in regulating the systemic capillary circulation.

On this head, however, we know little or nothing. Concerning arteriolar resistance, on the other hand, we know a good deal. There can be no doubt that so-called "peripheral resistance" is essentially regulated by the arterioles. It is true that capillaries have been observed to contract in certain regions (more particularly in young animals), but to suppose that these slender vessels, constructed as they are of mere endothelial plates, and having an average length of no more than 1-2000th that of the entire systemic circuit, are capable of modifying vascular resistance in any sensible degree is surely unwarranted. So far as the circulation through the capillaries is concerned, these vessels are little more than passive agents at the mercy of the arteriolar floodgates which, on the one hand, can entirely cut off their supply of blood, and, on the other hand, so deluge them with it that any resistance they can offer to its on-rush must assuredly be a negligible quantity.

Only when the capillaries are obliterated by pressure from without or by disease (e g., thrombosis) can they offer any effective resistance to the blood flow. We must therefore think of the ever-changing physiological resistance as having its essential seat in the arterioles. No doubt the arteries proximal to the arterioles are subject to active dilatations and contractions, but such modifications (with a few special exceptions) have comparatively little influence on resistance, their primary object being, not to influence resistance, but (*a*) to regulate the distribution of the blood as between one large portion of the vascular system and another (thus the transference of a large quantity of blood from the splanchnic veins to the systemic arteries necessitates a considerable relaxation on the part of these latter); and (*b*) to regulate the resistance which the arterial walls oppose to the distensile effects of the blood. When, e.g., a large arteriolar area contracts, and thus augments pressure in the systemic arteries, a widespread increase in the tonus of the systemic arterial tree takes place in order to resist the distensile effects of the heightened blood pressure; and in like manner, when the horizontal is changed for the upright posture, the tonus in the arteries of the lower half of the body increases in order to counteract the distensile effects of the hydrostatic pressure. This function of the vascular media will be dealt with later.

Objects of arteriolar resistance.—We have seen that the anatomical resistance both in the pulmonary and the systemic circuit is small and about equal in amount, but that in the case of the latter segment it is possible to oppose a considerable physiological resistance by means of arteriolar contraction. Is the pulmonary segment provided with a similar effective mechanism for modifying arteriolar resistance? One thing is certain, i.e., that such physiological resistance as exists in the pulmonary circuit is small, seeing that the pressure in the pulmonary artery is normally only some 20 mm. Hg. The normal aortic pressure, on the other hand, is five or six times this amount, and inasmuch as the anatomical resistance is much the same in the two circuits, it follows that *physiological resistance is five or six*

---

[1] Nos. I., II., III., IV., and V. were published in The Lancet of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), 22nd (p. 256), and 29th (p. 318), respectively.

times greater in the systemic than in the pulmonary circuit. We have now to seek an explanation of this remarkable fact.

Why physiological resistance is higher in the systemic than in the pulmonary circuit.—The answer to this question explains why the pressure in the systemic arteries is higher than that in the pulmonary arteries, and why the walls of the left heart are thicker and stronger than those of the right. It seems to have been assumed that the larger resistance opposed by the systemic circuit is due to the fact that this circuit, being much larger and more complex than the pulmonary, necessarily opposes a much greater anatomical resistance, a view which we have seen to be the very reverse of the truth.

Why, then, is there this great difference in the physiological resistance offered by the two circuits? We have here a problem of great interest and one which, so far as I know, has been overlooked by physiologists.

In each segment some degree of arteriolar resistance is needful to ensure a continuous flow in the capillaries, but this does not explain why arteriolar resistance is so much greater in the one segment than the other. In seeking to solve this problem I would first draw attention to the fact that while in the case of the pulmonary segment the capacity of the venous portion is no greater than that of the arterial, in the case of the systemic segment it is two or three times greater, so capacious, indeed, that it can hold the entire blood mass without being greatly distended. While, therefore, there is no need to dam the blood back in the arterial part of the pulmonary segment further than suffices to secure a continuous flow in the pulmonary capillaries, it is of paramount importance that the blood should not be allowed to pass too readily into the systemic veins. This is what actually happens in shock when a veritable "bleeding into the veins" occurs. It is, indeed, evident that a generalised dilatation of the systemic arterioles would, if long continued, be fatal; the life of the organism hangs as by a thread upon the adequate tonus of the systemic arterioles. Whether we have in this capaciousness of the systemic veins a need for placing a physiological resistance in the systemic arterioles greater than that needful for procuring a continuous capillary flow, I am not prepared to assert dogmatically. The fact that systemic resistance continues to be considerably higher than pulmonary, even during profound sleep in the horizontal posture (when the factors presently to be considered operate little if at all), lends some support to this view. In the absence of any other need for special physiological resistance in the region of the systemic arterioles beyond that required to secure a continuous flow in the capillaries, the resistance, and therefore the arterial blood pressure, would be no higher in the systemic than in the pulmonary segment, and it is conceivable that with such a low systemic pressere there would be no need to make special provision against a too ready emptying of the systemic arteries into the veins.

Leaving this somewhat problematical point, we now approach more certain ground. There can be no doubt that one of the objects, possibly the sole object, of the high degree of physiological resistance offered by the systemic arterioles is to provide a head of pressure sufficient to meet certain physiological requirements. We have seen that a certain degree of pressure is necessary to secure an even flow of blood through the capillaries. In the systemic circuit, however, a pressure over and above this is required: (*a*) to provide for a due flushing of individual vascular areas when occasion requires, and (*b*) to counteract the effects of gravity on the flow in ascending arteries.

(*a*) A high pressure in the systemic arteries is needful in order that the supply of systemic blood to different parts of the body may be duly regulated in accordance with physiological demands. It should be observed that there is no pressing need to regulate the pulmonary (as distinguished from systemic) blood-supply to different parts of the lungs. Even admitting that the vessels of the pulmonary segment are under vaso-motor control, there can be little doubt that any such control would, in the main, have for its object the acceleration or retardation of the circulation through the lungs as a whole, though it is conceivable that it may be of occasional advantage to modify the supply of pulmonary (as distinguished from systemic) blood to some limited pulmonary area. In the case of the systemic circuit, on the other hand, the quantity of blood passing to the various vascular areas requires to be regulated from moment to moment with great nicety, a given area requiring now much, now little, blood. Now it is impossible to regulate within wide limits the supply of blood to these various vascular areas without the help of a considerable head of pressure. With a low systemic pressure, dilatation of a vascular area, say the renal, would not produce the necessary determination of blood to it, a statement which will scarcely be denied when it is reflected that during full functional activity of the kidneys the circulation through these organs may require to be 14 times as rapid as in the tissues generally.[2] Given a high blood pressure a local arteriolar dilatation is equivalant to the turning on of the tap of a pipe containing a liquid flowing at high pressure. It is significant in this connexion that the comparatively anabolic cold-blooded vertebrates which do not stand in need of such marked augmentations of local circulatory activity as the more katabolic warm-blooded, have a comparatively low systemic blood pressure. Thus, in reptiles this latter is rarely above 50 mm. Hg and may be as low as 20 mm. Hg, while in birds and mammals it is considerably higher than this.

(*b*) High blood pressure tends to counteract the effect of gravity on the circulation.[3] In considering this point we have to inquire how far the syphon action of the blood-vessels neutralises the effect of gravity on ascending currents of blood. It has to be remembered that the force required to drive a fluid along a closed system of rigid tubes remains the same in whatever position the system is held. It does not matter, for example, whether a U-shaped bend in such a system be turned upwards, downwards, or horizontally; for in the first two cases the retarding influence of gravity on the ascending current is exactly neutralised by its accelerating influence on the descending current. This is the principle of the syphon. Hence it follows that were the blood-vessels rigid, gravity would exercise no influence whatever on the circulation, but, inasmuch they tend to yield before the hydrostatic pressure of the blood, this fluid tends to accumulate in, and to distend, the most dependent vessels. Especially is this the case with the veins, many of which are collapsed except when dependent. There are, however, influences at work in the vascular system tending to counteract this neutralising influence of hydrostatic pressure on syphon action. When, for example, the horizontal position of the body is changed for the vertical, the splanchnic arterioles (as Leonard Hill has shown) contract, and thus prevent the blood from rushing with undue rapidity into the spacious splanchnic reservoir. There can, I think, be little doubt, too, that all the dependent[4] arteries, arterioles, and veins—i.e., those below the level of the heart—tend to contract at the same time. The contraction of the arteries prevents them from sagging out under the hydrostatic pressure; the contraction of the arterioles prevents the blood from being driven too rapidly by the hydrostatic pressure into the veins; the contraction of the veins limits the extent to which these are distended.

While syphon action does not operate in the case of the non-rigid blood-vessels as efficiently as in the case of rigid tubes we must not lose sight of the fact that it is, nevertheless, operative in large degree. The influence of gravity on the circulation is indeed in large measure neutralised by syphon action. Thus while in the upright posture it works against the ascending flow in the arterial half of the carotid arc, it favours the flow in the descending venous arc, which thus tends to syphon the blood out of the ascending carotid arc; and *vice versa* in respect of the dependent aortic circuit: the hydrostatic pressure in the descending arterial half of this circuit must tend to drive the blood onward and thus neutralise the retarding influence of gravity on the ascending venous current.[5]

---

[2] I believe that we have here an explanation of the high blood pressure met with in kidney disease. In granular kidney, e.g., there is a pressing need for an abundant supply of blood through the shrunken renal tissue in order to secure as far as possible the normal elimination of renal excreta. To effect this there takes place a widespread contraction of the systemic arterioles, and a consequent augmentation of systemic arterial pressure. But mere augmentation of this pressure would not increase the flow of urine, as many writers on renal pathology appear to assume. On the contrary, if the intrarenal arterioles shared in the contraction the effect would rather be to diminish the renal flow. It is probable that, side by side with the generalised arteriolar contraction, there takes place a dilatation of the intrarenal arterioles. Such an arrangement would secure a maximum flow of blood through the renal capillaries. This view, which I have long held, is supported by some recent observations of Dr. William Russell, who has shownthat while the media of most of the systemic arteries displays a tendency to hypertrophy, that of the intrarenal arterioles gives evidence of atrophy.

[3] This suggestion came from Dr. Samways, who, in criticising my paper "Why is the Left Heart Stronger than the Right?" contended that "a high systemic pressure is essential to prevent a limb from becoming bloodless through gravity when elevated above the heart, thus leaving it free to assume any attitude." THE LANCET, 1896, vol. ii., p. 905.

[4] In this connexion it is interesting to note that the arteries and veins of the lower extremities are not only stronger generally than those of the upper extremities but much more abundantly supplied with muscular tissue.

Syphon action being thus defective in the vascular system, it is obvious that other influences must be at work tending to counteract the effect of gravity on the circulation. A high systemic arterial pressure is one of these. It is obvious, e.g., that this must favour the ascending arterial flow —e.g., in the carotids in the upright position of the body, and in the upper limbs when held vertically above the level of the heart. I cannot, however, think that we have here an explanation of the great excess of physiological resistance in the systemic over that in the pulmonary circuit, and for the following reasons. Were such the case we should expect the disproportion between the pulmonary and systemic resistance to be much less marked in the horizontal than in the vertical position of the body, but we know that systemic resistance is very much greater than pulmonary in the former as well as in the latter position. Moreover, when in the horizontal posture of the body the hand is raised passively above the head we do not find evidence of any great increase in arterial pressure. Again, in small animals, such as the mouse, in which there is every reason to believe that the same disproportion exists between systemic and pulmonary resistance as in large animals, the factor of gravity can scarcely account for the difference between the two resistances, since all the ascending arterial currents are of diminutive length. Further, in a large number of animals, such as the sheep, the heart is seldom required to drive blood more than a very short distance above its level. Once more, in animals with enormous lungs, in which the height of ascending pulmonary currents must be very much greater than the height of ascending systemic currents in very small animals, the same disproportion obtains between systemic and pulmonary blood pressure as is observed among all warm-blooded vertebrates. The manometric readings from the carotid of a goose are well-nigh as high as those from the carotid of a horse, a sheep, or a dog. Finally, there is the significant fact that in cold-blooded animals systemic arterial pressure is not greatly above that of pulmonary.

Objects of reducing anatomical resistance to a minimum.—Seeing that the arterioles can almost entirely, if not entirely, obliterate their lumen by active contraction, it is obvious that they can oppose all the resistance to the arterial flow that is needful for physiological purposes. Hence there is—with one or two possible exceptions (e.g., the spermatic arteries)—no need to construct the arterial systems with a view to opposing high anatomical resistance. On the contrary, it is of advantage that this should be reduced to a minimum. Take the case of the systemic arterial tree. This offers in the region of the arterioles considerable physiological resistance. A little consideration will show that no good purpose can be served by having an anatomical resistance above the minimum possible. This would have the effect of increasing blood pressure on the cardiac side of the resistance, but no good could come from the increase of pressure thus brought about: arteriolar resistance more than suffices to secure an even flow through the capillaries; nor could any such increase of anatomical pressure be of any help in securing a local flushing of blood in response to a local arteriolar dilatation, seeing that it would be spent in overcoming the anatomical resistance before the blood had reached the capillaries of the area in question. It is, in short, manifest that a local flushing can be most effectively obtained with the least possible impediment on the part of anatomical resistance.

The advantage of having the venous system so constructed as to offer a minimum of anatomical resistance needs no insistance.

(*To be continued.*)

---

[5] In the upright posture the pressure in the femoral artery of man is 45 mm. Hg higher than the pressure in the carotid artery.

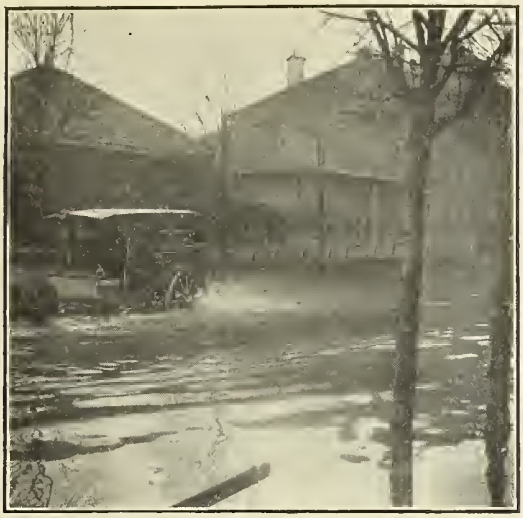
THE FLOODS IN PARIS.

(From our own Correspondent.)

All ordinary life is at a standstill in Paris on account of the inundation, which is truly a national catastrophe. Whole quarters of the city are plunged in water up to the first floors of their houses. Not only has the river overflown its banks, but we are confronted with the bursting of sewers, the swamping of the tunnels of the Metropolitan Railway, including those in use and those in course of construction. Through these channels the results of the disaster have spread to the centre of Paris, and even to its surrounding fortifications, for the trenches are full of water, and the Outer Circle Railway is flooded in the North-West quarter. Our electric supply is cut off, lifts are put out of working, and in some districts gas and, ironical as it seems, water are taken from us. In the general disaster your readers are most concerned in hearing of what has befallen medicine and its practitioners. The daily and political journals have made no mention of this aspect of affairs, reserving their space for the distress of the working classes and the disturbance of the Ministries and of the theatres. Curiously enough, although several medical journals were published on Saturday morning, when the floods were at their height, they made no allusion to them except for one which announced that its printing department had been flooded and that its subscribers must expect a delay in the appearance of the next number. None of them have published any pictures of the inundation of the great medical institutions, and in none of their files will there be any record of our terrific visitation.

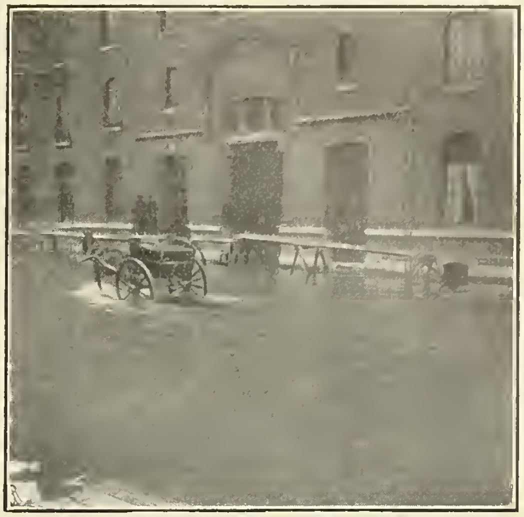
Medical practice has been particularly difficult to carry on during these disastrous days. In the quarter of the Rue de l'Université, in the streets of the Champs Elysées near the Seine, in the Faubourg St. Antoine, in the quarters of Grenelle, of Auteuil, and of Bercy, medical men, like all their neighbours, can only enter and leave their houses in boats. Those who live on the ground floor have been invaded by the water, which has, of course, ruined their carpets, their furniture, and their books, while in the meantime they have had to seek shelter in the houses of their friends or at hotels, and what being away from home means to a medical man it is not difficult for other medical men to realise. The breakdown of the telephone service has caused the most serious inconvenience to a large number, and in the visiting of patients the difficulties of travelling by boat have been considerable. It is, while I write, necessary to wait for a quarter or even for half an hour before a boat passes to take the doctor to his case, and when he leaves the patient's house there is the same waste of time in waiting for conveyance. In many of the flooded streets it is impossible to travel by boat on account of the wood-paving blocks which have become loosened, and it has been necessary to traverse them in carts, for fiacres are too low and let the water in at the bottom of the doors. In several districts, indeed, the only means of transport has been the backs of policemen and watermen, who, equipped with sewermen's waterproof boots, are rendering this public service. These expedients the beleaguered inhabitants only use so far as they are absolutely obliged, that is to say on a marketing expedition and once a day, but the medical practitioner with a round of visits to make is confronted with the difficulties all the time. Some of us have hired high carts for visits in the most populous streets, but many quarters have had to be left unvisited, as, for instance, in cases where the patient lives in a house at the bottom of a court the street door of which is immersed above a certain height in water. Several patients in such a predicament have died in spite of all efforts to bring them aid, and it is to be feared when the water has subsided more that people will be found starved to death at the bottom of some of the inaccessible courts. Even beyond the completely flooded quarters the traffic of the town has become very difficult on account of the partial floods which necessitate long detours, and the closing of all except two or three of the bridges, which makes it tedious work getting from one bank to the other. The flood came on us rapidly and found in many places dead and dying persons. The rescuing of the dead bodies has led to many mournful scenes. In a poor dwelling the dead wife of the concierge was laid out on her bed in a room which was rapidly inundated. The

FIG. 1.



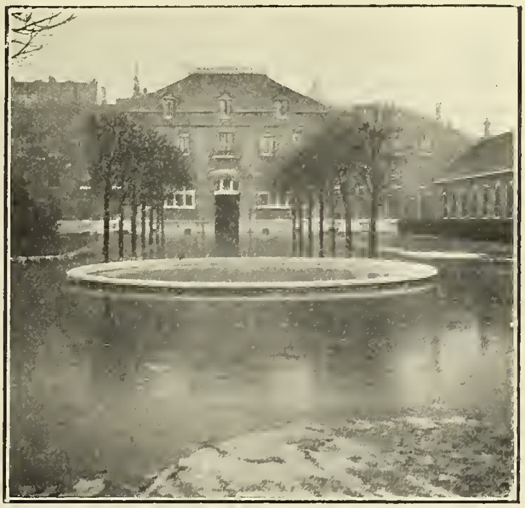
Street front of Boucicaut Hospital.

FIG. 2.



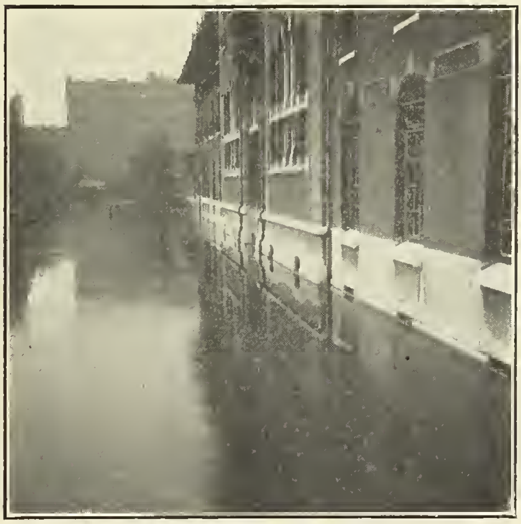
Entrance to Boucicaut Hospital.

FIG. 3.



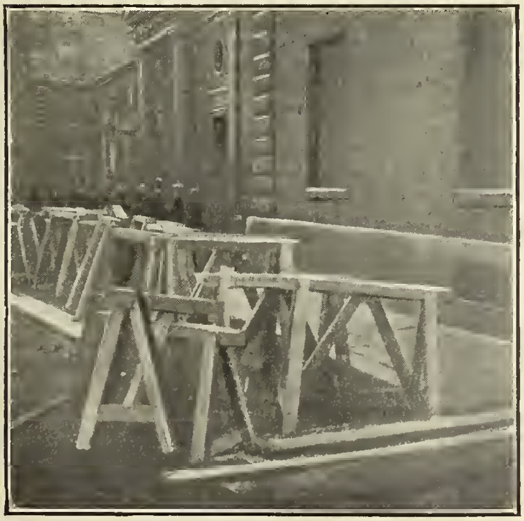
Court of Boucicaut Hospital.

FIG. 4.



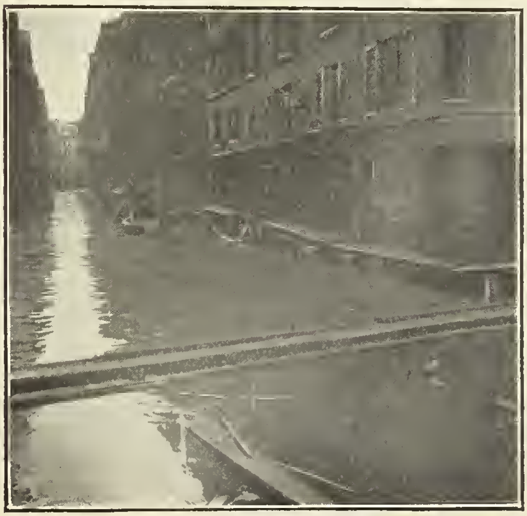
Boucicaut Hospital from within.

FIG. 5.



Entrance to Charité Hospital.

FIG. 6.



Street front of Charité Hospital.

husband only just had time to escape with his life, and it was not until the next day that he was able to return in a boat with police assistance, when he found the death-bed floating about with the tables and chairs, and had to carry the corpse in his arm, to the boat. In the Faubourg St. Antoine a coffin which had just been fastened down was floating on the waters, and the cemetery on the Ile St. Denis was ransacked by the water, which burst open some of the tombs and liberated the coffins.

The failure of the electric service not only stopped the lifts and the light-supply, but of course all therapeutic and diagnostic applications of electricity. The Faculty of Medicine had its basement and its heating apparatus flooded, and it is without heat, light, or telephonic communication. The Academy of Medicine is in the like plight, and it suspended its sittings last Tuesday week, but the other learned societies have not thus acknowledged defeat. At the Institute of France the Academicians came by boat, for the two courts of the enormous building have been converted into two deep lakes round which you can row as if in Venice. A short sitting was held by candle-light, all the members keeping on their hats and overcoats to keep themselves warm. But I must add that the institute, which did not suspend its sittings in 1870–71 even during the siege of Paris, makes it a point of honour that nothing shall interrupt its proceedings.

The damage done to the hospitals varied according to the quarters in which they were situated. The Boucicaut Hospital, situated in the Grenelle quarter, more than 600 metres from the river, has been flooded out. The water first invaded the foundations and extinguished the furnaces and then rose into the wards. The 400 patients who were lying there were removed in the rain by the police and the fire-brigade, wrapped up in counterpanes, in boats and motor-cars requisitioned by the prefect of the police, and were carried to other hospitals. (See Figs. 1, 2, 3, and 4.) Four corpses which were awaiting burial were taken to the Necker Hospital. The Charité Hospital (see Figs. 5 and 6) had its courtyards and cellars flooded and could only be reached by foot-bridges. The Hôtel Dieu had its furnaces and its kitchens flooded. The Salpêtrière Hospital was in a like condition, and as this institution includes in its buildings the central laundry of several other hospitals havoc was wrought amongst the linen. These other hospitals (the Charité, the Baudelocque, the Laennec, the Cochin, and the Maternité) now wash and dry their own linen, and in all their courtyards shirts, blouses, sheets, and napkins can be seen floating in the wind and often dripping in the rain on laundry lines. The other more fortunately situated hospitals have not had to face this difficulty, but in most of them the electric supply has failed and has had to be replaced by candles, so that night operations, however urgent, are almost impossible of achievement. The Central Pharmacy of the hospitals was one of the first buildings to be invaded, and its stores had to be hastily brought up from its cellars and taken to warehouses. The pharmaceutical processes which it carries on have been suspended and the hospitals have had to draw upon the private pharmacies for their requirements. The suburban Ivry Hospital, which shelters a number of old people, was flooded, and the Ville-Evrard Hospital has also been surrounded with water, but as yet its inmates have not left it, although its kitchen and furnaces have been flooded, and they have all had to take refuge in the upper storeys.

The sanitary state of the city has given rise to grave anxiety which up to the present has not been justified by facts. Indeed, the mortality was actually less during last week than during the week previous (912 deaths to 925); there has been little illness from diseases of the respiratory organs, in spite of the risks of chill to which so many people have been exposed. Measles alone has increased, but there were only three deaths from typhoid fever against seven in the previous week. It can be said truthfully that the sanitary condition of Paris is better than it was this time last year, but of course it is to the time of the decline of the waters that we must look with the greatest anxiety. Wherever the water retires it is leaving a sticky and possibly dangerous mud which needs disinfection, and which gives rise to fears of fever. Although the pipes for drinking water in most places have not been damaged, Parisians have been advised to take the easy precaution of boiling their water. In the suburbs, where places have been cut off from any water-supply, water-carts distribute daily 10 litres to each family for all its wants. Well-to-do people are sending carriages to Paris to bring back extra water-supplies. The Superior Council of Public Health has adopted a number of resolutions, of which the text is as follows:—

> In the flooded areas or in those drawing their water from such areas, the water having been soiled is extremely dangerous and will be so for some time to come. ...... To prevent serious epidemics, especially of enteric fever, it is absolutely necessary that no water from springs, the river, wells, cisterns, fountains, public canals, or like sources shall be used for drinking or cooking purposes until it has been boiled. ...... Since vegetables have been fouled by the water, it is strongly recommended that they shall not be eaten raw. ...... It is dangerous to re-occupy a flooded house before the following sanitary precautions have been taken. Cleanse the house of all the mud, slime, and dirt which the water has left behind, which can be more readily done by spreading plaster or lime on it to dry it up. The dirt thus removed should be piled in heaps and these heaps disinfected by thorough mixing with quicklime, using about 5 kilogrammes of lime to the cubic metre of refuse. Care must be taken not to make these heaps in the neighbourhood of wells. When all the mud has been removed the soil around the houses should be disinfected with milk of lime, and the floors inside them by liberal washing with water. The walls of the flooded houses should be scraped and whitewashed with lime. All mattresses soiled by the floods should be burnt and other bedding cleaned and disinfected as far as possible. Ultimately fresh air and thorough ventilation will be found the best means of drying and purifying the houses, and the lighting of large fires, keeping them burning for a long time with doors and windows open, will be found a most effective measure in drying rooms. ...... All corpses of drowned animals must be buried deep and covered with quicklime immediately.

At the time of appearance of this account, the floods, which as I write are beginning to abate, will certainly have subsided to some extent. But many weeks must elapse and an enormous sum of money must be spent before all the devastation wrought by such a disaster can be made good.

Paris, Jan. 31st.

(FROM A SPECIAL CORRESPONDENT.)

I give below a brief sketch of the salient points in the floods of Paris. The daily papers have given such full and accurate descriptions that all the world is familiar with the general features of the catastrophe. But your readers may like to have some observations especially on the medical position and on the splendid *morale* of the sorely tried citizens.

The Seine first began to reach an ominous height on Jan. 21st, when it rose to 5·76 metres. On the 22nd the Navigation Bureau posted the laconic message: "In consequence of the increased supply of its tributaries, the Marne, the Grand Morin, and the Yonne, the Seine will rise another metre and a half"! It had then reached a height of 6·59 metres at the Pont Royal, where the normal height is 2·48. By Saturday, Jan. 29th, the water had risen to 9·50, and it is no exaggeration to say that no quarter of Paris in the vicinity of the river on the left bank, except the high ground of Montparnasse, has escaped without some flooded cellars or burst sewer pipes, while on the right bank the city has suffered severely and to an extent that no one could have possibly anticipated.

Passy was the first quarter inside the fortifications to feel the flood. Then, one by one, the low-lying streets near the quays filled with water till Grenelle, the Palais Bourbon (le Chambre des Députés), the Quai d'Orsay, and the Luxembourg quarter below the Boulevard St. Germain, on the left bank could only be reached in carriages or boats. On the right bank Avenue Montaigne and the streets Jean-Goujon and François Ier form with Cour la Reine a series of canals; before the Gare St. Lazare is "a desert of moving water," but the hidden evils of underground flooding and submerged cellars are to be found everywhere in the quarters of the Elysée, the Palais Royal and the Temple, while as far away from the Seine as the Boulevard Pereire sewer pipes, which had been burst by the forcing back of sewage against the rising water, have filled the open railway cutting with a terrible compost fraught with the greatest danger for the inhabitants.

The Disorganisation of Traffic.

The disorganisation of traffic has been universal. The underground railway, the "metro," began to show signs of the trouble as early as Jan. 22nd. The new line from the Rue Clignancourt to Porte d'Orléans, only opened on Jan. 10th and crossing the river by a tunnel under the Ile de la Cité, was the first line to be put out of action, but by Jan. 29th the only part of the main lines not interrupted was between the Place d'Italie below the Jardin des Plantes and l'Étoile, this line forming one of the few means of communication between the two banks, and obviously a very indirect one. By

Jan. 24th the power house of the electric trams was flooded and these ceased to work, while the cumbrous steam trams did double duty with the motor omnibuses, till the insecurity of the bridges obliged the authorities to confine their circulation to one side of the river only. By Friday, Jan. 28th, many of the ordinary routes were covered with water, and one met a Bastille-Porte Rapp tram lumbering in a bewildered fashion down the Rue de Rennes to what was left uncovered of the Boulevard St. Germain. Much congestion of traffic was caused by the intermittent closing of the bridges, but by the 27th only the Pont Neuf and the Pont d'Alexandre III. remained open, the Pont Royal being safe but useless, as the lower part of the Rue du Bac was under water.

Traffic by boats was speedily organised, the boats being of every shape and size, from the big lifeboats requisitioned by the Government to carry food to the distressed suburbs to the small skiffs which plied about the fashionable quarters of the Elysée and Palais Bourbon. In this quarter one saw well-dressed Parisiennes being rowed to some big hotel in the Rue de Bourgogne or the Avenue Montaigne. They ring and the huge doors open slowly; they glide into the courtyard and the doors close with mysterious gurgling. The situation had its mediæval or Venetian charm, and many of these ladies attempted to see only the romance or the fun, but the terrific destruction and widespread misery were none the less apparent to them. In all the partially submerged streets a service of military carts was established to ferry passengers across the watery waste. Hoisted by a kindly policeman into a tumbril reminiscent of the days of the Terror, we are jolted over the disintegrated block pavement, half of which is floating on the surface of the seething water. And throughout this upheaval of all established order the dispatch with which arrangements were made to minimise the discomfort was astonishing. On Friday, Jan. 28th, foot passengers crossing the Pont d'Alexandre were obliged to wait for a passing carriage or motor and hang on to the foot rest to be carried over the pond that separated the bridge from the part of the Esplanade des Invalides still above water. By Saturday morning they passed dry shod over little foot bridges built by the sappers to whom Paris owes an incalculable debt of gratitude. It was the sappers who constructed the wooden platforms which have for days formed the sole means of egress from the submerged houses, and the swiftness and ingenuity of their work were remarkable. I watched them busily sawing the planks of the sidewalk of the Pont d'Iéna for these emergency landing stages, and can understand the general praise which they received for promptness and dexterity. Without their work in protecting and barricading the north river wall the basement of the Louvre might have been flooded, with incalculable damage to its priceless contents.

So much, in a few words, for internal traffic; the communication with the outer world has been preserved in a manner which redounds with credit to the sorely-tried officials. Thanks to the coöperation between the railway companies, leaving or entering Paris has been throughout possible, though complicated. The Gare des Invalides being completely submerged, the suburban trains were transferred to the Mont Parnasse station, without even a change in the time table. The Paris-Lyon-Marseilles railway struggled valiantly to maintain a regular service up to Jan. 27th, when they were forced to abandon the Gare de Lyon and accept the hospitality of the Gare de l'Est, from which point, *viâ* Châlons-sur-Marne, passengers for the south could join their train at Dijon.

The Failure of Light-supply.

The failure of the light-supply was localised by the more or less favourable situation of the different power houses. Reports came from Passy on Jan. 22nd that the electric lifts had stopped running and that the lights had been cut off in some houses, but the electricity furnished by the Ville de Paris did not fail until the 27th. Except in the quarters of Clichy and Levallois the gas-supply has been uninterrupted, so only the larger thoroughfares have been affected.

Many buildings supply their own electricity, and the plants as a rule have been submerged. The Chamber of Deputies has been plunged in darkness; a few oil lamps last used for the National Convention was the only available makeshift. Many theatres have suffered, of course, by the failure of light. The Opéra, Variétés, Folies-Bergères, Parisiana, and Vaudeville all closed on Sunday, Jan. 30th, owing to the lack of light, while many restaurants were obliged to shut their doors. Electricity failed the Champs Elysées on the 27th, and on the 29th the flooding of the lighting stations on the Rue Berger plunged the Grand Boulevard from the Opéra House to the Boulevard Poissonnière in semi-darkness; further west both the Elysée Palace and the British Embassy are using oil lamps. "King" Pataud's existence has been justified. Most of the café proprietors had learned a lesson from the last strike of the electricians, when Pataud exercised his power, and had provided themselves with gas, while the smaller establishments were prepared to utilise oil lamps and candles stuck in bottles. The discomforts and privations seemed to me to be better borne by the people than the darkness. Paris is a city of brilliant streets and feverish movement, and the gloomy rows of evacuated houses caused a melancholy that many could not shake off, and in the evening the crowds, gathered at every corner where the effects of the flood might be seen, wore an inexpressible air of sadness due to the unaccustomed silence and blackness.

The Food-supply.

Here also organisation and courage have triumphed. Rumours have been rife as to the shortage of food to be caused by the non-arrival of the trains and the flooding of cellars where large stores were kept, but owing to the measures taken by the authorities for giving precedence to trains carrying victuals, and to the hearty coöperation shown by all classes of tradespeople, only temporary inconvenience has been felt in certain quarters. If the submerged ovens obliged the bakers to fail their customers for one day, by the next they had made miraculous arrangements and the "petits pains" appeared as usual. The St. Lazare quarter had no milk on Jan. 28th, but the other parts of Paris were served, and the hospitals, owing to the facilities given by the Market Commissioner, were able to maintain their supply of food throughout.

A slight rise in the price of meat and vegetables was noticeable in some quarters, but on the 28th potatoes were being sold at a penny a pound and eggs at a franc a dozen in the market on the Place de l'Alma. An attempt made by two small grocers in the Temple quarter to raise their prices met with such savage remonstrance from the crowd that their example was not followed. The episode has been fully described in all the journals and there is no doubt that a tragedy was only just averted. The chief cause of shortage in the shops was the rush made by excited people to order in quantities of stores. The scene at the large groceries resembled the box-office of a theatre before a gala night or a London post-office just before Christmas. The customers had to stand in line half an hour before being served, and such articles as rice, flour, macaroni, and butter were sold out every evening, but in no case was the price advanced. In Clichy and Levallois the water-supply has failed and a daily allowance is being distributed in Passy, while many suburbs supplied by the reservoir at Choisy-le-Roi have been without drinking-water since the 27th, but in Paris itself there is no failure in the supply.

Medical Organisation.

Enormous efforts have been made throughout by the Assistance Publique, reinforced on all sides by a truly generous public, to carry on the work of attendance on the sick during the time of stress. One of the gravest difficulties which have taxed the splendid organisation of the Assistance Publique has been the necessary evacuation of two of the menaced hospitals. Several days before M. Champoux, the director of the immense hospital at Ivry, began to prepare for the removal of the 2400 sick, aged, and impotent people under his care, and the highest praise is due to the prompt and efficient way the pathetic task was performed. In a few hours the inmates were carefully transferred by motors, some to the Hospital Bicêtre, others to the Salpêtrière, where the number of beds has been doubled. On Jan. 28th the director of the Hospital Boucicaut in the Rue de la Convention hastily asked the help of the police to remove his 400 patients from the rising danger. With the aid of some sappers and firemen, and in the presence of M. Lépine, the painful evacuation took place. The hospital bakeries were submerged in the Rue Scipion, and the stores of drugs, &c., kept in the cellars of the École de Pharmacie, Quai de Tournelle, were threatened, but with the promptness which has characterised Parisians throughout, this catastrophe was averted, and the stores were moved out of danger, and other baking machines quickly acquired to provide not only for the daily wants of the hospital but an increase of 7000 pounds of bread for the homeless victims outside their walls. The tragedy of the last week has nowhere perhaps been more poignantly felt than in witnessing the removal of sick and dying, who, wrapped up in coverlets, were handed over to their rescuers, who carried them carefully to the boats, whence they were put in motors and taken to the hospitals of Necker, Cochin, and Laennec.

Forebodings.

Up to the present the terrible calamity has produced, with few exceptions, only material losses—even the baby born on a raft did, it is said, quite well. The distress is appalling, but it has been met by such prompt measures on the part of the authorities, charitable associations, and private people for relieving the victims, that the loss of life has been small in view of the extent of the area affected, and statistics furnished by M. Bertillon show no increase in disease as yet. The homeless victims have been housed and fed in the convents of St. Sulpice and Sacré Cœur, at Charenton, as well as in the schools, municipal bureaux, and even in the Charity Bazaar building in the Rue Pierre Charron.

The fear of the aftermath, in a sanitary rather than in a pecuniary sense, is becoming general, and the stringent regulations proposed by the sanitary committee summoned by M. Lépine under the presidency of Dr. Roux prove that it is well founded. But all that can be done is already started in the doing. It is settled that all flooded houses are to be disinfected, the soil surrounding the houses is to be turned over, and all drinking water is to be boiled till further notice. At the Municipal Council there have been vigorous protests against the pessimistic words of some of the journals which are representing Paris as necessarily being in the future a huge necropolis. The extent of the danger caused by the bursting of the sewers and the dissemination of filth by the flooding of the underground railway cannot be estimated till the flood has subsided, but all feel that it will be many months before Paris can repair the disaster.

Fears are entertained that the subsidence of the water may be attended by terrible consequences, as the soil has been so excavated that it is possible that many buildings may collapse; especially round the Place du Havre, in front of the Gare St. Lazare, is this apprehension acute, and a gradual subsidence will be less dangerous than a sudden one. The numerous cafés in this quarter and the Hôtel Terminus have been evacuated and all circulation forbidden near the dangerous quarter. The peril of buildings collapsing and roadways caving in causes great anxiety in this neighbourhood, and among the losses caused by the flood must be counted the departure of many of the foreign colony, out of whose pockets the shopkeeper makes so much of his profit.

Parisians begin to realise the imprudence of having allowed their city to be so undermined, and the engineers who sounded the unheeded note of warning have had their wisdom proved in a melancholy fashion, but these are matters which it is impossible to say anything about. The good thing is that the organisation for taking all possible precaution against widespread disease is in being.

The Splendid Spirits of Paris.

Paris would not be Paris if in the midst of all her trouble she did not laugh. The good-humoured soldiers and policemen are everywhere, distributing bread from house to house out of huge military wagons, calling encouragingly to the hungry when they are obliged to go back for fresh supplies, helping people into boats, guiding them along the frail wooden board walks, and gently pushing back the too curious who would run into danger. All these people conduct their difficult and arduous business gaily, with perpetual interchange of chaff or comic sympathy. Very popular people are the possessors of long rubber boots. I saw one of them carrying a butcher boy with his basket on his shoulder to deliver his wares and the boy was hanging on to him as calmly as if he had never heard of an "escalier de service," but with the air of enjoying a pick-a-back ride. Stilts required more practice, as one unfortunate man proved to me, for, having nearly gained the edge of a miniature lake, the jests of the watching crowd upset both his gravity and balance. Stilts where the ground below cannot be seen clearly are untrustworthy articles.

"One does what one can" seems to be the motto adopted by the Parisians. From one house the doctor was seen emerging in frock overcoat and immaculate top-hat, with his trousers tucked up to his knees and carrying his boots and socks in a towel! A motor carrying an ambulance flag dashes to the edge of a canal; no boatman can be found to take the doctors hurrying to a sick bed, but one of the motorists is provided with rubber boots and hastily takes his companions pick-a-back, one after the other, and deposits them more or less carefully in an empty boat, seizes the oars, and is off, determined that the patient's wait shall be as brief as possible. One of the most noticeable things during this sad week has been the unselfishness and untiring devotion shown by the cruelly distressed people. The masons and labourers have worked night and day at their task of shoring up breaches in the parapets, building barricades before the advancing waters that threatened to submerge the Place de la Concorde by piling up sacks of cement on the stone parapet. The women of the Red Cross Society have worked untiringly to provide shelter, clothing, and food for the homeless in the Convent of St. Sulpice, as well as carrying food, sometimes by ladder, to the unfortunates who were able to stay in the upper parts of their miserable dwellings; while the subscription list grows rapidly, swelled by the *sous* of the luckier workpeople, till the task of caring for the 80,000 victims is assured. Much has been said and written during the last year by the French people themselves on the decadence of their nation, but in view of the true spirit of fraternity evinced and the prompt and efficient grasp of the best methods to ameliorate the appalling catastrophe which has overtaken them, one may give a hearty assent to the Frenchman who said, "Quand il y a dans un pays, tant de belles âmes, il n'est pas permis de désespérer."

Paris, Dimanche, Janv. 30.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Jan. 27th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen, having passed the required examination, were admitted Members of the College:—Henry Sherwood Ranken, M.B. Glasg.; Christian Hugo Rippmann, M.A., M.D. Cantab.; Christopher Rolleston, M.A., M.D. Oxon., L.R.C.P.; Eric Bellingham Smith, M.D. Lond.; Ernest Frederick Gordon Tucker, M.B. Lond., L.R.C.P.; Robert Stanton Woods, M.D. Lond., L.R.C.P.; and Carl Ernst Zundel, M.D. Lond., L.R.C.P.

Licences to practise physic were granted to 59 gentlemen who had passed the required examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen:—Devarayadoorg Venkata Giri, Walter Leigh Mackinnon Goldie, Arthur Henry Headley Huckle, Kombur Ramaswamy Krishnaswamy Iyengar, John Macpherson Johnston, Jagannath Vasudev Karve, James Alexander Milne, Herbert Wilberforce Perkins, Frederick Joseph Wilfrid Sass, Sidney Browning Smith, Edmund Fairfield Thomas, and Alexander Butchart MacArthur Thomson.

The PRESIDENT announced that he had nominated Dr. H. B. Donkin as Harveian orator for 1910, and Dr. G. Newton Pitt as Bradshaw lecturer. Also that the Council had appointed Dr. A. E. Boycott to be Milroy lecturer for 1911.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, reporting proceedings of its Council on Nov. 11th, Dec. 9th, and Jan. 13th last. 2. From the Registrar of the General Medical Council, dated Dec. 17th and Dec. 20th last. 3. From the Clerk to the Privy Council, concerning the International Congress in Physio-therapeutics to be held in Paris in March next. Dr. H. Lewis Jones was appointed to represent the College. 4. From the Royal Sanitary Institute, inviting the College to send delegates to its Congress in Brighton in September next. It was left to the President to nominate delegates. 5. From Mrs. Playfair, offering to the College a portrait of the late Dr. Playfair. The offer was accepted and the thanks of the College were ordered to be returned to the donor. 6. From Dr. D. W. C. Hood, offering to the College a gold pencil-case formerly belonging to the late Sir William

Gull. The offer was accepted and the thanks of the College were returned to Dr. Hood.

Dr. Edward Liveing, Dr. Hood, Dr. H. W. G. Mackenzie, and Sir James Reid were elected as councillors.

Dr. F. H. Champneys was re-elected a representative of the College on the Central Midwives Board for one year from April 1st next.

The following resolution was moved by Dr. W. S. LAZARUS-BARLOW and seconded by Dr. F. W. ANDREWES :—

> That the President be requested to nominate a small committee to consider and report upon the teaching regulations and examinations in pathology for the Conjoint Diploma.

The resolution was carried, and the PRESIDENT nominated the following Fellows to serve on the committee: Dr. Lazarus-Barlow, Dr. Andrewes, Dr. S. J. Sharkey, Dr. Frederick Taylor, Dr. W. P. Herringham, and Dr. Norman Moore.

The following reports were received: 1. From the representative of the College on the General Medical Council on the proceedings of the Council during its sessions in November last. 2. Two reports from the Finance Committee. 3. From the Examination Hall Buildings Committee. 4. Two reports from the Committee of Management, dated Oct. 19th and Dec. 7th. These reports were as follows :—

> 1. That the London School of Medicine for Women and the Edinburgh School of Medicine for Women be added to the list of recognised medical schools.
> 2. That the Royal Free Hospital be added to the list of recognised hospitals.
> 3. That the public health laboratories of the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh be added to the list of laboratories recognised for the course of instruction for the Diploma in Public Health.
> 4. That the Mater Infirmorum Hospital, Belfast, be recognised by the Royal Colleges for clinical instruction in medicine and surgery in connexion with Queen's College, Belfast.

The books and other publications presented to the library during the past quarter were received, and the thanks of the College were returned to the donors.

The PRESIDENT then dissolved the Comitia.

ADAMS *v.* POMEROY FUND.

IT is hoped that the appeal made in these columns to relieve the plaintiff in this action of the expense, amounting to about £100, which the taxed costs do not cover, may now shortly be closed. The response has been generous and only a small balance of £21 0*s.* 6*d.* remains to be subscribed. The article in *Vanity Fair* of Oct. 7th, 1908, which was brought before the notice of the High Courts, contained a personal attack on the plaintiff, and was also bitterly directed against the whole medical profession. A full report of the action appeared in the *British Medical Journal* of Dec. 11th, 1909, p. 1723, and a briefer account in THE LANCET of Dec. 18th, p. 1828. In determining to bring the action defending her own reputation the plaintiff was greatly influenced by the consideration that the attack was one on the whole medical profession; her resolve was justified by the strong comments made by Mr. Justice Grantham on the article. Further donations will be gratefully acknowledged by the honorary secretary, Dr. L. Garrett Anderson, 114A, Harley-street, London, W., who has received the following sums since the last list was published :—

	£	*s.*	*d.*
The Home Counties Branch, Incorporated Society of Medical Officers of Health	3	3	0
Major P. Carr-White, I.M.S.	0	10	0
Already acknowledged ...	75	6	6
Total sum received	£78	19	6

A NEW RUSSIAN UNIVERSITY.—The *Novoe Vremya* has announced the opening of a university at Saratoff, the capital of the Volga district. This constitutes the tenth Russian university. Hitherto Russia has only had one university to each 16,000,000 inhabitants, all having come into existence within the last 150 years. The number of students in Russian universities in 1894 was barely 14,000, in 1906 it was 24,000, and two years later 33,000. All the universities are greatly overcrowded, especially as regards their laboratories and clinics. The town of Saratoff assisted the Government to establish the new university in its midst by contributing 1,000,000 roubles (£106,250), besides providing the land on which it is built.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7282 births and 5213 deaths were registered during the week ending Jan. 29th. The annual rate of mortality in these towns, which had not exceeded 14·9 and 14·8 per 1000 in the two preceding weeks, rose to 16·3 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these towns averaged 15·2 per 1000, and the mean rate in London during the same period was equal to 14·8. The lowest annual rates of mortality recorded in the 76 towns last week were 5·3 in Hornsey, 8·5 in Willesden, 9·0 in Southampton, and 9·5 in Derby; the rates in the other towns ranged upwards, however, to 23·1 in York, 23·5 in Newport (Mon.), 25·5 in Bury, and 26·9 in Hanley. In London the recorded death-rate last week was equal to 15·7 per 1000. The 5213 deaths registered in the 76 towns last week showed an increase of 464 upon the low number returned in the previous week, and included 361 which were referred to the principal epidemic diseases, against 288 and 278 in the two preceding weeks; of these 361 deaths, 165 resulted from whooping-cough, 52 from measles, 51 from diphtheria, 40 from diarrhœa, 36 from scarlet fever, and 17 from "fever" (principally enteric), but not one from small-pox. The mean annual rate of mortality from these epidemic diseases last week was equal to 1·1 per 1000, against 0·9 per 1000 in each of the two preceding weeks. No death from any of these epidemic diseases was registered last week in Bolton, Stockport, Rochdale, York, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·1 in Devonport, 3·4 in Birkenhead and in Ipswich, and 3. 8 in West Hartlepool. The fatal cases of whooping-cough, which had been 77, 79, and 98 in the three preceding weeks, further rose to 165 last week, and caused annual death-rates equal to 2·1 in Ipswich and in Warrington, 2·5 in Plymouth and in West Hartlepool, and 3·1 in Devonport. The 52 fatal cases of measles showed a further decline of 6 from the numbers in the two previous weeks; the highest annual rates from this disease last week were 1·4 in Ipswich and in Wallasey, 1·6 in Northampton and in Swansea, and 1·7 in Birkenhead. The 51 deaths referred to diphtheria exceeded the number in the previous week by 7, and included 12 in London and its suburban districts, 3 in Liverpool, 3 in Manchester and Salford, and 3 each in Halifax and in Leeds. The 40 deaths attributed to diarrhœa showed some increase upon the low number in the previous week. The fatal cases of scarlet fever, which had been 24 and 31 in the two preceding weeks, further rose last week to 36, were proportionally most fatal in Sunderland, Burnley, and Huddersfield, and included 11 in London and its suburban districts. Only 17 deaths in the 76 towns were referred to "fever"; they included 2 in Manchester, in Portsmouth, and in Rotherham. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had declined in the 15 preceding weeks from 2819 to 2069, had further fallen to 1993 on Saturday last; 193 new cases of this disease were admitted to these hospitals last week, against 200 and 204 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 2 small-pox cases on Saturday last. Of the 1468 deaths registered in London last week 322 were referred to pneumonia and other diseases of the respiratory system, against 285 and 291 in the two preceding weeks; these 322 deaths, however, were 106 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 49, or 0·9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Newcastle-upon-Tyne, Nottingham, and in 48 other smaller towns; the 49 uncertified causes of death in the 76 towns last week included 8 in Liverpool, 6 in Birmingham, and 4 both in Sheffield and in Hull.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 783 births and 693 deaths were registered during the week ending Jan. 29th.

The annual rate of mortality in these towns, which had been equal to 20·4, 16·7, and 15·5 per 1000 in the three preceding weeks, rose again to 19·1 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·9 per 1000, and exceeded by 2·7 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 15·6 in Paisley and 15·9 in Edinburgh, to 22·4 in Perth and 31·9 in Greenock. The 693 deaths from all causes in the eight towns last week showed an increase of 130 on the number returned in the previous week, and included 99 which were referred to the principal epidemic diseases, against 82 and 77 in the two preceding weeks. These 99 deaths were equal to an annual rate of 2·7 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 1·1 per 1000. The 99 deaths from these epidemic diseases in the Scotch towns last week included 54 from measles, 17 from diarrhœa, 12 from diphtheria, 8 from whooping-cough, 4 from scarlet fever, and 4 from "fever," but not one from small-pox. The fatal cases of measles, which had been 37 and 46 in the two preceding weeks, further rose to 54 last week, and included 44 in Glasgow and 8 in Edinburgh. The 17 deaths attributed to diarrhœa showed an increase of 4 upon the number in the previous week; 6 occurred in Edinburgh, 5 in Glasgow, and 3 both in Dundee and in Leith. The 12 deaths referred to diphtheria also exceeded the numbers in recent weeks, and included 4 in Aberdeen, and 3 both in Glasgow and in Dundee. The fatal cases of whooping-cough, which had been but 4 in each of the two previous weeks, rose to 8 last week, of which 2 were returned in Glasgow, in Dundee, and in Greenock. Three of the four deaths from scarlet fever occurred in Glasgow. The 4 deaths referred to "fever" corresponded with the number in the previous week, and included 3 in Glasgow and 1 in Greenock. The deaths in the eight towns last week referred to diseases of the respiratory system, which had declined in the four preceding weeks from 181 to 101, rose again last week to 123, and exceeded by 12 the number returned in the corresponding week of last year. The causes of 20, or 2·9 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 548 births and 467 deaths were registered during the week ending Jan. 29th. The mean annual rate of mortality in these towns, which had been equal to 22·3 and 19·1 per 1000 in the two preceding weeks, rose again to 21·1 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these Irish towns averaged 20·6 per 1000, whereas the mean rate during the same period did not exceed 15·2 in the 76 largest English towns and 17·9 in the eight principal Scotch towns. The annual death-rate last week was equal to 21·7 in Dublin, 20·1 in Belfast, 21·0 in Cork, 21·6 in Londonderry, 16·4 in Limerick, and 13·6 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 24·4 per 1000. The 467 deaths from all causes in the 22 town districts last week showed an increase of 45 upon the number in the previous week, and included 30 which were referred to the principal epidemic diseases, against 28 and 29 in the two preceding weeks; these 30 deaths were equal to an annual rate of 1·4 per 1000; in the 76 English towns the mean rate from the same diseases last week was 1·1 per 1000, while in the eight principal Scotch towns it was equal to 2·7. The 30 deaths from these diseases in the Irish towns last week included 21 from whooping-cough, 3 from diarrhœa, 2 from diphtheria, 2 from "fever" (enteric), and 1 each from measles and scarlet fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 22 and 18 in the two preceding weeks, rose again to 21 last week, and included 13 in Belfast, and 2 each in Lisburn, Tralee, and Newtownards. The 2 fatal cases of diphtheria occurred in Cork and Newtownards; and the 2 of enteric fever in Belfast and Cork. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 138 and 107 in the two preceding weeks, rose again last week to 131. The causes of 21, or 4·5 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent., and in the eight principal Scotch towns it was not higher than 2·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Deputy Inspector-General of Hospitals and Fleets Standish Thomas O'Grady has been placed on the Retired List at his own request, with permission to assume the rank of Inspector-General of Hospitals and Fleets (dated Jan. 26th, 1910).

The following appointments are notified: Deputy Inspector-General: W. H. Norman to Plymouth Hospital. Fleet-Surgeons: P. V. Jackson to Haulbowline Hospital; R. H. J. Browne to the *Ganges*, for Shotley Training Establishment; E. R. Dimsey, D.S.O., to the *Lord Nelson;* A. G. Wildey to the *Jupiter;* E. C. Cridland to the *Illustrious;* and R. Miller to the *London*, on commissioning. Staff-Surgeons: H. Spicer to the *Venerable* and W. S. H. Sequeira to the *Repulse;* R. A. Ross to the *Argyll* on re-commissioning; G. Gibson to the *Bellona;* W. H. Pope to the *Vulcan* and G. E. Duncan to the *Sentinel*, on recommissioning; J. C. G. Reed to the *Sapphire*, additional, and on recommissioning; W. W. Keir to the *London*, on commissioning; and P. K. Nix to the *Temeraire.*

ROYAL ARMY MEDICAL CORPS.

Captain George H. Richard is placed temporarily on the Half-pay List on account of ill-health (dated Jan. 25th, 1910).

Captain John G. Berne retires on retired pay (dated Feb. 2nd, 1910).

The undermentioned Lieutenants, from the Seconded List, are restored to the establishment (dated Jan. 11th, 1910): Lionel C. Hayes and Bernard G. Goodwin.

The following officers have been appointed honorary surgeons to His Excellency the Viceroy of India: Surgeon-General A. T. Sloggett, C.M.G., A.M.S., Principal Medical Officer, Poona Division, vice Surgeon-General O. E. P. Lloyd, V.C., A.M.S. Colonel R. H. Forman, A.M.S., Principal Medical Officer, Bombay Brigade, vice Lieutenant-Colonel G. E. Hale, D.S.O. Lieutenant-Colonel S. F. Henderson, Secretary to the Principal Medical Officer, His Majesty's Forces in India, vice Major Dalton.

Captain D. Richmond and Captain R. B. Hole, on return from India, are appointed for duty in the Cork District. Captain P. G. Hyde is transferred from the Cork to the Dublin District. Captain J. W. L. Scott has been appointed a Specialist in Radiography, and posted to the 4th (Quetta) Division. Major H. V. Dillon has been transferred from the Southern to the Northern Command, England, and appointed to the medical charge of troops at Scarborough. On termination of a course of Instruction at the Royal Army Medical Corps Depôt and School of Instruction, Aldershot, Lieutenant H. R. Edwards, Lieutenant W. Mathison, Lieutenant K. Comyn, Lieutenant C. M. Nicol, Lieutenant E. C. Stoney, Lieutenant A. P. O'Connor, and Lieutenant R. M. Davis are posted for duty to the Eastern Command. Lieutenant A. G. Jones, Lieutenant J. M. Weddell, Lieutenant V. P. Hutchinson, and Lieutenant T. W. Stallybrass are posted for duty to the Southern Command. Lieutenant F. W. M. Cunningham, Lieutenant T. H. Dickson, Lieutenant R. C. G. M. Kinkead, and Lieutenant H. V. Stanley are posted for duty to the Irish Command. Lieutenant H. G. Robertson is posted for duty to the Northern Command.

INDIAN MEDICAL SERVICE.

Colonel C. P. Lukis has been confirmed as Director-General of the Indian Medical Service in succession to Sir Gerald Bomford, K.C.I.E., retired.

The Viceroy has selected Lieutenant-Colonel G. F. A. Harris, Officiating Inspector-General of Civil Hospitals, United Provinces, to succeed Colonel R. Macrae as Inspector-General of Civil Hospitals, Bengal, at the end of February.

Major P. B. Haig is posted as Agency Surgeon in Bhopal. Lieutenant-Colonel H. E. Drake-Brockman becomes Agency Surgeon in Baghelkhand. Captain C. M. Goodbody is appointed Agency Surgeon in Alwar. The services of Captain Jones are placed temporarily at the disposal of the Bombay Government. Captain McGillivray reverts to military duty. Captain Ritchie, Civil Surgeon, Chittagong, is granted combined leave for two years. Lieutenant W. J. Simpson is appointed for duty with the 35th Scinde Horse at Peshawar.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant John F. Crombie to be Captain (dated June 24th, 1909). Captain John R. Armstrong resigns his commission (dated Jan. 1st, 1910).

INDIAN MEDICAL SERVICE EXAMINATION.

The competitive examination for commissions in the Indian Medical Service was held on Jan. 24th, 25th, 26th, 27th, 28th, and 29th, for which 26 candidates presented themselves for 13 vacancies. The subjects of the examination were medicine and therapeutics, surgery and eye diseases, pathology and bacteriology, surgical anatomy, physiology, midwifery and diseases of women and children, pharmacology, and toxicology. The following is a list of the successful candidates with the marks obtained by them out of an aggregate of 5100 marks:—

	Marks.
Robert Forrester Douglas MacGregor, M.B., Ch.B. Edin., Edinburgh University	3532
Edward Galwey Kennedy, M.B., B.Ch., B.A.O. R.U.I., Queen's College, Cork	3529
Arthur Lewin Sheppard, M.B., B.S. Durh., Durham University	3510
Paul Knighton Gilroy, L.R.C.P., M.R.C.S., St. George's Hospital	3436
Joseph Arthur Alexander Kernahan, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital	3428
Maurice Lionel Corrie Irvine, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital	3408
Ernest William Kirwan, M.B., B.Ch., B.A.O. R.U.I., Royal University of Ireland	3357
Anath Nath Palit, F.R.C.S., L.R.C.P. Edin., Edinburgh and University College Hospital	3291
John Valentine MacDonald, M.B., Ch.B. Edin., Edinburgh University	3279
Hubert Alan Hirst Robson, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital	3261
George Lawrance Duncan, M.B., Ch.B. Edin., Edinburgh University	3243
Kalyan Kumar Mukerji, L.M.S. Calcutta, L.R.C.P. Edin., D.P.H. Cantab., Calcutta and Liverpool Universities	3112
Cecil George Howlett, M.B., Ch.B. Manch., Manchester University	3074

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the examination held in London last month. There were five vacancies, for which 31 candidates presented themselves:—

	Marks.
J. Gilmour, M.B., B.Ch. Edin., F.R.C.S. Edin., Edinburgh University	647
W. W. Treves, M.B., B.Ch., B.A. Cantab., F.R.C.S. E., Cambridge University and London Hospital	642
J. T. Simson, M.B., B.Ch. Edin., Edinburgh University	575
C. Robb, M.B., B.Ch., B.A.O. R.U.I., Queen's College, Belfast	565
E. T. Gaunt, M.B., B.Ch. Birm., Birmingham University	557

SIR ALFRED H. KEOGH, K.C.B.

The *Army and Navy Gazette* in its current issue has the following note in appreciation of the splendid work which Sir Alfred Keogh has done for the department which he represents:—"As it is now known that Sir Alfred Keogh practically ceased to be Director-General of the Army Medical Service on the last day of December, 1909, by proceeding on leave prior to being gazetted out early in March, a fitting opportunity occurs to review the reforms that have been made in the Service which he has directed since January 1, 1905. We have from time to time during that period adverted to his doings, his difficulties, and his successes, so all that now remains is to summarise the work done during his tenure of office. These include the establishment of the Royal Army Medical College and the Queen Alexandra Military Hospital at Millbank, which came into being on the recommendation of the Reorganisation Committee, on which he served; the new Nursing Service, as also the grading and training of the rank and file of the R.A.M.C.; and the School of Sanitation at Aldershot and the introduction of sanitation into the examination of all officers of the Army. But the great achievement with which he must be credited is the establishment of the medical service of the Territorial Force, with its organisation of units on a proper war basis; while the scheme for voluntary aid in war, which is being now taken up by the Red Cross Society and is spreading like a net over the whole country, is entirely due to Sir Alfred Keogh's foresight. The warrant limiting the rank of lieutenant-colonels, so much needed, was issued during his directorship, and the coördination of the methods of examining recruits by the appointment of inspectors in every command was brought into force. These important reforms clearly prove that Sir Alfred Keogh's time spent at the head of the Army Medical Service has not been an idle one. That his position for the last five years has not been in any sense 'a bed of roses' we well know. If he has achieved much it has been at the cost of dogged opposition, but a continuity of policy is necessary in the interests of the medical service. Much has been done for it, but it is not perfect yet, and will not be so till further reforms are instituted and more money spent on it."

Miss Sidney Browne, R.R.C., has been appointed matron-in-chief to the Territorial Nursing Service.

Correspondence.

"Audi alteram partem."

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,—I have read with much interest Mr. Heather Bigg's reply to the various criticisms evoked by his letter in support of corsets, and am much impressed by the thoroughness and care with which he has gone into the question, and especially with the trouble he has taken to get fresh evidence in support of his contentions. Since he has given special attention to the views expressed in my letter, and as I am still strongly of opinion that the majority of healthy women would be better without stays, I feel justified in making a further contribution to the discussion.

Let me first say, by way of finding some ground of agreement with Mr. Bigg, that I believe many women do need the support of a suitable corset. In my first letter I admitted its remedial value, and was then thinking of the pathological conditions for which we have the authority of Mr. Arbuthnot Lane. I also admit that a number of women need some form of abdominal support for conditions which are structural rather than pathological. I believe, though I cannot give absolute proof of it, that evolution, through the wearing of corsets for many centuries, has produced by adaptation a type of woman that cannot easily do without them. The fact that some women seem quite unable to give them up supports this contention, though I believe strongly that most women would not need them if they had never begun wearing them. Undoubtedly, also, the older a woman gets the more difficult is it for her to discard corsets, and there comes a time in her life when it would be very difficult and possibly unwise for her to do so. Again, women who have borne children not infrequently need artificial support to do the work of weakened abdominal walls, and for these some form of corset is perhaps necessary. But apart from these cases, there is, in my opinion, no reason why any normal woman should wear a corset, provided she dresses suitably, and is to a certain extent above the dictates of fashion. Most fashionable dresses are designed to be worn with a corset; it sustains their weight, which would otherwise drag harmfully on shoulders or waist. Mr. Bigg in his letter mentions the fact that at the age when most women begin to wear corsets "the loin band becomes the means of hanging the skirt to the hips," but the ideal dress to wear without a corset is one which does not need this support. It should fit closely to the figure, and so secure an even distribution of its weight. Such a dress is found in the "reform" dress initiated in Germany, or in the "princess" dress so much worn in recent years in England.

Now I submit that if all women were suitably dressed and unstayed they would be healthier and freer in movement, and corsets would become almost entirely remedial. Evolution would work beneficially and in time produce a type possessing adequate abdominal walls and peritoneal slings. Mr. Bigg himself opines the likelihood of evolution tending to produce this type, and surely it is natural and best for the future physique of the race to allow it to act in this way.

Mr. Bigg, in his reply, restates his reasons in favour of corsets, reasons which surely apply equally to men with women. Why, then, should not men also wear corsets? In his first letter Mr. Bigg gave the special abdominal organ as a reason for women wearing them, but I do not see how a corset can help that organ. To me it appears that it would tend to press in a way that would be harmful to it.

In meeting my criticisms Mr. Bigg says that my first argument is illogical, but he must pardon me if I say that I do not think what I actually said admits the interpretation that he put on it. Surely, if there are many women who are better and far more comfortable for having abandoned corsets, and if those brought up without them never feel the need of them, it is quite logical to argue a strong probability that the majority would be better without them. Mr. Bigg's answer to the respiratory argument does not to me appear convincing. He quotes a statement from Marshall's "Physiology," which leaves it an open question as to whether pectoral breathing is due to stays or a provision to meet women's special need. He then says that he closely watched some young ladies playing hockey, many of whom did not wear corsets, and that, as he anticipated, they all breathed pectorally. I should myself have anticipated this. In people out of breath, both men and women, all the breathing capacities are brought into play, and the pectoral type becomes most obvious, especially in women, whose prominent breasts make it show more than is the case with men. If Mr. Bigg will watch some men under the same conditions, as, for instance, during the intervals of a game of Rugby football, he will see that they also breath pectorally.

It seems to me, however, that breathing is never exclusively of one type, and therefore it is more correct to say that the pectoral or abdominal form predominates. To appreciate fairly the comparative degree of each type, I think it is essential to have the subject not breathless but breathing quietly and naturally as when at rest. The observations can be best made if the subject is stripped to the waist, though this is not necessary if the clothes fit closely to the figure and are not too thick. In a period of eight years of chest work I have examined a considerable number of people of both sexes who were free, or nearly free, from lung mischief. I was able to observe their breathing while lying flat on their backs or standing upright, and I came to the conclusion that women who do not wear stays breathe abdominally as much as men, while even those who wear them show a considerable amount of abdominal breathing when their stays are off. I can also support Dr. J. Kirkland's statement about the breathing of uncivilised women. Some years ago when travelling in the South Sea Islands I had the opportunity of observing the Samoan and Tongan natives. Many of their women walk about bare to the waist, and I can only say that their breathing did not appear to me to be more predominantly pectoral than that of the men; moreover, they were splendidly developed and upright in carriage, and possessed figures which put to shame the majority of civilised women.—I am, Sir, yours faithfully,

CECIL E. FISH, M.B. Cantab.,
West Worthing, Jan. 29th, 1910. Vale of Clwyd Sanatorium.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—Early this year I had a somewhat similar experience to that recorded by Mr. Sinclair White in THE LANCET of Jan. 22nd. I performed posterior gastro-jejunostomy upon a man, 36 years of age, on account of a chronic duodenal ulcer. Clamps for the stomach and bowel were used.

At the conclusion of the operation the condition of the patient was far from satisfactory; he was pale and presented the appearance of a person about to vomit. This I attributed to the effects of the anæsthetic. Almost immediately on his return to the ward a nurse was sent with the urgent message that the patient had vomited a pint of blood. For the moment I was not quite sure what to do, for it was by no means clear whether it was the ulcer or my wound that was bleeding, though of course the probabilities were greatly in favour of it being the wound.

Fortunately, there was some delay in the next case being brought to the theatre, so I was disengaged and at liberty to go to the ward and ascertain the true state of affairs. Just before my arrival at the bedside the man again vomited a pint of blood. His condition was now very alarming, and it was clear that something must be done immediately or the man would certainly die. He was at once replaced on the ambulance and taken back to the theatre. Whilst my house surgeon transfused him I re-opened the abdominal wound, brought the stomach to the surface, opened it by a transverse incision, and grasping it with my thumb in front and fingers behind made the posterior wall and gastro-jejunostomy opening protrude through the anterior stomach wound. Two bleeding points where the anastomosis had been made were seen at once and ligatured. The wound in the anterior wall of the stomach was brought together and the abdominal wound closed. For some hours our patient was in a very precarious condition. However, I am glad to say he made an uneventful recovery.

If other surgeons have experienced a similar calamity after the operation of gastro-jejunostomy, I trust they may be induced to say so, for it is a complication I have hitherto never considered, but should it occur is obviously one of very great moment. If the operation can easily and safely be performed without the use of clamps, it would certainly appear advisable to dispense with them as a general rule.

I am, Sir, yours faithfully,
Liverpool, Feb. 1st, 1910. R. W. MURRAY.

THE PANCREATIC REACTION IN THE DIAGNOSIS OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—I have recently been preparing a paper on my experience of the "pancreatic" reaction during the past five years, and I find that out of 1475 cases that I have examined during that time duodenal ulcer was said to be present in 50. Of these, 27 gave a positive "pancreatic" reaction. In a few instances the pancreatitis may be due to direct involvement of the pancreas, but in the majority it probably arises from an extension of the associated duodenal catarrh to the pancreatic ducts, and the fact that only 5 out of 47 cases of gastric ulcer gave a positive reaction lends support to this view. If a complete analysis of the urine is made, and the results of this are checked by a qualitative and quantitative examination of the fæces, there is usually little difficulty in distinguishing a positive reaction due to duodenal ulcer and intestinal catarrh from one arising from the presence of gall-stones, apart even from the clinical symptoms.

I am, Sir, yours faithfully,
Beaumont-street, W., Jan. 28th, 1910. P. J. CAMMIDGE.

"IN PIAM MEMORIAM."

To the Editor of THE LANCET.

SIR,—I was pleased to see under this heading an appreciative notice of Dr. Henry Jeaffreson from the pen of Mr. Hampton Brewer in THE LANCET of Jan. 29th. I am one of the few left who remember him well. I cannot at this distance of time recall the precise date at which I used to attend his work amongst the out-patients of St. Bartholomew's Hospital, but it was probably in the earlier "fifties." He was a man of spare habit, but strongly made, of moderate height, alert and intelligent, and of singularly pleasing address. Of course, I as a student remember him chiefly as a teacher, and he impressed me with his skill and rapidity in diagnosing disease and with his frequent reference to facial expression as a means of diagnosis. He was the only teacher I can recall who ever said a word to me on the art of prescribing and of framing an "elegant" prescription. He would refer to the long prescriptions of the old physicians, containing 40, 50, or more ingredients, and then laughingly compare them with the abbreviated prescriptions of our hospital pharmacopœias reduced to a few hieroglyphics, Hst. Gent. c. Rheo, Mist. Q. c. Ferro, and the like, of which the practitioner only learns the value long after he has left the hospital. He could, with his long slender fingers, define areas of dulness of lung and heart in a way that I have never seen equalled and was to us highly instructive. Few students attended his out-patient practice, but those who did so became warmly attached to him and carried with them pleasant memories of his urbanity and unfailing kindness of manner to the poorest of the poor, and, I may add, to the dirtiest of the dirty. There was a story told of him, illustrative at once of his strength and his promptitude, that one day walking down Finsbury Pavement, he felt a tug at his coat tail; slipping his hand to his pocket he seized the hand he found there with so firm a grip that the thief had to follow him, shouting for mercy, till Jeaffreson, thinking he had inflicted punishment enough, let go, and walked calmly on without once turning round. I am, Sir, yours faithfully,

Jan. 31st, 1910. HENRY POWER.

"A VICTIM TO SCIENCE."

To the Editor of THE LANCET.

SIR,—Will you allow me to add a few words to what has already appeared in your columns about the case of Mr. Cox, whose sufferings in the cause of science have caused such widespread sympathy? I am not qualified to say anything on the medical aspect of the case, but as a clergyman of nearly forty years' experience I have witnessed much suffering and known many brave and patient sufferers. In all that time, however, no sadder case has come before me, nor have I ever met with more heroic endurance. I do not hesitate to say that Mr. Cox presents an object-lesson of the most noble character in the way he bears his terrible trial, and in this he is most wonderfully helped by his wife. They are parishioners of mine, and it gives me the greatest pleasure to support the appeal made by Sir William Treloar, which, I am thankful to know, is meeting with valuable assistance. The strain on Mr. and Mrs. Cox's resources has necessarily been very great, and they ought not to be allowed to bear this in addition to the great weight of his sufferings, uncheered by substantial and sympathetic help.

I am, Sir, yours faithfully,
JOHN GARDNER-BROWN,
Vicar of St. James', Clapton.
St. James' Vicarage, Clapton, N.E., Feb. 1st, 1910.

TUBAL PREGNANCY FOLLOWING EXTERNAL MIGRATION OF AN OVULE.

To the Editor of THE LANCET.

SIR,—A case under the above title is mentioned on p. 335 of THE LANCET of Jan. 29th.

While agreeing with your Paris Correspondent that the *probable* source of the ovule was the ovary of the opposite side, the fact that the ovary on the same side as the pregnant tube was cystic does not of necessity prove that the ovule originated in the ovary of the opposite side. 15 years ago I assisted at an operation for early rupture of a pregnant tube at which both ovaries appeared universally cystic, filling the pelvis, and were removed with the tube. The case impressed itself on my mind because of the difficulty in assigning a source for the ovum. Did the ovum come from one of the cystic ovaries or from ovarian tissue elsewhere?

I am, Sir, yours faithfully,
Plymouth, Jan. 31st, 1910. C. HAMILTON WHITEFORD.

SUNSHINE IN THE CHANNEL ISLANDS.

To the Editor of THE LANCET.

SIR,—In supplement to the letter published by Dr. H. Draper Bishop, medical officer of health of the States of Guernsey, in THE LANCET of Jan. 8th, I should be very thankful if you allow me to state that the official numbers of hours of sunshine as published by the Meteorological Office for the last four years are as follows:—

	1906.	1907.	1908.	1909.
Jersey	2003	1839	2001	1999
Guernsey	1973	1856	1933	1971

I am, Sir, yours faithfully,
Dr. P. CHAPPUIS,
Medical Officer of Health, States of Jersey.
St. Helier, Jersey, Jan. 28th, 1910.

CHOLERA AND PLAGUE IN EUROPE AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE following figures are given in continuation of those appearing in my last letter [1]:—

Between Oct. 18th and 24th	246 cases,	137 deaths.
,, ,, 25th ,, 31st	179 ,,	117 ,,
,, Nov. 1st ,, 7th	100 ,,	52 ,,
,, ,, 8th ,, 14th	175 ,,	60 ,,
,, ,, 15th ,, 21st	84 ,,	45 ,,
,, ,, 22nd ,, 28th	121 ,,	64 ,,
,, ,, 29th ,, Dec. 5th ...	(92 ,,	55 ,,)
,, Dec. 6th ,, ,, 12th ...	(83 ,,	30 ,,)
,, ,, 13th ,, ,, 19th ...	(29 ,,	10 ,,)

(All the above-named dates are according to the Old Style.)

The figures for the last three weeks in the table are uncorrected and appear therefore between parentheses. During the nine weeks in question the list of infected towns and governments was a gradually diminishing one; it included at some time or other during the period the following: the governments of St. Petersburg, Esthonia, Livonia, Vitebsk, Yaroslavl, Kostroma, Nijni-Novgorod, Astrakhan, Pskof, Kief, Kursk, Poltava, the Taurida, Kovno, Baku, Ekaterinoslav, the Don Territory, and the towns of St. Petersburg, Moscow, and Kaluga. A large number of towns and governments have been declared free from the disease, and in the last week of the above period only the towns of St. Petersburg, Moscow, and Kaluga, and the governments of Ekaterinoslav and Baku appear in the list. The behaviour of the disease in Moscow deserves some notice. The first case was seen there on June 26th (Old Style); it was followed by a few sporadic cases, mostly imported from elsewhere. Down to Sept. 9th only 12 cases with 8 deaths had been seen in this large city. Between the last date and Nov. 2nd 8 more cases occurred, followed by 1 more in the following week. Then, on Nov. 17th, a rather severe outbreak began, mainly among women employed in a rag-picking establishment connected with a night refuge. Later, other women and men were attacked. Down to Dec. 5th (18th) 155 cases and 84 deaths had occurred in Moscow since the appearance of the disease there in June. Quite recently St. Petersburg itself has been declared cholera free, and it may be hoped that the disappearance of the disease there may be final—at any rate, for some considerable time to come.

The *Novoe Vremya* says that on Jan. 23rd the last of the cholera patients was discharged from the Alexandroffsk Military Hospital, St. Petersburg. During the whole period of the epidemic—since 1908—the number of patients has been 16,594, of whom 6666 have died. The only patients now in hospital connected with the epidemic are 11 suspects.

Cholera in Persia.

The outbreak of cholera in the Persian town of Astara, mentioned in my last letter, seems to have come to an end on Dec. 15th. Details of this outbreak are still wanting.

Cholera in Germany.

In the week ending Nov. 11th a single case of cholera was registered in the arrondissement of Niederung, in the Prefecture of Gumbinnen. In that ending Nov. 18th another case occurred here, and a case was also reported from the Heidekrug district. In the week ending Nov. 25th two new cases were reported from this last district; both had been "isolated in a lazaret since the 6th" (? 16th). The next five days passing without further cases, the infected districts of Germany were declared cholera free, under Art. 9 of the Paris Sanitary Convention (1903).

Cholera in Belgium.

The last case of the disease in Belgium appears to have occurred on Oct. 27th. According to a report addressed on Oct. 30th by the Belgian Ministry of the Interior to the Ministry for Foreign Affairs, the outbreak in the neighbourhood of Antwerp began on Oct. 19th in a labourer employed on the works of the Villebrock Canal. The other cases occurred among the relations and neighbours of this labourer. They and their families were isolated in an outbuilding of the hospital at Boom. The last case on the 27th occurred in one of these isolated "contacts."

---

[1] THE LANCET, Dec. 18th, 1909, p. 1857.

Reappearance of Plague in Jeddah.

It will be recalled that in each of the last four years outbreaks of plague have been observed in Jeddah, on the Arabian coast of the Red Sea. They have nearly always begun in December or January. The 1906 outbreak was an exception, as it began in May. Recently a fresh case of the disease has been observed there. On Jan. 8th an Indian native of the place was found to be suffering from plague; he had been ill for three days; he died on the 10th. It is also reported that a suspected case of the disease has been landed from a pilgrim ship arriving from Jeddah at the lazaret of El Tor. In consequence of these cases both the Constantinople and Alexandria Boards of Health have declared the returning Haj "brut," and decreed measures accordingly. The principal measures applied in Turkey are the following. Pilgrim ships returning by the Suez Canal will do, in addition to the measures undergone in the Tor lazaret, a supplementary quarantine of three days in a Turkish lazaret, with disinfection. Those going to the Yemen and Basra will do five days' quarantine with disinfection. Pilgrims arriving at Yanbo from Jeddah will undergo a medical visit on arrival. All pilgrims leaving Jeddah will be subjected to medical inspection, and all ships will have their rats destroyed by a Clayton apparatus, with which the port of Jeddah has recently been provided. Pilgrims returning by the Hedjaz Railway will undergo five days' quarantine in the Tebuk lazaret.

Plague in the Kirghiz Steppes.

The endemic centres of plague in the steppe regions to the north of the Caspian Sea, which were described in a former letter,[2] appear to be still active. Between Nov. 5th and 27th (Old Style) the disease broke out, in both its bubonic and pneumonic forms. in four "*zemlianki*" (half underground huts) in the Kirghiz encampment of Beis-Kulak, situated five versts from the "*stanitza*" (settlement) of Glinensk in the Uralsk province, and 60 versts from that of Novaia Kazanka, in the government of Astrakhan. During the period mentioned 14 cases occurred, and of these 13 died. A medical mission was sent to the infected place and measures taken, among others the inoculation against plague of the surviving inhabitants. No further cases have since been reported from this district. But a telegram dated Dec. 7th (Old Style) has since been published in the papers to the following effect: The infected region of the Kirghiz steppes extends for a distance of 14 versts. and includes three adjoining districts (*volosts*) of two *uyezds*—those of Uralsk and Lbishtchensk, lying 135 to 150 versts from the town of Uralsk. Between Nov. 12th and Dec. 4th (Old Style) 37 persons died from plague in this region, and at the date of the telegram 31 were still under treatment.

The Cholera Epidemic of 1907 in Russia.

It is remarkable that, according to the figures contained in the annual "Report on the Public Health" in Russia for 1907, which has just made its appearance, that year was, generally speaking, a comparatively healthy one in spite of the cholera-epidemic. The mortality in European Russia fell to 27·8 per 1000 of the population, and was the lowest for the last 20 years. The total number of cases of cholera registered was 12,716, and of deaths 6421. The mortality from the majority of other infectious diseases was below the average. In European Russia, with an estimated population of 80,000,000, the number of deaths from scarlatina was 93,448; from measles, 75,161; from typhus, typhoid. and relapsing fever, 61,404; from whooping-cough, 49,758; from diphtheria, 43,982; and from small-pox, 35,364.

---

[2] THE LANCET, April 24th, 1909, p. 1197.

DONATIONS AND BEQUESTS.—The late Miss Mathilde Dresden has by will left £500 to the Middlesex Hospital, £200 being for the Medical School and £300 for general purposes.—Sir John Llewelyn has given £1000 to Swansea Hospital building fund.—Under the will of the late Mr. James Smith of Liverpool the David Lewis Northern Hospital, the Wallasey Cottage Hospital, and the Victoria Central Hospital, Liverpool, will each receive £1000.

BRISTOL AND THE WESTERN COUNTIES

(FROM OUR OWN CORRESPONDENTS.)

Ordinances and Regulations of the University of Bristol.

As I announced last week, provisional ordinances and regulations of degrees, certificates, and diplomas have been issued by the Council of the University and are in force as regulations pending their submission to the Court. The degrees and diplomas to be obtained in each of the faculties are defined. In the Faculty of Arts there are a Bachelorship and a Mastership as well as a Doctorship of Letters (B.A., M.A., D.Litt.). There is also a diploma in Education. There are a Bachelorship of Science, a Mastership, and a Doctorate (B.Sc., M.Sc., D.Sc.), the latter being granted as a recognition of distinction in the field of scientific research. A candidate may become a B.Sc. on research without examination. In the Faculty of Engineering the degrees are Bachelor, Master, and Doctor of Science in Engineering. Certificates in the various branches of engineering are also obtainable. It is, however, for the purpose of explaining the degrees in Medicine that these notes are written. They are as follows: M.B. and Ch.B., M.D., Ch M., B.D.S., and M.D.S. In addition to Bachelorships and Masterships in Dental Surgery, there will be a diploma entitling its holder to call himself a Licentiate in Dental Surgery (L.D.S.). There is a Diploma in Public Health (D.P.H.) and one in Veterinary State Medicine (D.V.S.M.). For the qualifying degree (M.B., Ch.B.) there are three examinations, covering a minimum course of five and a half years of study. The first examination coincides with the intermediate examination of the Faculty of Science, candidates being, however, obliged to take chemistry, physics, botany, and zoology without option. A year's instruction in these subjects is required of candidates for this examination. The subjects of the second examination are: (*a*) organic chemistry and elementary anatomy, and (*b*) advanced anatomy and physiology. Parts (*a*) and (*b*) may be taken together or separately. The final examination may also be taken in two parts; the first part, consisting of materia medica and pharmacy, pharmacology and therapeutics, and general pathology with morbid anatomy and bacteriology, may not be taken until the student has completed his fourth year of medical study. The remaining part of the examination may not be taken except by students of five and a half years' standing. Three of such years at least must have been spent in the University, two of which must have been subsequent to passing the second examination. ("In the University," so far as clinical work is concerned, will include study at the Royal Infirmary and at the General Hospital.) The subjects of this second part are: special pathology; forensic medicine, toxicology, and public health; obstetrics, including diseases of women; surgery (systematic, clinical, practical, and operative); and medicine (systematic, clinical, and practical), including mental diseases. Provision is made for excusing old Bristol students from certain parts of the University examinations for the M.B., Ch.B. The degree of M.D. may be taken in general or in State medicine. The degree in general medicine is obtainable either through a general examination or through a dissertation; in the latter case the candidate will be examined in the subject and in the branch of medicine to which his dissertation refers. In State medicine the candidate must hold a D.P.H. and satisfy the examiners in applied chemistry, pathology, and sanitary science, with any two of six optional subjects. Candidates for the degree of Ch.M. must present a dissertation; this, if of sufficient merit, may be held to excuse the general examination in surgery otherwise required, except that in all cases an oral examination in clinical and operative surgery must be passed. The regulations referring to the Diploma in Public Health are lengthy; all that need be said here is that the examinations for the D.P.H. are two, the first being in applied chemistry and applied pathology, and the second in public health and epidemiology, sanitary law, vital statistics, and sanitary reporting. The Bachelorship of Dental Surgery is obtained after passing four examinations and after five years of dental surgery, three at least within the University. Details as to the Mastership and the Licence in Dental Surgery are also published at length. The regulations relating to the Diploma in Veterinary State Medicine are not yet forthcoming. One or two points of special interest in the attendance regulations remain to be noted. Elementary anatomy includes a course of lectures on osteology and the dissection of one limb; advanced anatomy, five terms, including two winter sessions and one winter session of dissection. In medicine and surgery three years' hospital practice is required, with proficiency in clinical pathology. The course of pathology is to include 12 months' attendance at post-mortem examinations. In obstetrics the student must attend either 25 cases of labour at an approved lying-in hospital or 30 cases in an approved extern department. Certificates in anæsthetics are to cover not less than 30 administrations. Candidates for the Ch.M. must attend the surgical practice of some approved institution for at least two years after taking the degrees of M.B., Ch.B. This outline suffices to show that the policy adopted by the University is to set a high standard of attainment, so that its graduates (who are not likely to be numerous at first) may from the very outset carry into the world of practice efficient knowledge and skill, and thereby justify the existence of a University school of medicine in Bristol.

Feb. 1st.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

Professor J. W. Taylor has resigned the chair of Gynæcology and the Council has passed the following resolution: "That the Council accepts the resignation of Professor Taylor with great regret. It desires to convey to him its thanks for his services to the University and its best wishes for his restoration to health." Dr. Robert M. Simon, physician to the General Hospital, has been elected to the chair of Therapeutics, which was vacant by the death of Professor Foxwell. On the nomination of the Dean of the Medical Faculty the Council has appointed Professor Peter Thompson Sub-Dean of the Faculty. Mr. George Heaton, surgeon to the General Hospital, has been appointed lecturer in Operative Surgery, and Dr. Edgar P. Hedley demonstrator in Chemistry. Last year death robbed the University of two of its most brilliant teachers, Professor Bridge and Professor Foxwell. It is with much regret that I now record the death of Professor William Hillhouse, who until recently occupied the chair of botany at the University. He was held in very high esteem, both in respect of his personal qualities and his educational attainments. He had been connected with Birmingham as a professor since 1882, when he left Cambridge to join the staff of Mason College. Besides his University work he took an active part in the social and educational work of the city. For many years he was honorary secretary of the Botanical Gardens, and until his death occupied the chair of the Council of the Midland Reafforesting Association. The steady growth of the University is shown by the fact that each year the cosmopolitan character of the students becomes more marked. At the present time there are 79 foreign or colonial students. Siam, Roumania, Argentina, West Africa, Japan, China, France, Poland, Russia, Germany, United States, South America, and Portugal have all sent students. The majority are attracted by the courses in mining, engineering, and commerce, but the medical faculty claims four.

Worcester Eye Hospital.

At the annual meeting it was reported that the out-patients numbered 1112, as compared with 1071 in 1908, and the in-patients 59, as compared with 71. The total income was £563, against £445 the previous year; and the expenditure £537, against £417. Annual subscriptions had increased from £281 to £325.

Tamworth Hospital.

The annual report shows that 232 patients were treated last year, a decrease of 3. The total number of days spent in the hospital by all patients was 6499, as against 7251, the average stay of each patient being 26 days. The cost per head for maintenance worked out at 15*s.* 3¾*d.* per week. The financial statement showed a balance due to the treasurer of £16 12*s.* 11*d.*

Birmingham Education Committee.

In connexion with the Gem-street School for the Deaf it has been decided to establish a course of language for backward children, based largely on finger spelling and writing. The other children are taught on the oral system. There has been a considerable increase in the number of students in the evening classes in lip-reading.

Birmingham Crime.

The statistics prepared by the Chief Constable for the Home Office give the satisfactory information that there had been a decline all round in the crime of the city during last year. There were no cases of murder and a considerable decrease in the number of burglaries, robberies with violence, cases of wounding, and attempted suicide. The indictable crimes per 1000 of the population were 3·72. The number of persons proceeded against for drunkenness was 3552, against 3230 in the previous year. The figures for drunkenness rise and fall from year to year, but reference to a series of years shows a gradual improvement.

Distress in Birmingham.

The wintry weather has accentuated the distress. The building trade is most affected, and the conditions are as bad as those of last year, when the amount of distress among labourers reached its highest level. But the experience of the City Aid Society and Distress Committee shows that the condition of unemployment generally is not nearly so bad as it was last year. Only 1000 names are on the Distress Register as compared with about 6000 last year, and the City Aid Society does not regard the distress as above normal for Birmingham in the heart of the winter.

Feb. 1st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Guardians and Consumption.

BOARDS of guardians seem inclined to consider more closely than has been their wont their relation to, and their responsibility for, the numbers of phthisical cases that fall to their care and keeping. The overtures made by the Chorlton board to that of Manchester, as to jointly approaching the Manchester corporation, and urging the provision of sanatoriums, has not met with a very encouraging response. It was to the effect that the Manchester board was of opinion that it was better for the guardians to treat cases in wards specially provided at their own hospitals. Opinions may very well differ as to the wisdom of this advice. The chairman of the Chorlton board said that the corporation was the proper authority to take up this scheme. It could get at cases the guardians could not reach. It had powers to search for consumptive cases, which the board could not do. It was in touch with such cases, but had nowhere to put them. In connexion with the power of search, of course, early cases, the most hopeful ones, could be put in better conditions for recovery, whereas those that have drifted into the workhouse are, as a rule, too far advanced to allow of much hope. The chairman said that the corporation had not done its duty. "It would be better for it to spend money on a scheme like this, than £100,000 on a new library, and that kind of thing." Whatever may be thought about a new library, it is quite certain that in the public interest, to say nothing of the patients, the sufferers from phthisis ought to be cared for and removed from surroundings bad often for themselves and dangerous to their families. The clerk made an observation, the truth of which is undeniable, that "a corporation sanatorium would attract people who would rather die than go into a Poor-law institution." The outcome of the discussion was the passing of a resolution that the corporation be asked to receive a deputation from the board. More will no doubt be heard of this matter. It is indeed quite time for the Chorlton board to act if the statement, made publicly, is true that the phthisis wards of their hospital at Withington are so crowded that though extra beds have been put up some of the patients have to sleep on the floor, and that there are cases in most of the other wards.

Small-pox in Cotton.

From time to time the cotton towns are liable to the very insidious introduction of small-pox in the bales of cotton. Several cases, four certainly, due to this cause have recently occurred at Heywood through infected cotton from Egypt. All contact cases are being closely watched.

Midwife Censured.

An unregistered and unqualified midwife was severely censured by Mr. J. F. Price, the district coroner, at an inquest held on Jan. 28th on the wife of a man living at Ashton-under-Lyne. The woman died a few minutes after the birth of her child. A medical man said in his evidence that in his opinion death was due to syncope consequent on hæmorrhage. The coroner said that the midwife was greatly to blame for not insisting that a medical man should be sent for, "that it was purely through her ignorance and neglect that the woman had died," and that she ran the risk of being sent to the assizes for manslaughter. As he put it, "it is a very near shave for you." Her escape, it seems, was due to her not having made any formal charge for her services. A good many of these ignorant, unqualified women, the survival of the unfittest, still exist in the North of England.

The Question of Women Residents for the Infirmary.

At a recent meeting of Convocation of the University of Manchester Mr. A. E. Steinthal moved :—

> That, having regard to the interests of women students in the Faculty of Medicine, Convocation desires to suggest to the University Court that they should ask the Royal Infirmary Board to reconsider the question of appointing women to resident posts at the Royal Infirmary.

Dr. Catherine Chisholm, who seconded the motion, said that there should be perfect equality of opportunity between men and women students in the University. Dr. George Ashton said the infirmary had never held out hopes or expectations to women medical students that they would be appointed to resident medical posts there, and the University syllabus containing a statement which had been so construed was compiled and circulated without having been submitted to the Infirmary Board. Medical women should seek their hospital experience in hospitals specially set apart for women or children, or both, and not in a general hospital, where it was extremely difficult to employ them satisfactorily. The resolution was carried by a large majority.

Feb. 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Retirement of Dr. Peter McBride.

Dr. Peter McBride, well known for many years as a leading specialist on diseases of the ear and throat in Edinburgh, was entertained to dinner at the Caledonian Station Hotel on Jan. 28th by his old clinical assistants in the Edinburgh Royal Infirmary. His retirement from professional work was deemed a fitting occasion on which to commemorate his long and distinguished service in the profession. The chair was taken by Dr. R. N. Blaikie, Edinburgh, his first assistant in the infirmary, who was supported by 20 others who had held the same appointment. Apologies for absence were received from many others throughout the country. The chairman proposed Dr. McBride's health in a felicitous speech in which he sketched the rise and development of the ear and throat department in the Edinburgh Infirmary, and referred to the changes which had taken place in the accommodation for patients, in the development of the specialty itself, and in the part which Dr. McBride had taken in its advancement. He also referred to the very high position which Dr. McBride occupied in the profession, to his contributions to the literature of his subjects, and to the esteem in which he was held by his compeers as evidenced by the many honours which had fallen to him. He drew attention to the fact that Dr. McBride, in spite of his busy professional life, had found time for many outdoor sports. In the course of the evening the chairman presented Dr. McBride with an album containing the photographs of most of his old assistants. In his reply, Dr. McBride said that in his early days his knowledge had to be gained by perusing the writings of foreign authors, and much of his spare time had been given to the study of the literature of his subjects. In the course of his remarks he recounted some anecdotes connected with his earlier experiences, and concluded by saying that nothing could have gratified him more than to be received and entertained so kindly by those with whom he had worked. Dr. R. McKenzie Johnston, after proposing the health of the Chairman, said he could not help referring to the very kind way in which Dr. McBride had always treated him as assistant surgeon during the 12 years he had held that position and to the very cordial relations that had always existed between them. Several songs were rendered during the evening, and after "Auld Lang Syne" was sung by the company a very enjoyable evening was brought to a close.

The Medical Inspection of School Children.

The committee for the county of Perth on secondary education, of which Mr. W. Steuart Fothringham is chairman, has submitted the following scheme for the medical inspection of school children within the county of Perth to the Department of Education, which has given it approval under the Education (Scotland) Act, 1908 :—1. That the medical officer of health for the county be appointed principal school medical officer for the county, including burghs therein, except the burgh of Perth. This appointment will be subject to the approval of the county council and the Local Government Board. 2. That the school board of Perth having already appointed a school medical officer, they be left to work out their own school medical service. 3. That an inspecting school officer be appointed at a salary of £350 per annum, rising by annual increments of £25 to £400, besides expenses, to carry out the work of inspection in the county, including the police burghs other than Perth. 4. That the inspecting school medical officer shall consult and coöperate with the medical officers of health for the several police burghs in regard to all matters of public health arising in connexion with his work in these burghs. 5. That the inspecting school medical officer be provided with an office in Perth and the services of a clerk. 6. That the coöperation of the district nurses in the county be secured by contributions to the local nursing associations or otherwise as may be arranged. 7. That the arrangements contemplated under the scheme are that during the first year the thorough inspection of all children entering the school, and of all about to leave the school, would be undertaken, but that in future years those between 7 and 8 years of age would also be inspected. This means that about two-eighths of the children will be inspected during the first year and about three-eighths thereafter. 8. That the half of the total expenditure under the scheme which would be payable by the school boards be apportioned among the boards according to average attendance of pupils at schools within their respective areas. The committee estimate the expenditure under this scheme, to begin with, as follows : salary of inspecting school medical officer, £350 ; expenses of inspecting school medical officer, £100 ; payments to nursing associations, £150 ; expenses of administration, £100 ; total, £700.

Serious Accident to a Speyside Medical Man.

A serious accident, unobserved by anyone, befell Dr. W. Skinner of Ballindalloch early on the morning of Jan. 21st. He was found lying unconscious on the road leading to Peterfair by the forester's men. He had evidently been thrown from his trap, which was lying in a heap beside him, the horse being entangled in the harness. He had lost a quantity of blood and was carried to the nearest farm, where he was attended to by Dr. J. S. Findlay of Glenlivet, who found his injuries severe.

The Diphtheria Epidemic at Keith.

The report of Dr. R. S. Turner, the medical officer, shows that altogether 24 cases of diphtheria were reported during the recent epidemic. Of these, 10 were from the Keith schools, and all the cases were resident in Keith and had been supplied with milk from the same source. Fortunately, no more cases have occurred, and the epidemic is being gradually overcome. The Keith Grammar School and Fife schools, which were closed for a fortnight, have been reopened.

Sidlaw Sanatorium.

The Dundee Royal Infirmary directors had again under consideration on Jan. 27th the proposal that they should take over the Sidlaw Sanatorium, under Mr. Caird's gift of £10,000. A letter from Mr. Caird was read in the following terms : "I regret to see that my letter of the 16th Dec. has been misunderstood and has caused so many meetings and given so much trouble to the directors. Seeing the Sidlaw Sanatorium was to be definitely closed, the suggestion made was that it might be possible for the directors of the infirmary to take it over completely, not to lease and manage it for ten years or any other period. In the event of an absolute transfer to the infirmary I would be glad to be allowed to pay £100 towards any legal expenses which may be incurred." The infirmary directors agreed to Mr. Caird's conditions, and will take over the sanatorium and its endowments absolutely, subject to the right of donors in the endowments. Under the Caird gift those who will have the first call on the institution will be children suffering from tuberculous disease, and after accommodation is found for them the remaining beds will be at the disposal of persons for whom payment is made, including the proposed contribution by the town council. The directors of the sanatorium met on Jan. 28th and unanimously agreed to transfer the building and endowments to the directors of the Dundee Royal Infirmary in perpetuity. The opinion was expressed that the matter might have to be settled by an appeal to Parliament through a Provisional Order. It was arranged that the opinion of counsel should be obtained on the point. In the event of a Provisional Order being required, the buildings will remain closed for several months. It is understood that the endowments will be held by the directors of the infirmary as a separate trust, and that under their management the sanatorium will be conducted financially independent of the ordinary infirmary accounts.

Medical Inspection of School Children at Aberdeen.

At a meeting held on Jan. 27th of the Aberdeen school board, the special committee on the appointment of a chief medical officer reported that Dr. G. Rose had expressed his willingness to undertake the duties at a salary of £550 per annum, with adequate assistance, for which salary he would devote himself exclusively to the duties of the post. It was accordingly moved that the board appoint Dr. Rose as its chief medical officer at the salary of £550 and to claim from him his whole time and the relinquishment of his private practice and other professional engagements for the purpose of fulfilling the duties of his appointment, including the oversight and direction of such reasonable number of assistants as the board may see fit to allow him. It was moved as an amendment that the board advertise for a duly qualified chief medical officer at a salary of £400. The motion was, after some discussion, carried by 9 votes to 5, and it was also agreed that the board accept Dr. Rose's estimate of the assistance that will be needed for fully undertaking the duties of the post—namely, a qualified assistant at a salary of £250, two nurses at £130, and one clerk at £60 per annum.

Feb. 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Floods in Paris.

I HAVE dealt at some length in a separate article with the position of medical affairs as it is affected by the calamitous floods. These are now abating.

Wound of the Left Hip-joint.

At a meeting of the Surgical Society held on Jan. 12th M. Mauclaire made some remarks on a case which had been under the care of M. Jacob. The patient had been shot in the thigh, the wound where the bullet entered being external to the femoral vessels. The injury was followed by suppurative arthritis of the hip-joint with symptoms of septicæmia. A posterior incision having been made by M. Jacob, minute fragments of bone were found in the thickness of the sciatic nerve, and the wound was drained. The patient's temperature fell for several days, after which it rose again. The coxofemoral articulation was then excised and a plaster apparatus with a fenestra was applied. The result was satisfactory, as the patient recovered with incomplete ankylosis and could assume the sitting posture. There was nothing abnormal in the area supplied by the sciatic nerve. M. Mauclaire said that in 1902 he had seen a case in which the neck of the femur was struck by a revolver bullet; the injury was followed by suppuration without any great pain. On making an incision he found that there were fragments of clothing in the track of the bullet. The wound was drained and the patient recovered without ankylosis.

Osteoma of the Brachialis Anticus.

At the same meeting of the Surgical Society M. Mauclaire communicated some clinical observations sent to him by M. Vanderbosch. The patients were four young soldiers who suffered from osteoma of the brachialis anticus after dislocation of the elbow. In three of them the dislocation was not of long standing and had been reduced. Considerable hæmatoma was present, and before long there was a development of osteoma which improved spontaneously after immobilisation in two of the patients, but returned three weeks after removal in the third case. The fourth case of osteoma occurred in a man, aged 21 years, having an unreduced dislocation of the elbow sustained in his eleventh year.

Jan. 31st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Medical Clubs connected with the State Tobacco Factories.

AT a recent meeting of representatives of the medical clubs connected with the Austrian tobacco factories some questions were raised which deserve careful consideration on the part of the medical profession. The meeting consisted chiefly of directors of the managing committees of these clubs, and a number of them asserted that the present system of medical attendance on the workers in these establishments was not altogether satisfactory. Special complaints were made as to the number of persons attended by one unassisted medical man. The representative of the female workers said that she was authorised to state that, as a rule, from 40 to 50 females had to be examined and prescribed for in less than 60 minutes, and that they protested against this summary method of treatment. The tobacco factories are owned by the State, which also pays the salaries of the medical officers of the clubs. It was also asserted at the meeting that State-paid inspectors, mostly old soldiers, were allowed to make quasi-medical visits to patients. Another ground of complaint was that females received little or no attention in respect of ailments peculiar to their sex, because the time allowed was insufficient for the making of the necessary examinations. The meeting eventually passed a resolution calling the attention of the Government to the fact that the factory workpeople were not properly attended during illness because the medical officers were overtasked, and that the workpeople, having little confidence in medical advice given in such circumstances, asked for the services of a sufficient medical staff to be engaged. It is gratifying to find that the members of sick clubs have at last perceived that treatment of patients *en masse* is treatment only in name, and that the providing of a sufficient number of medical officers with adequate remuneration is essential.

National Expenditure for Medical Purposes.

The Budget for 1910 contains some figures which allow a tolerably correct opinion to be formed as to the national expenditure on the public health service and on medical teaching. There are 520 State-appointed medical officers of health in various parts of the country, and the disbursements in this portion of the public health service are estimated at 2,000,000 kronen (£85,000) in salaries only, and there is a further appropriation of 1,000,000 kronen for the prevention of epidemics. The vaccine institute, the serum-treatment institute, the hydrophobia institute, and the seven institutes for the examination of food require an equal sum. The seven medical faculties require 5,500,000 kronen (£250,000), of which sum 2,500,000 kronen are reserved for Vienna. The new clinics are much more expensive to maintain than the previous establishment was, and 400,000 kronen (£18,000) are required in connexion with the increase of the teaching staff as compared with that of last year.

The Physical Care of Children.

Much interest has been taken in the meetings of a committee appointed by the Ministry of Education for the purpose of discussing the best methods of preventing the physical deterioration so noticeable amongst school children in the present day. When it was asserted by competent authorities a few years ago that the physical condition of the rising generation was not satisfactory much alarm was caused. These assertions were made with reference not only to Austria but to several other European States as well. The idea of conducting a scientific investigation of this problem was at once accepted by the then Minister of Education, Baron Gautsch, and it was his efforts mainly which caused the adoption of gymnastics as a regular exercise in the higher schools. At the meetings of the above-mentioned committee several advocates of physical culture expounded their views apart from medical evidence and the suggestions of teachers. Whilst one group advised the so-called German system of gymnastics, another group thought that only the Swedish system was reliable. The difference between the two systems consists in this—that the German one lays most stress on the development of special groups of muscles by making the pupils do different kinds of exercises, whilst the Swedish system approaches the medical side of gymnastics with a view to exercise the whole body, especially those parts which are weakened. Another valuable suggestion was made by several teachers of gymnastics, who recommended open-air sports and running as opposed to our present method of gymnastics in the Turnhalle, or room fitted up with ladders, rings, ropes, and bars with which the children perform various evolutions. The time and duration of our present gymnastic teaching were also severely criticised, and it was claimed that to devote an hour or two in the afternoon to bodily exercise every other day was more useful than to interrupt the hours of mental teaching by interpolating a few minutes of simple exercises for the arms and legs. Military drill was recommended by a number of experts, but the majority of the committee was opposed to the suggestion on the ground that such an experiment has been made already in Vienna with about 16,000 children, boys between 10 and 14 years of age. As regards teaching of rhythmic actions and practice in walking, this method was good, but it was inefficient as a corrective of physical deterioration. Shooting and fencing were not considered by the majority to be advisable for children, although they were very suitable for persons from 16 to 20 years of age. The procedure to which most importance was attached, and justly so, was reliable, repeated, and early examination of all school children by specially appointed medical officers. When it is considered that in Vienna alone there are 250,000 children in schools, and that about 26 per cent. of them are underfed and without the benefit of pure air, it is evident that the first requisite is to supply pure air and pure food in sufficient quantities for them, and then to consider how to improve their development by bodily exercise. The outcome of the meeting was a resolution, addressed to the Ministry of Education, in which all the points mentioned above were elucidated, and financial support for the efforts which the committee is making was requested. As the recommendations will be carried into effect in a short time the physical development of our school children will no doubt be materially improved.

Jan. 31st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Dec. 25th, 1909, show 6550 deaths, compared with 6159 in the week preceding. Bombay Presidency reported 602; Bengal, 656; the United Provinces, 3200; the Punjab, 1392; Burma, 61; the Central Provinces, 498; and Central India, 42.

Health of Bombay.

There was a slight increase in the death-rate in Bombay for the week ending Dec. 28th, 1909, but the general mortality in the city continues remarkably low. The total number of deaths in the week was 538, against 618 in the corresponding week of 1908 and a quinquennial average of 677. Plague remains practically non-existent, except for imported cases, and as we are now at the end of December there seems to be a prospect of another late, and short, plague season, as there was last cold weather. The plague deaths were only five, and of these two were among recent arrivals from Satara and Jamnagar. Last year the figure for the corresponding week was 4. The quinquennial average is 29. Small-pox shows a small, but unwelcome increase. There were 12 deaths for the week, which is four more than in the preceding seven days and twice the average for this time of year.

The Outbreak of Apparent Beri-beri at Calcutta.

There is considerable doubt in Calcutta as to whether it is true that beri-beri has appeared in the native quarters of the town. Epidemic dropsy has certainly accounted for a large number of deaths, but it is not yet established that this is the disease which plays such havoc in the further East. Certain local native practitioners hold that the epidemic is due to the adulteration of mustard oil, largely used in Bengal cooking, with *surguja*. It is significant that the large Marwari community in Calcutta have not been affected by the epidemic, and the fact that they do not use mustard oil is quoted in support of the medical theory. Captain E. D. W. Greig, I.M.S., is now on special duty in Calcutta investigating the causes of the epidemic, and his researches should show whether true beri-beri has appeared. There has been something like a panic among the Bengali middle classes, and it is most important to settle the point at issue. Meanwhile, the municipal authorities might devise means to stop the adulteration of mustard oil, for, whether it is responsible or not for the many deaths that have occurred, its purity should be secured. Even a small quantity of *surguja* in oil generally used for cooking purposes must have an injurious effect.

Lahore Medical College.

The Lieutenant-Governor of the Punjab and Lady Dane attended the annual prize distribution of the Lahore Medical College and School recently. The function took place in the Library Hall. The Principal, Major H. G. Melville, I.M.S., with the College staff, received his honour and Lady Dane, and the Principal read the report for the past year. Sir Louis Dane distributed the prizes and concluded the proceedings with a short address. The College, he said, was one of the best known and finest institutions in the province. Referring to finances, his honour said he was glad that the Government of the Punjab was able to do something for the College during the past year, but the finances of the province, unfortunately, not being in as flourishing a condition as they might be, much expenditure in that direction was not possible. He congratulated the College on the three medical men who had been appointed to the staff during the year. With regard to one of the vacancies, he remarked that there was a good deal of competition for the post of professor of pathology, and Captain W. C. H. Forster, I.M.S., who now held that position, was a gentleman of not only local but of European reputation. He then referred to the very great loss which the College had sustained in their former principal, Colonel F. F. Perry, I.M.S. Last year, Sir Louis Dane continued, he told the students that the hospital assistants in the Punjab were the best educated natives in the province. He was glad to think that this reputation had been kept up. He urged, however, that more students should take medical degrees, in which case their prospects on going in for private practice would be materially increased. Government would be glad to see a large increase of private practitioners, for which there was a great opening in the villages and towns of the Punjab. He hoped that Government would improve the salaries of hospital assistants, which had always been a reproach. In conclusion, Sir Louis Dane impressed upon the students that it was their duty to popularise scientific medicine amongst the people.

Expanding Bullets for Frontier Tribes.

A matter of military medical importance, and one of the worst features of the arms traffic to the Mekran coast and the Persian Gulf, is that much of the ammunition shipped from Europe consists of cartridges with expanding bullets. The use of the dum-dum bullet by our troops has been forbidden by the British Government and cartridges fitted with it are no longer manufactured. But no such prohibition exists in Afghanistan or the tribal country, and our army would thus be handicapped in any future military operations on the North-West Frontier. They will have to rely upon the small solid bullet as against the expanding pattern, which is a "man-stopper" in the ugliest sense of the word. So long as Muscat remains an open port and high prices are paid by middlemen or Pathan traders for modern rifles and ammunition it will be impossible to stop gun running altogether; but action might be taken in England to check the export of cartridges with expanding bullets. Certainly no manufacturers should be allowed to supply these to the Amir of Kabul when he sends his indents to English firms, and no large quantities nominally for sporting purposes should be permitted to leave the ports. It is bad enough that magazine rifles in tens of thousands should have reached Afghanistan and the tribal hinterland, but the danger of the position will be aggravated if cartridges of the dum-dum pattern become common in these tracts. Traders now undertake to give at least 100 cartridges with each rifle sold, and it is only too certain that many of these are of the kind which all civilised powers have agreed not to use in warfare.

Dec. 31st, 1909.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

British Association for the Advancement of Science.

A DEPUTATION recently waited on the Commonwealth Prime Minister to place before the Government a proposal that 100 members of the British Association should be asked to visit Australia in the year 1912. A similar visit to South Africa had cost about £6000, and it was estimated that a sum of £10,000 would be required to defray the expenses of an Australian gathering. The Federal Government was asked to provide this sum for travelling expenses, and the entertainment of the visitors would be undertaken by private citizens and State and municipal bodies. Mr. Deakin gave a favourable reply to the request, and it is probable that satisfactory arrangements will be made to bring about what will be a unique assembly in the history of Australian science.

Home for Aged and Infirm.

The Melbourne *Argus* has drawn attention to the unsatisfactory condition of the Victorian Home for the Aged and Infirm, an institution which receives derelict invalids and infirm paupers. An inmate was recently found dead in bed, and according to the report "visitors who saw this patient before his death state that his body was covered with bedsores and that the only treatment he received while lying on a straw mattrass was the most elementary treatment from unskilled hands." An inquiry was held at which the officials and the visiting medical officer denied there was neglect, but the admissions disclosed a very undesirable condition of affairs. It is said that the position will be remedied by the construction of the new Benevolent Asylum which is being proceeded with.

Bush District Nurses.

A meeting was held by invitation at Federal Government House, Melbourne, to discuss the proposal to provide district nursing in outlying bush districts which has been inaugurated by Lady Dudley. A very representative gathering resulted, and Lady Dudley herself laid the outlines of her scheme before it. The proposals were sympathetically received, and in responding Lord Dudley said that it was intended to appoint a committee of two or three Australians to consider Australian needs and conditions. Upon the committee a representative of Canada and a representative of England would be invited to sit in order to see how far methods adopted in those countries would be applicable. A constitution would be drafted and submitted to a much larger committee. Eventually a Royal charter would be applied for, which would give dignity to the organisation, status to the nurses, and power to the management. With regard to finance, it was impossible now to say how initial expenses were to be met, but present anxiety had been removed by the offer of £500 from the trustees of the Edward Wilson estate, and a further sum if it were required.

Melbourne Hospital.

The plans for the new building are now complete and tenders for the erection of the first portion will be called early in 1910. Some delay was caused by an expression of opinion that the operating theatres were placed too far away from the surgical wards, but this has been adjusted to the satisfaction of the surgical staff, and the plans were adopted at the last committee meeting without further comment.

Strange Disease among Wild Fowl.

A strange outbreak of disease is reported from Benalla in Victoria. The wild fowl frequenting the Winton swamp are stated to be dying in hundreds, and the mortality is greatest among young birds. A clutch of young household ducks which had been quite healthy made off to the swamp, and all died there. A resident noticed a three-quarter grown teal ailing, and on picking it up found that it was paralysed in the legs. It died within a few minutes. During the recent prevalence of epidemic anterior poliomyelitis in one country district it was said that various animals suffered.

Ice Cream Manufacture.

A case came recently before a magistrate in Sydney which he characterised as the worst that he had ever had to deal with. An Italian ice cream vendor was charged with having manufactured his wares in a stable, on the floor of which was a large quantity of manure, and amid atrocious sanitary conditions generally. He was fined £25 or imprisonment for a period of three months.

Personal.

Professor R. J. A. Berry, the professor of anatomy in the University of Melbourne, has been granted a year's leave of absence, and has with his family proceeded to Europe on a holiday trip. Professor Berry was entertained at dinner by the members of the medical profession prior to his departure. —Dr. F. D. Bird of Melbourne has been appointed one of the vice-presidents of the section of Surgery at the next annual meeting of the British Medical Association. Dr. Bird, who has recently returned from a trip to England, will return to take up the duties devolving on him at the Association meeting next July.

Jan. 2nd.

Obituary.

WILLIAM WARWICK WAGSTAFFE, B.A. LOND., F.R.C.S. ENG.

Mr. William Warwick Wagstaffe, whose enforced retirement from the active practice of his profession in 1878 caused such general and sincere regret, died on Jan. 22nd at Sevenoaks. Born in 1843, the son of Mr. Wagstaffe of Kennington, he was sent to Epsom College at the time of its opening. He had there as school fellows Sir Augustus Hemming, Sir Henry Morris, Dr. F. Taylor, and Dr. J. F. Goodhart, who, in common with many other early friends, remained in touch with him during the long period of his retirement. Wagstaffe attained an excellent position at Epsom College, alternating for the first place with Mr. Marshall, for many years resident medical officer at St. George's Hospital. He became prefect, also captain of both the cricket and football teams, and his love for physical exercise and proficiency in games continued until the ability to indulge in them was taken from him. After leaving school Wagstaffe worked at home for two years, attending lectures by Professor Tyndall and Professor Hoffman at the School of Mines, and also at King's College, and in 1861 he obtained a first class in the examination for the B.A. of London University. He entered at St. Thomas's in the same year, obtaining scholarships in classics and mathematics, natural science, and modern languages. Throughout his subsequent course he kept the first position in the school and maintained himself without any further expense to his parents. He became a Member of the Royal College of Surgeons of England in 1864 and proceeded to the Fellowship in 1868. At the University of London he obtained honours in the Preliminary Scientific and First M.B. Examination, but he early undertook so much work in his hospital and school that he was never able to complete his Bachelor of Medicine examinations. On qualification he became house surgeon to the hospital, and then, following the time-honoured course, surgical registrar and demonstrator of anatomy. In 1871 he succeeded Mr. John Croft as resident assistant surgeon, and in that position moved to the new hospital, while on the retirement of his most trusted friend and adviser, Mr. Le Gros Clark, he was appointed assistant surgeon. In 1868 Sir John Simon gave him the post of medical officer under the Privy Council, which he held as a summer appointment until 1870 inclusive. Then the full appointment was offered to him, but he preferred to take up the post of resident assistant surgeon at St. Thomas's and start upon a purely surgical career. He was appointed lecturer on anatomy in the medical school, in conjunction with Francis Mason, became a member of the Board of Examiners in Anatomy and Physiology at the Royal College of Surgeons of England, and in 1875 surgical secretary to the Pathological Society of London, holding office during the presidencies of Sir W. Jenner, George Pollock, and Charles Murchison. In 1878 a sudden breakdown in health necessitated a period of rest abroad, and to the great regret of his colleagues and the hospital authorities, who kept his appointment open for a period of three years, he was never able to return to active work. Wagstaffe's progress in the profession was rapid; he had acquired and held with much credit to himself various important offices at a comparatively early period in his career, and also laid the foundation of a successful surgical practice which was already becoming remunerative, when he was struck down by an obscure nervous malady which slowly but steadily removed from him all power of physical activity. His sympathies were wide, including, as they did, surgery, anatomy, morbid anatomy, and some problems of public health; beyond these, his early training had specially fitted him for the examinership in Arts, which he held from the year 1875 at Apothecaries' Hall.

As a surgeon he belonged to the progressive school, and he worked at some of the subjects which have since come prominently forward, such as the surgical treatment of intestinal obstruction. Thus he was an early advocate of the direct reduction of intussusception, and himself performed the operation. His judgment and technical powers were very good, and had circumstances permitted his taking part in the great advances about to develop in practical surgery there is no doubt that he would have taken a leading position. In the out-patients' department his powers as a diagnostician and teacher were much appreciated. The prominent feature of his work, however, was the application of his anatomical knowledge to the study of morbid anatomy, which latter at that period was at the height of its popularity as a means of elucidation of the problems of pathology. In the anatomical department his efforts were especially directed to the practical application of the science. He was also a good draughtsman, and took much pleasure in lecturing on such subjects as the muscles of expression or the outlines of the human body. He was lucid and fluent as a lecturer or demonstrator, holding the attention of his class, which was always orderly and well behaved, in days when the lecture room occasionally tended to degenerate into the bear garden. He wrote a work on "Human Osteology" in which are embodied a number of original observations on the mechanics of the human frame, also a students' guide book, the object of which was to make the subject of human mechanics more attractive.

Wagstaffe's first papers were on Human Anatomy and Animal Physics and were published in the *Journal of Anatomy and Physiology* and in the St. Thomas's Hospital Reports; the later ones dealt with surgery and pathology and appeared in the Transactions of the Pathological Society, the St. Thomas's Hospital Reports, and the medical journals. His energy and determination of purpose are well illustrated by the fact that when disqualified by illness from practical work he busied himself for some years in writing reviews for the *British Medical Journal*, and the *Medical Record*, he translated Heiberg's "Atlas of Nerve Areas," edited Le Gros Clark's "Outlines of Surgery," and the third edition of Mayne's "Medical Vocabulary." Meanwhile he retained an active interest in all the advances of surgical science; even to the end he was well versed in what was going on, and in what may be called the family life of his old school he kept himself as conversant as if he had still been present there. Thus, although outside the current of his profession, he maintained relations of real friendship with his old associates, and they again could visit him with pleasure and profit. Indeed, no more striking object-lesson of resignation to a hard lot, combined with the power and determination to make the best and brightest of it, can be conceived than the life of Wagstaffe during a whole generation. No word of complaint left his lips, and he remained the genial kindly spirit his friends had known, physically incapacitated, but mentally as bright and active as ever.

Mr. Wagstaffe married a daughter of the late Mr. F. W. Tetley of Leeds, who survives him, and has left one son now engaged in the study of his father's profession at St. Thomas's Hospital.

An old Epsomian sends us the following eloquent testimony to the qualities of Wagstaffe:—"My acquaintance with William Warwick Wagstaffe began when we were among the first 100 boys to enter Epsom College at the very outset of the active life of the school which commenced on Oct. 10th, 1855. Though my senior in years and position in the school W. W. Wagstaffe and I soon commenced a friendship which continued uninterruptedly till his death, on Saturday, Jan. 22nd last. I used occasionally to go with him to spend from Saturday till Sunday night at his home in London, and afterwards I lived with him at the house of his widowed mother, during my first two years at Guy's Hospital, and when he was a student of St. Thomas's Hospital, then temporarily located in the old Surrey Gardens. I thus came to know the other members of his family. He was one of four, three sons and a daughter, the children of Mr. M. F. Wagstaffe, a medical practitioner residing in Walcot-place, Kennington. His father died just about the time, or a little before, W. W. Wagstaffe commenced his hospital career. His eldest brother was an architect and his second brother, Matthew Mawe Wagstaffe, who was also one of the first batch of Epsom College boys, became a solicitor. W. W. W., or Will Wagstaffe, as he was always called by his intimates, was the youngest son, and decidedly the brightest and cleverest of his family. He was, too, the favourite; and it was evident to me, living with them as I was, that the others appealed to his judgment and deferred to his opinion in all sorts of questions of a general as well as of a family nature. At Epsom he soon took a leading position, and, like his brother Matthew, early became a prefect. He was foremost in all games, and in every movement which concerned the sports, matches, and entertainments of the school. He succeeded the late Herbert Lee of Thame as captain of the cricket club; he was also captain of the XV., and took a prominent part in the theatrical performances which used to be given in those days, but which have long since been discontinued. At cricket he was excellent all round, but his special forte was wicket-keeping, and it is easy to recall him passing from wicket to wicket walking with a slight jerky spring in one foot, his cap pushed back from off his broad high forehead, his keen steady grey-blue eyes glancing all over the field, and a half-amused, half-satirical smile playing around his mobile lips. He was liked by the masters because of his intelligence and his sane regard for discipline; whilst he enjoyed the respect and admiration of his schoolfellows because of his ability and industry, and because of the stability and reliability of his character. After leaving Epsom both he and his brother Matt graduated B.A. of the University of London, and in 1868 W. W. W. became a Fellow of the Royal College of Surgeons of England.

At St. Thomas's Hospital, where he gained the entrance scholarship, he evinced the same characteristics which he had shown himself to possess when at school. He soon became a leader amongst the students, and a mutual regard sprang up between him and several of his teachers—namely, Drs. Peacock and Bristowe, and Messrs. Solly and Le Gros Clark. With the last named he kept up an enduring friendship. In 1870 he was demonstrating anatomy with Mr. George Rainey and Mr. John Croft; in 1872 he was assistant surgeon and lecturer on anatomy at St. Thomas's, and in this year he edited the second edition of Mr. Le Gros Clark's 'Outlines of Surgery.' From 1874 to 1876 he was co-editor of the St. Thomas's Hospital Reports; from 1875 to 1877 he was surgical secretary of the Pathological Society of London, and in 1875 he published 'The Student's Guide to Osteology' and some original observations on the 'Mechanical Structure of the Cancellous Tissue of Bone.' Through the influence of his friend and teacher, Sir John Simon, he was made a medical inspector of vaccination, and his discreet and courteous bearing in this appointment made his official visits, as I have reason for knowing, pleasant and agreeable to the practitioners whose work it was his duty to inspect. He was an examiner in Arts for the Apothecaries' Society, and in 1877 he was elected to the Board of Examiners in Anatomy and Physiology at the Royal College of Surgeons. In the same year he, together with the writer and a few others, founded the Old Epsomian Club. He was clearly rising early into prominence, and was looked upon as one of the most promising of the younger surgeons in London, when signs of a spinal nervous disorder began to show itself, and he had to retire for a prolonged rest. Only too soon, however, it became obvious that though he had been rowing well and strenuously Fate was steering the boat, and that, despite his great merits, an uncontrollable influence was frustrating his activities and would entirely disinherit him of the success he so thoroughly deserved. But,

'There is a pleasure which is born of pain:
The grave of all things has its violet.'

To Wagstaffe, from the distress of advancing spinal disease came the great happiness of his life; from the grave of his professional hopes sprang the 'violet' of the days to come. It was in the early months of his affliction—now some thirty years or more ago—when abroad on a long respite from work, and before he had absolutely given up all prospects of resuming his hospital appointments, that he met the lady who became his wife and the mother of his only child —the wife whose marvellous sympathy and care, whose unparalleled devotion were to be the solace, the protection, and the gladness of all the remaining years of his life. Wagstaffe was never again to return to work. Slowly, slowly, but surely his paralysis increased, until at length he was a living, active, busy intelligence encumbered with an unresponsive, helpless, motionless body. Poor fellow! How bright and cheery with it all he persisted in being. In what enthusiastic tones he greeted one on entering his room, and how gently and endearingly he said 'Touch me, touch me somewhere, on the head or face, or somewhere'; asking this as a substitute for a shake of the hand, no finger, no joint of which was he at last able to move or direct. What an abiding, what an everlasting, lesson in gratitude, courage, long-suffering, and unselfishness he has been to us. And he would say, 'How can one be otherwise than patient and grateful under trial, when every care and comfort is rendered by a tender and devoted wife and those she appoints to assist her; when one can follow the education and the progress of a good son; and take a real and watchful interest in the careers of one's closest and dearest old friends'; and he might have added whilst one can thoroughly enjoy being read to, and can dictate letters to friends and a report on the annual rainfall to the local meteorological journal, which he did up to the very last. And yet he suffered frequently, and at times severely, from lightning-like pains which made even the movement of his tongue or jaw in speech or mastication a torture. One would thus suppose that many a day he must have felt 'half in love with easeful death.' But no; he did not look upon his life as 'one long sorrow,' but rather seemed to see 'the smallness of each moment's pain,' as if he 'could look for help to-morrow, and so each day begin again.'

In some of his letters he would give an account of his attacks of pain, never, however, in a querulous or complaining way, but he would jokingly, and sometimes even facetiously, describe the vagaries of their oncomings and off-goings. The most wonderful feature of his nature was the keen, unselfish, lively interest he took in the work and progress of the institutions he had been connected with, and in the occupations and lives of his old friends and fellow students. What were they doing? How were they succeeding? Were they receiving the rewards of their labours? If he thought recognition of their merits was tardy, then why did it lag? Why did it not come quicker and in fuller abundance? Such were the questions concerning others which vividly engaged his thoughts as if they personally involved himself. In this respect, indeed, his remarks often recalled to the present writer that simple but very pathetic and beautiful lyric by Adelaide Anne Procter, entitled 'True Honours,' wherein a blind man relates to his little niece the joy and gratification he had realised when the three great dreams, the three-fold crowns, of honour which in his youth, and before total darkness had enveloped and disabled him, had absorbed his own heart and brain and ambition—when these same honours had been acquired, not by himself, however, but singly, by each of his three brothers. Never was a youth of golden promise more completely lost and merged into a maturity of professional successlessness, but never has a painful and bitter affliction had a more beautiful setting of gentle and deliberate resignation. The steadfastness and fortitude of the boy and of the youth developed into the submission and equanimity of the middle-aged and elderly man. And thus he passed on until the end.

He had been living, more or less bedridden, for many years at Sevenoaks; and there on Wednesday, Jan. 26th last, having just completed the 67th year of his age, his body was laid finally at rest in the burial ground adjacent to the parish church. As we walked with measured steps and hats in hands from the church to the open grave which was to embosom him in the earth, one could not in his case do otherwise than feel the appropriateness of those words of thankfulness for the delivery of 'this our brother from the miseries of this wicked world' which we had just heard read—words which, however, in the case of so many others who have been taken from us it seems so hard to utter. But we knew, as we followed it, that from this lifeless and long paralysed body a spirit of calm endurance and patient hope had taken its speechless flight. The day was chilled with a nipping and an eager air, the turf was white with hoar frost, and very low down in the leaden grey sky straight in front of us was the dull red orb of the setting sun, giving promise of a night in which the risen stars would brightly shine, 'waiting for the dawn of day.'"

WILLIAM ILBERT HANCOCK, F.R.C.S. ENG., L.R.C.P. LOND.

ASSISTANT SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL.

William Ilbert Hancock, whose untimely and sudden death occurred on Jan. 26th, was born at Wiveliscombe in Somersetshire in 1873. He was the son of Mr. William Hancock, and the youngest but one of ten brothers, all of them keen sportsmen, two of whom were international football players. Hancock himself was a fine athlete with splendid physique. He was a first-class cricket, football, and lawn tennis player, and in addition was a good shot though he was so modest of his achievements that few of his later acquaintances had the least idea of the laurels he had won. He played for his county at tennis, cricket, and football, and represented Guy's Hospital in all three sports in his years of studentship. He was captain of the Guy's football team in 1893–94, and would certainly have gained international honours had he not slipped the cartilage in his knee just before the match in two succeeding years.

He was educated at Dulwich College before entering Guy's in May, 1891. He passed the examination for the Fellowship of the Royal College of Surgeons of England in 1898, in the following year married Margaret Hay Sweet Escott, and it was in the same year that he began the study of diseases of the eye at the Royal London Ophthalmic Hospital. Before this time, though he was interested in his studies, athletics claimed an equal part of his attention, but from the commencement of his work at "Moorfields" he threw his whole energies into ophthalmology and till the time of his death his work was his hobby. It was ever a keen pleasure to him to devise some method, either of improving his technique, or tackling some unusual ocular defect, or to endeavour to solve some problem heretofore insoluble. Except for a period of six months in 1902, spent in assisting Mr. Richardson Cross at Clifton, his whole ophthalmic training was at Moorfields, and he was one of whom that admirable ophthalmic school was justly proud. As time went on he obtained various posts at other hospitals. He was elected ophthalmic surgeon to the Shadwell Hospital for Children (1903), assistant surgeon to the Central London Ophthalmic Hospital (1904), and later ophthalmic surgeon to the Bolingbroke Hospital (1906), at which institutions he did excellent work. It was during his tenure of office at the Central Hospital that a more definite system of ophthalmic instruction was started. Hancock was appointed Dean, and his colleagues recognised that it was in great measure due to his personal initiative and tact in organisation that the new school met with so much success. In April, 1909, after nearly ten years' work as clinical assistant, he was appointed assistant surgeon to the Royal London Ophthalmic Hospital, the coveted post of all old Moorfields students. Wherever he worked he was found to be a strong and loyal colleague, a valuable member of committees, an excellent teacher, and the trusted friend of his patients. Meanwhile, since 1903, he had been building up a private practice, and at the time of his death had attained real success. He wrote several valuable articles on ophthalmic subjects, in all of which he showed great originality of thought, but as far as his work was concerned, beyond being a thorough master of his subject, his chief characteristic was the possession of a rare clinical instinct. As an operator he was recognised by all who saw him as in the first rank. His steadiness, dexterity, and lightness of touch in operating won him a word of warm praise from Professor Fuchs last summer at Moorfields.

Of his personal qualities a close friend writes: "Apart from technical skill, it was the human side of Hancock which was so attractive: his fearless straightforwardness, his absolute want and hatred of all that was mean, his loyalty to his friends and colleagues, his strength of character and wise judgment which drew so many to seek his advice when placed in circumstances of difficulty, his generosity both to patients and friends, and lastly his gentleness and sympathy with children and those in distress." Hancock had thus to an unusual degree the combined qualities which make for success, and he would surely have been one of the best-known ophthalmic surgeons of his day, associated as they were in him with a charm of manner which set all his patients at their ease, a knowledge of what to say and leave unsaid born of an innate courtesy and tact. "Not all," writes one who knew him, "were aware of an undercurrent of active thought and criticism taking place below a quiet and deliberate manner, any more than those who watched him walk with almost lethargic ease could guess that he had been one of the fastest three-quarters and most elusive dodger the Guy's football team ever possessed. But those who were privileged to be his friends could truly say of him he was 'a man with a heart, head, hand ...... one who can rule and dare not lie.' and for them he leaves a place in their hearts and lives which cannot be filled."

The cause of Hancock's death was pulmonary embolism and thrombosis following on a perfectly straightforward operation for appendicitis performed five days before. He has left a wife and four young children, to whom all who knew him would wish to offer their deepest sympathy.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Carlo Gioffredi, lecturer on therapeutics and pharmacology in the University of Naples.

Medical News.

THE PELLAGRA INVESTIGATION COMMITTEE.—A meeting of this committee was held on Friday, Jan. 21st, at 140, Harley-street, with Sir William B. Leishman in the chair, at which Sir Lauder Brunton, Professor W. J R Simpson, Professor E. A. Minchin, Dr. C. F. Harford, Dr. F. G. Melandri, Dr. Louis W. Sambon, Mr. E. E. Austen, and Mr. J. Cantlie were present. Dr. Sambon explained his views with regard to the etiology of pellagra and suggested a plan of investigation. As a working hypothesis Dr. Sambon proposes to endeavour to establish a connexion of the disease with one of the "sand-flies." The following resolutions were passed:—

1. That the committee, after hearing Dr. Sambon's statement concerning the etiology of pellagra, are of opinion that it is a matter of importance, both on scientific and hygienic grounds, that the hypothesis formulated by Dr. Sambon shall be investigated.
2. That the committee are of opinion that any funds raised to defray the expenses of such investigation will be well spent.
3. That a circular be drawn up asking for contributions towards the funds necessary for the investigation.

Already certain sums of money have been put at the disposal of the committee. The Colonial Office has promised £150 on condition that another £450 be found, and both the London and Liverpool Schools of Tropical Medicine are subscribing.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.—At a meeting of the Education Committee of the London County Council on Feb. 2nd the Day Schools Subcommittee reported the receipt of a letter from the Board of Education approving for 12 months the arrangements adopted by the Council on Nov. 30th, 1909, for the medical treatment of school children at 13 hospitals. The Board stated that it must be understood that it, no less than the Council, must regard the arrangement as experimental, and while accepting it on that basis the Board would subject its working to careful scrutiny. The Board stated further that it would, during the next 12 months, take measures to ascertain how far the proposal embodied or might be regarded as leading up to a scheme for attending to the health and physical condition of the school children which would be effective, adequate, and economical, and that it would endeavour to form a considered opinion on the question whether the arrangement was suitable, with or without modification, for continuation after the experimental period. The Board presumed that all reasonable facilities would be afforded to the medical officers of the Board to observe the working of the arrangement, and stated that it must be a condition of its approval of the scheme that the Council would itself reconsider the whole situation at or towards the end of the experimental period, and would furnish the Board with a report upon the general working of the scheme in its administrative, educational, and medical aspects. In conclusion, the Board stated that any further or modified proposals must be submitted to it. At the same meeting the subcommittee reported the result of further negotiations with hospitals for the medical treatment of school children. The Central London Ophthalmic Hospital and the Victoria Hospital for Children, two of the hospitals which had undertaken to provide treatment free of charge, had stated that they now desired financial aid. The effect of these withdrawals would be to increase the number of children for whom provision must be made on a financial basis from 5000 to about 10,000. The subcommittee had considered proposals from additional hospitals which were willing to provide treatment on a financial basis, and was of opinion that the arrangements should be made as follows: the Hospital for Sick Children, Great Ormond-street, W.C. (440 eye cases and 440 ear cases a year); the Royal Eye Hospital, St. George's-circus, S.E. (2000 eye cases a year); St. Mary's Hospital, Paddington, W. (750 eye cases and 500 ear cases a year); the Victoria Hospital for Children, Tite-street, Chelsea (440 eye and 260 ear cases a year). The financial aid consisted of a payment of £50 per annum for each clinical assistant working one half-day a week, and a *per capita* grant of 2*s.* Grants for apparatus were also included for the Royal Eye Hospital and St. Mary's Hospital, Paddington. The authorities of the Royal Eye Hospital proposed to provide increased accommodation by establishing a special department for the treatment of school children, and had asked for a grant towards capital expenditure. The committee of the hospital had been informed that the Council could not assist in this matter. These arrangements were estimated to cost £1350 a year, and provision had still to be made for 5000 children, as to whom the committee promised a further report. The districts in the south-east of London, which were inconveniently situated in respect of hospitals, were receiving special consideration.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Jan. 27th, with Dr. F. H. Champneys in the chair. A letter was received from the town clerk of Norwich forwarding a resolution of the health committee of the corporation suggesting that the Municipal Corporations Association should be represented on the Central Midwives Board. A letter was considered from Mr. M. H. Pope inquiring whether Section 1 (4) of the Midwives Act wholly debars a midwife from deputing a competent, though uncertified, woman to visit a patient on her behalf. The Board directed that Mr. Pope be informed that Section 1 (4) of the Midwives Act is to be read in conjunction with Rule 2.11. A letter was considered from the clerk of the Privy Council as to the proposed amendment of Rule E, 3, so as to empower the Board to enrol women, who, though qualified under Section 2 of the Midwives Act, failed to claim the Board's certificate before April 1st, 1905. The Board decided that the Privy Council be thanked for its letter, and that the suggestion contained therein as to an alternative method of amending Rule B be adopted. A letter was read from the honorary secretary of the East Malling Nursing Association as to the refusal of a local medical practitioner to attend when summoned on the advice of a midwife in the manner provided by the rules. The Board decided that the reply be that the Board has no power to enforce the attendance of a medical man, even on the midwife's request, but that the Board understands that the Malling guardians will pay the medical man for his attendance in suitable cases. In any event the midwife has discharged her duty when she has advised, as required by the rules, that the presence of a medical man is necessary. A letter was read from the county medical officer of Staffordshire inquiring the Board's opinion as regards operative interference by midwives when in attendance on lying-in women, with special reference to the case of a midwife recently cautioned by the Board for inserting two stitches in a ruptured perineum. The Board decided that the chairman be requested to reply to the letter. A letter was considered from Mr. Bertram, the Board's solicitor, asking the Board to sanction the payment of a fee to medical practitioners for making statutory declarations in penal cases. The Board decided that the solicitor be authorised to pay a fee of 1 guinea in such cases. The Board having considered the suggestion made by Mr. C. E. Longmore, clerk to the Herts county council, that, on the hearing of a charge alleged against a midwife, the local supervising authority should have the conduct of the case, decided that the local supervising authorities be asked to communicate their views on the subject.

The Third International Laryngo-Rhinological Congress.—The Third Laryngo-Rhinological Congress will be held in Berlin at the end of August or the beginning of September, 1911. At the general meeting of the Laryngological Society of Berlin, which was held on Jan. 14th of the present year, great satisfaction was expressed at the fact that Berlin would have the honour of receiving the Congress, and the entire board of the society constituted itself the executive committee for the Congress. Upon this committee all the leading laryngologists of Germany will be coöpted. Inquiries regarding the Congress should be addressed to the secretary of the executive committee, Professor Rosenberg, 26, Schiffbauerdamm, Berlin NW.6; or to Dr. Finder, 17, Nettelbeckstr., Berlin W.62, secretary to the international committee.

New Wards at the Royal Infirmary, Preston: A Medical Man's Munificence.—Owing to the generosity of Dr. R. C. Brown three new observation wards for infectious diseases are in course of construction at the Preston Royal Infirmary. The wards form one building and they will be fitted up with the most modern appliances. Dr. Brown has always taken a great interest in the institution, of which he is consulting medical officer. Already he has defrayed the expense of building and equipping a new operating theatre which cost about £2700, and has presented the infirmary with a beautiful organ, a piano, and a pianola. He has also provided a billiard-room and recreation rooms equipped with facilities for games for the use of members of the staff. In addition he has defrayed the cost of a conservatory for convalescent patients and revolving summer-houses for open-air treatment and has installed a complete X ray apparatus.

The Prevention of Glanders in London.—A report was presented to the London County Council on Feb. 1st by the Public Control Committee submitting particulars as to the administration in London of the Glanders or Farcy Order of 1907. From Jan. 1st, 1908, to Nov. 30th, 1909, the Council paid nearly £33,000 in compensation, the maximum in any one case being one-half the value of the horse slaughtered. The estimate for 1910–11 included provision of only £12,000 under this head, the high rate of slaughter maintained hitherto having effected a diminution in the number of distributing centres of glanders. The two most serious difficulties with which the Council had had to contend were the very large number of latent cases in some studs and the recurrence of the disease in a few studs. Experience proved that the spread of glanders had been due largely to the failure of horse owners to take adequate measures for the protection of their horses and to the neglect of the most important precaution urged upon them by the Council—the application of the mallein test to all newly purchased animals. Neglect of this had led to the introduction of glanders into studs hitherto free, and to its recurrence where it had been eradicated at considerable expense. The committee considered that additional powers were necessary to deal with the disease. The local authority should be entitled to destroy suspected nose-bags, as they were very difficult to disinfect, and to re-inspect a stud without waiting for the disease to reappear. It was seldom that one test with mallein detected every case of disease in a large stud. The local authority should be empowered to re-test the stud at a period of from one month to six weeks after the first test, a practice which now obtained in some cases with the concurrence of owners. The work under the Order would be greatly facilitated if proprietors of horse repositories were required to disclose to local authorities the name and address of the vendor of any horse subsequently found to be suffering from glanders. The local authority should be able also to exercise control over a horse as long as it gave a doubtful reaction to the mallein test, or for a maximum period of three months instead of 12 days as at present. The committee recommended that the Board of Agriculture be asked to amend the Order in accordance with these suggestions, and this was agreed to.

The King has sent a present of linen to the Chelsea Hospital for Women.

A Record of Long Service.—Mr. Joseph S. Barber having resigned the post of senior dispenser to the Royal Free Hospital, which he has held for the remarkably long period of 59 years, the committee of management has granted him a substantial pension in recognition of his long and faithful service. The members of the committee and the medical and nursing staff of the hospital have also presented Mr. Barber with a clock and easy chair as a testimonial of their esteem.

The New Cottage Hospital at Hornsey.—The new Cottage Hospital at Hornsey was opened on Jan. 27th by Mrs. Abraham, the wife of Mr. J. G. Abraham, J.P., who is the honorary treasurer of the new institution. The building, which stands in its own grounds of 1½ acres, provides accommodation for 14 patients. A sum of about £4378 has already been subscribed towards the new building and its equipment, but there is still a deficit of £999. The borough of Hornsey contains 100,000 inhabitants, and up to the present time has provided no hospital accommodation for accident and serious non-infectious cases. The ordinary charge to patients will be 5*s.* per week, which will be remitted in certain cases, while special arrangements have been made for patients who are able to afford £3 3*s.* per week. At the conclusion of the opening ceremony Mrs. Abraham was presented with a silver souvenir key.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Baldwin, Aslett, F.R.C.S. Eng., has been appointed Surgeon to the West London Hospital.

Bell, J. H., M.B., B.S. Edin., has been appointed Third Medical Officer at the County Lunatic Asylum, Hatton, near Warwick.

Clements, J., M.D. R.U.I., D.P.H., has been appointed Medical Officer of Beckenham, Kent.

Daly, Ashley S., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist and Assistant Instructor in Anæsthetics at the London Hospital.

Ellis, W. G., M.D. Brux., M.R.C.S., L.S.A., has been appointed Principal Civil Medical Officer of the Straits Settlements.

Etherington-Smith, R. B., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the West London Hospital and Surgical Registrar to St. Bartholomew's Hospital.

Greeves, Reginald A., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar to the Cancer Hospital, London.

Kauffmann, Otto J., M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 25, with a view to his being employed in all cases of lead-poisoning which may arise in the Circuit, and in such other cases of industrial disease (except ophthalmic cases) as may be referred to him.

Latham, Arthur, M.D., B.Ch. Cantab., F.R.C.P. Lond., M.R.C.S. Eng., has been appointed a Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood.

Lawrence, C. A., L.R.C.P. & S. Edin., L.F.P.S.Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Polmont District of the county of Stirling.

Marsden, Edith Maude, M.B., Ch.B. Vict., has been appointed House Surgeon at St. Mary's Hospital, Manchester.

Middlemiss, G. W., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Settle District of the county of York.

Pirie, W. R., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Aberdeen District of the county of Aberdeen.

Ridley, N. C., M.B. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 17, with a view to his being employed in all ophthalmic cases which may arise in the Circuit.

Rose, G., M.B., C.M., D.P.H. Aberd., has been appointed Chief Medical Officer to the Aberdeen School Board.

Smith, Charles Johnston, M.B., Ch.B. Edin., has been appointed Senior House Surgeon at the Ashton and District Infirmary.

Smyth, Francis R., M.R.C.S., L.R.C.P. Lond., L.D.S. R.C.S., has been appointed Assistant Dental Surgeon to the National Dental Hospital and College.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Bedford County Hospital.—House Physician. Salary £60 per annum, with apartments, board, and washing.

Bolingbroke Hospital, Wandsworth Common, S.W.—Ophthalmic Surgeon.

Bristol Royal Infirmary.—Two House Physicians and One House Surgeon (salary each £100 per annum); One Obstetric and Ophthalmic House Surgeon and One Throat, Nose, and Ear House Surgeon (salary each £75 per annum); and One Casualty Officer (salary £50 per annum); with apartments, board, and laundry. Also Honorary Assistant Dental Surgeon. Also Honorary Dental Anæsthetist.

Cancer Hospital, Fulham-road, S.W.—Medical Officer in Charge of the Electrical Department. Salary £26 5*s*. per annum.

Canterbury, Kent and Canterbury Hospital.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

Cape of Good Hope, Grey Hospital, King Williams Town.—Resident House Surgeon, unmarried. Salary at rate of £250 per annum, with quarters and one ration.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence. Also Pathologist. Salary 100 guineas per annum.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

Harrogate Infirmary.—House Surgeon. Salary £75 per annum, with board, lodging, and laundry.

Infants Hospital, Vincent-square, Westminster.—Pathologist.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Two Resident Medical Officers. Salary, senior £100, and junior £65 per annum, with board, washing, and apartments.

Leicester Infirmary.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

Liverpool Workhouse Hospital.—Assistant Medical Officer. Salary £100 per annum, with rations.

London Temperance Hospital.—Surgical Registrar. Salary at rate of 40 guineas per annum.

Manchester, St. Mary's Hospitals for Women and Children.—Fourth House Surgeon for six months. Salary £25, with board and residence.

Mansfield, Sherwood Forest Sanatorium for Consumptives.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

Metropolitan Hospital, Kingsland-road, N.E.—Pathologist. Salary at rate of £100 per annum.

Newport and Monmouthshire Hospital.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

Northampton General Hospital.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, and washing.

Oxford, Radcliffe Infirmary and County Hospital.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £80 per annum, with board, &c.

Perth District Asylum, Murthly.—Assistant Physician. Salary £120 per annum, with apartments, board, and laundry.

Prince of Wales's General Hospital, Tottenham, N.—Senior House Physician. Salary at rate of £75 per annum, with residence, board, and laundry.

Rotherham Hospital.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal National Orthopædic Hospital, Great Portland-street, W.—Surgical Registrar. Salary £105 per annum.

St. Marylebone Infirmary, Rackham-street, Ladbroke-grove, W.—First Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer (unmarried), for six months. Salary at rate of £80 per annum, all found.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Salisbury Infirmary.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

Sheffield Royal Infirmary.—Junior Assistant House Surgeon. Also Assistant House Physician. Salary of former £65, and of latter £60 per annum, with board and residence.

Sheffield University.—Junior Demonstrator in Pathology. Salary £150 per annum.

Shrewsbury, Borough of.—Medical Officer of Health. Salary £500 per annum, inclusive.

Southampton, Free Eye Hospital.—House Surgeon. Salary £100 a year, with board and residence.

South Shields, Ingham Infirmary and Westoe Dispensary.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

West London Hospital, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Chapel-en-le-Frith, in the county of Derby; and at Nigg, in the county of Kincardine.

Births, Marriages, and Deaths.

DEATH.

Hancock.—On Jan. 26th, William Ilbert Hancock, F.R.C.S.Eng., of Queen Anne-street, Cavendish-square, W., aged 36 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MODULATION OF THE VOICE IN THE DIAGNOSIS AND TREATMENT OF LOSS OF VOICE.

To the Editor of The Lancet.

Sir,—That the relative beauty of a voice depends upon the modulation power is undoubted. Attention is, however, less paid to the fact that the exercise of modulation power is a factor in preventing loss of voice. By modulation is meant the alternating tone and pitch which lends expression to the voice; and the whole mechanism of voice being a muscular one it is obvious that this alternation of tone and pitch is brought about by the use of different groups of muscles or muscle fibres. Without this varying use of muscles and muscle fibres modulation is lost and the voice becomes a monotone. It is apparent at once that a monotone can only be the product of one group of muscles, and that used in one way, and the exclusive use of one group of muscles in one way will tend to the exhaustion of that group—that is, there will be loss of voice. In actual practice it will be found that nothing is more characteristic of the failing voice than this use of the monotone, this lack of modulation, and the group of muscles which usually produces it is that of the larynx. Much attention has been paid to the insufficiency of the laryngeal muscles, but in the consideration of it it should never be forgotten that the patient approaches us for the loss of the complete voice, when the modulation having already gone the last monotone is going. Modulation, that is, the use of different groups of muscles, having disappeared, it is obvious that excessive work has been thrown upon the last group of muscles (the laryngeal group), producing the monotone, and they are the more quickly exhausted. Our attention must therefore be directed not only to the causes of insufficiency of the laryngeal muscles, but to the causes whereby all voice production has been thrown upon them.

That there are groups of muscles other than the laryngeal capable of producing voice is undoubted. The various methods of voice-production—chest voice and head voice—indicate this, as also the fact that good voice can be obtained after hemi-laryngectomy or with small fibrous tumours on the cords. Voice is, after all, nothing but vibrations of a column of air resonated in hollow chambers, and any muscle or muscle fibre capable of altering the shape of the walls surrounding the column of air is capable of vibrating it. Each muscle has its own particular function to fulfil in voice-production whether by vibrating the column of air or by altering the capacity of the resonance chambers; and unless each fulfils its particular function there will be something lost of modulation and more work will be thrown upon the remaining muscles. These, therefore, will be the sooner exhausted. The groups of muscles to which attention should be paid are those not in use. Those in use can readily be determined by making the patient sing or speak; and, by asking him to vary the voice, it is not difficult to discover the groups not in use. The cause of their disuse will then require investigation and disease will receive treatment. In the majority of cases it will be found, however, that habit plays a large part in the disuse of the muscles, often induced by past disease, such as oral sepsis or nasal infections. The pernicious habit of intoning on one note and at one pitch is one of the causes of "clergyman's sore throat."

In the treatment of loss of voice it will be apparent that no system of voice-training can be of use which does not relieve the strain of the exhausted muscles. This is done by changing the position of the voice-production and the success of voice-trainers depends on this fact. Unfortunately, they are inclined to advocate one system only, thereby substituting only one fresh group of muscles, and these in their turn may become exhausted. The real secret lies in the change of position—whether "backward" or "forward" of the exhausted position is immaterial—and the education of all muscles by particular exercises to take their particular part in voice-production and so minimise the strain thrown upon each group of muscles. It must be borne in mind for what purpose the voice is to be used. A part which by its muscular contraction is used for vibrating the column of air should not have also the modification of the size—i.e., the resonating capacity of the chambers—also as a main object, and *vice versa*. Singers require full resonating capacity. Speakers require clearness of enunciation. Singers therefore require the vibrations to be produced as far "back" as consistent with proper modulation so that the muscular walls of the succeeding resonance chambers should be left to modify the resonance. (N.B.—This does not mean the employment of the chest voice to the exclusion of the head voice.) Speakers, on the other hand, close the lips so frequently during enunciation that the voice if produced far "back" would be muffled. Speakers therefore should produce the voice as far forward as is consistent, so that enunciation is clearer.

Modulation of the voice will be found a most valuable aid to cure loss of voice, and it is to be sought for and found in the proper investigation and exercise of the muscles lining the pharynx, and the buccal and oral muscles chiefly. The necessity for proper and complete use of those muscles of articulation cannot be too strongly emphasised, as by them the strain upon the larynx can be got rid of. Each case of loss of voice requires separate investigation, and it can readily be determined which group of muscles can take up the greater part of voice-production for the time being, while the remainder are treated for disease and educated back into properly performing their quota in voice-production, but neither more nor less than each can sustain.

I am, Sir, yours faithfully,
GEORGE IRVINE STEWART, M.B. Aberd., F.R.C.S. Eng
Ipswich, Jan. 19th, 1910.

CHINESE MEDICINE.

A CORRESPONDENT has forwarded us the following description of Chinese medical treatment which was given originally by a Roman Catholic priest, Père Ripa, of what he underwent to prevent the ill-effects of a fall. Having been thrown from his horse and left fainting in the street he was carried into a house where a doctor soon visited him. "He made me sit up in bed, placing near me a large basin filled with water,' in which he put a thick piece of ice to reduce it to freezing-point. Then stripping me to the waist, he made me stretch my neck over the basin, while he continued to pour the water on my neck with a cup. The pain caused 'by those nerves which take their rise from the pia mater' was so great and so insufferable that it seemed to me unequalled, but he said it would stanch the blood and restore me to my senses, which was actually the case, for in a short time my sight became clear and my mind resumed its powers. He next bound my head with a band drawn tight by two men who held the ends, while he struck the intermediate parts vigorously with a piece of wood, which shook my head violently, and gave me dreadful pain. This, he said, was to set the brain, which he supposed had been displaced, and it is true that after the second operation my head felt more free. A third operation was now performed, during which he made me, still stripped to the waist, walk in the open air supported by two persons, and while thus walking he unexpectedly threw a basin of freezing cold water over my breast. As this caused me to draw my breath with great vehemence, and as my chest had been injured by the fall, it may easily be imagined what were my sufferings under this affliction, but I was consoled by the information that if any rib had been dislocated this sudden and hard breathing would restore it to its natural position. The next proceeding was not less painful and extravagant. The operator made me sit on the ground and, assisted by two men, held a cloth upon my mouth and nose till I was almost suffocated. 'This,' said the Chinese Æsculapius, 'by causing a violent heaving of the chest will force back any rib that may have been dislocated.' The wound in my head, not being deep, he healed it by stuffing it with burnt cotton. He then ordered that I should continue to walk much, supported by two persons; that I should not sit long, nor be allowed to sleep till 10 o'clock at night, at which time I should eat a little thin rice soup. He assured me that these walks in the open air while fasting would prevent the blood from settling upon the chest where it might corrupt. These remedies, though barbarous and excruciating, cured me so completely that in seven days I was able to resume my journey."

THE ELEANOR CROSSES.

WE have received a copy of an interesting and beautifully illustrated little book written by Dr. James Galloway and entitled "Eleanor of Castile, Queen of England, and the Monuments Erected in Her Memory." This sketch of the story of Queen Eleanor appeared in the *Charing Cross Hospital Gazette*, having originally formed the substance of two illustrated lectures delivered before the students of that hospital and the nursing staff, but a wider public may well take an interest in a piece of work which Dr. Galloway, within the modest limits which he has set himself, has taken every pains to make exhaustive. In a bibliographical note he points out that information respecting Eleanor of Castile and her memorials is widely scattered, and the references which he gives as an indication of the sources from which many of his notes are derived show how thoroughly he has entered into his subject. Everyone knows the story of the devotion of King Edward I. to his wife, Eleanor of Castile, "the good Queen Eleanor," and in Dr. Galloway's book there will be found described, as far as possible, the various memorial crosses erected by the order of the King at various points where the Queen's funeral *cortége* rested for the night during the transit of the body from Lincoln to London. There were originally 12 of these beautiful memorials; three only stand now—Northampton, Geddington, and Waltham. Neglect and, in some cases, deliberate desecration destroyed two others, and the great Civil War seems to have accounted for the disappearance of the remainder. As most of our readers know, the monument in the yard of the South-Eastern Railway terminus at Charing Cross is modern, but Dr. Galloway tells us that it was built by Edward Middleton Barry who completed his father's work in the building of the Houses of Parliament and whose skill and artistic merits never received proper recognition. Familiarity with its design prevents any of us from ever looking closely at it, yet the cross at "Charrynge" is really a fine piece of work by a learned architect and antiquary, and represents Edward Barry's conception of Crondale's original cross. We congratulate Dr. Galloway on his interesting little monograph.

HOME-MADE BREAD.

To the Editor of THE LANCET.

SIR,—The politicians who claim so large a share of our attention just now are all expressing deep concern, either at the present price of bread or at its possible future price if certain events occur. I wish they were as keen about its quality. Whether the bakers are to blame, or whether they are merely the sport of the fashion which demands bread of perfect whiteness, the fact remains that an article of food which forms the principal item in the dietary of a large section of the population is singularly devoid of nourishment. In our household we have despaired of finding a baker who makes good bread, and for some time now have baked our own. I venture to send you some details (and a loaf of our bread) in the hope that I may be of service to any who would also, if they could, deliver themselves from the tyranny of the baker. Here is the recipe which we have evolved after many experiments and have used for some time now with excellent results.

> In a large earthenware basin mix 3½ pounds of white flour with a like quantity of whole meal, adding two tablespoonfuls of salt. Dissolve in another basin 2 ounces of German yeast in a small quantity of cold water; add 3 pints of warm (not hot) water, and pour the whole into the midst of the flour-mixture. Knead thoroughly; it will be ready when the dough does not stick to the hands. On no account add more water even if at first there does not appear to be enough moisture. It will come right in a few minutes. Next cover the dough with a cloth and set it near the fire for 3 hours to rise. At the end of that time make up the loaves (the quantity mentioned produces five), put them in greased tins, and set them to rise for another 15 minutes. The baking, in a moderate oven, takes 1¾ hours.

If this recipe is not after the manner of the famous Mrs. Beeton I hope that at least no one who follows it will be led into error. We find the ordinary kitchen range bakes the bread quite satisfactorily. We sometimes use white flour only and no whole meal; the only drawback is that the bread is so delicious that it disappears with extraordinary rapidity. Your readers may be interested in some particulars as to cost; our bread is actually cheaper than the baker's. To supply our needs (we are a family of nine) we require per week 14 baker's loaves at *3d.* = *3s. 6d.* Ten loaves of home-made bread go just as far, and we bake five loaves twice a week, the bread retaining its moisture so much longer than shop loaves. Buying the flour a few stones at a time the cost is as near as possible *10½d.* for one baking. The yeast costs *1½d.* This works out at *2s.* per week exclusive of fuel, and of course other cooking can be done on the same day. Apart from any financial saving, however, the benefit to the health of the family has been most marked.

I am, Sir, yours faithfully,
Jan. 29th, 1910. MAURICE F. KEY.

⁂ The loaf in question has a crisp and attractive appearance, and appears to be a "cross" between a brown and white bread. The texture is somewhat close, and we think it would be improved by further fermentation, but the flavour is very pleasant and compares favourably with the uninteresting taste of many white loaves. We found the bread an amply satisfying addition to a meal.—ED. L.

THE LEEWARD ISLANDS.

A REPORT on the Blue Book of the Leeward Islands for the year 1908–09 has been prepared by Mr. Edward B. Jarvis, the Acting Colonial Secretary, and was issued as a Parliamentary paper on Jan. 21st. According to the last census the population is about 128,000. There were 4864 births and 3501 deaths during the year. Of the births, 1858 were legitimate, and 3006, or 61 per cent., illegitimate. The general health during the year was very satisfactory. There were no epidemics of a serious nature. The marked decrease in malaria may be attributed to the greater knowledge among the labouring classes of the important part played by the mosquito, the increased interest which is being shown in sanitation and hygiene generally, and the use of quinine in the place of bush remedies. The fact is gradually being appreciated that preventive measures are preferable to remedial ones. Every pond and stream throughout the island of Antigua has been stocked with mosquito-devouring fish—viz., Barbados "millions" (*Girardinus pœciloides*). Quinine, in packets containing three doses of three grains each, has been for several years obtainable for the sum of one penny a packet at all police stations throughout the island, and in order to still further encourage the people in the use of this drug the free distribution of quinine is shortly to be commenced. A by-law for the city of St. Johns was passed early in the year making it compulsory, under a penalty of £20, to screen with mosquito wire gauze all tanks, barrels, and other receptacles for storing water, and providing that all fountains, pools or ponds, or artificial excavations, made for any purpose in public or private property, which may contain water, shall be kept stocked with mosquito-destroying fish, or shall be kept covered with a film of petroleum oil. The introduction of this useful measure has done much to rid the city of the dangerous pests. In the course of the year 3332 patients were admitted into the hospitals of the colony, in which there were 403 deaths. There are two leper asylums—one at Rat Island, in Antigua, and the other at Fort Charles, in St. Kitts. In the former there were 38 lepers at the beginning of the year; three were admitted during the year and seven died. In St. Kitts there were 60 lepers at the beginning of the year; seven were admitted during the year and six died. There is no record, in Antigua at any rate, of any attendant of the asylums having contracted leprosy.

◆

M.R.C.S., L.R.C.P.—It is obviously reasonable of the consultant physician or surgeon in question to notify his change of address. Some confine such notification very strictly to those with whom they are already in professional relations. Others certainly have before now given directions that the notice should be sent to members of their medical school.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Walter G. Spencer, Jonathan Hutchinson): at 5.30 P.M.

Papers:

Mr. Ernest W. Hey Groves: Radical Operation for Cancer of the Pylorus (illustrated by epidiascope).

Mr. Somerville Hastings: Rupture of the Tunica Vaginalis in Hydroceles.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—William J. Gow, G. F. Blacker): at 7.45 P.M.

Specimens:

Dr. Russell Andrews: Fibroma of the Vagina.

Dr. Jervois Aarons: Ectopic Gestation.

Dr. Hastings Tweedy: Ovarian Pregnancy.

Mr. Hey Groves: Tubal Mole.

Dr. A. H. Lewers: Uterus Ruptured Transversely at Fundus during Labour.

Short Communication:

Dr. William Alexander: Post-peritoneal Hæmatocele complicating a Large Uterine Fibroid.

Paper:

Dr. Hastings Tweedy: Modern Methods of Delivery in Contracted Pelves.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: H. D. Rolleston, Albert Carless): at 8 P.M.

Clinical Cases:

Dr. Essex Wynter: Angioneurosis.

Dr. Galloway: Angioneurosis.

Dr. Morley Fletcher: Two Cases of Rheumatic Nodules with Gonococci.

Dr. Langmead: Hereditary Multiple Telangiectases.

Mr. Carless: (1) Sarcoma of the Innominate Bone under Treatment by Coley's Fluid; (2) Removal of both Jaws for Epithelioma, Extension to Frontal Bone.

And other Cases.

Paper:

Dr. Essex Wynter: Aneurysm of the Descending Thoracic Aorta.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., Dr. J. S. R. Russell: The Cerebellum and its Affections (Lettsomian Lecture).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—8.30 P.M., Major F. J. Wade-Brown, R.A.M.C.: Medical Staff Rides.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Dr. R. F. Fox: Some Principles in the Treatment of Chronic Disease (Annual Oration).

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Clinical Evening. Cases will be shown by Mr. J. B. Lawford, Mr. E. T. Collins, Mr. N. B. Harman, and others.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, Russell-square, W.C.

FRIDAY.—5 P.M., Dr. R. A. Lyster: The Medical Treatment of School Children.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Mr. C. A. Morton (Bristol): Removal of Stones from the Ureter.

TUESDAY.—4 P.M., Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M., Lecture:—Dr. G. Pernet: Extra-Genital Chancres.

WEDNESDAY.—4 P.M., Mr. C. H. Leaf: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. Mercier: Cases of Mental Disorder.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture—Dr. J. H. Sequeira: Bullous Eruptions.

FRIDAY.—4 P.M., Mr. H. Barwell: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: The Serious Valve Diseases of the Heart.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Local Anæsthetics.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Mr. Edwsrds: Urinary Surgery.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Cole: Insanity at the Decline of Life.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eyes. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Mr. H. W. Carson: Intussusception.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie)

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 P.M., Special Lecture:—Mr. R. Lake: Indications for Mastoid Operations.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Diabetes.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture: Sir William Gowers.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. F. E. Batten: Demonstration on Selected Medical Cases.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. C. Wallis: Fissure and Pruritus.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. G. French: Tracheoscopy, &c.
FRIDAY.—3.45 P.M., Lecture:—Dr. W. Wingrave: Clinical Pathology.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Tuberculosis of the Skin: I., Lupus Vulgaris; II., Tuberculosis Verrucosa Cutis; III., Scrofuloderma.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs. 50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 2nd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 27	29·41	W.	...	48	45	24	...	24	Foggy
„ 28	28·75	S.W.	0·35	72	45	24	44	45	Raining
„ 29	29·28	W.	0·07	62	42	34	33	34	Fine
„ 30	29·84	S.W.	...	60	40	34	33	34	Fine
„ 31	29·97	S.W.	...	64	46	34	37	38	Fine
Feb. 1	29 90	S.W.	...	63	45	38	39	41	Cloudy
„ 2	29·45	S.	0·02	43	43	38	39	39	Overcast

Communications, Letters, &c., have been received from—

A.—Mr. J. J. Anning, Leeds; Dr. J. Allan, Edinburgh; Dr. E. Ash, Lond.; Dr. Ayres, Liverpool; Anglo-American Pharmaceutical Co., Croydon.

B.—Messrs. Blundell and Rigby, Lond.; Mr. E. Baker, Birmingham; Bristol Royal Infirmary, Secretary of; Mr. H. Butterfield, Northampton; Messrs. Boyveau and Chevillet, Paris; Dr. Walter Broadbent, Brighton; Dr. D. A. Belilios, Wimbledon; Sir John Byers, Belfast; Mrs. Stanley Berkeley, Lond.; Mr. H. Bushell, Brighton; Mr. G. Sherman Bigg, Lond.; Mr. H. Lewis Barker, Lond.; Mr. C. Birchall, Liverpool.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Continental Tyre and Rubber Co., Lond.; C. F. R.; Mr. H. A. Collins, Croydon; Messrs. A. H. Cox and Co., Brighton; Mr. M. Cornwall, Hove; Dr. W. M. Crofton, Oxford; Mr. John Clay, Newcastle-on-Tyne; Canada.

D.—Messrs. W. Dawson and Sons, Lond.; Dr. K. H. Digby, Lond.; De Dion Bouton, Lond., Manager of.

E.—Dr. G. S. Ephraimhoff, Kuajevo.

F.—Mr. C. Fox, South Petherton; Mr. Charles E. S. Flemming, Bradford-on-Avon; Fine Art Society, Lond.

G.—Mr. H. T. Gray, Lond.; Great Yarmouth Corporation, Clerk to the; Mr. R. W. Gardner, New York; Dr. John T. Graham, Perth.

H.—Dr. R. W. Higson, Bolton; Messrs. J. F. Hartz Co., Toronto; Mr. Thomas Harling, Blackburn; Dr. H. L. P. Hulbert, Brixworth; Hoffmann La Roche Chemical Works, Lond.; Captain A. H. Hayes, R.A.M.C., Lond.

I.—Messrs. Ingram and Royle, Lond.; Isham Water Co., Lond.; Ingham Infirmary and South Shields Dispensary, Secretary of.

J.—Mr. G. P. James, Penarth; Mr. Robert Jones, Liverpool; J. H. F. N.; Dr. Jack, Liverpool.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. H. S. King and Co., Lond.; King's Norton Union, Clerk to the; Messrs. J. R. Kay Co., Chicago; Mr. S. Karger, Berlin; Dr. Knight, Portobello; Sir Alfred Keogh, Westgate-on-Sea.

L.—Mr. H. K. Lewis, Lond.; Mr. C. B. Lockwood, Lond.; Mr. H. Le Soudier, Paris; Leeds and West Riding Medico-Chirurgical Society, Senior Secretary of.

M.—Dr. P. Modlinski, Moscow; Ministerio della Marina, Rome; M.R.C.S., L.R.C.P.; Messrs. C. Mitchell and Co., Lond.; Mr. H. C. MacBryan, Box; Mr. H. H. Mitchell, Cheltenham; Mrs. Morison, Lond.; *Medical Officer*, Lond., Editor of; Mr. A. Macrae, Lond.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; The Navy League, Lond., President of; Mr. W. S. Nichol, Wiltonburn; Mr. Reginald Nitch-Smith, Lond.; Messrs. Nisbet and Co., Lond.; Newport and Monmouthshire Hospital, Secretary of.

O.—Messrs. H. J. Osborne and Co., Lond.; Mr. T. R. Over, Sandhurst.

P.—Messrs. Peacock and Hadley, Lond.; Dr. A. M. Pollock, East London, South Africa; Messrs. Parke, Davis, and Co., Lond.; Dr. W. H. Phelps, Leigh Woods; Dr. R. H. Paramore, Lond.; Mr. W. H. Plows, Lond.

R.—Dr. Nathan Raw, Liverpool; Royal Devon and Exeter Hospital, Secretary of; The Retreat, Witham, Medical Superintendent of; Messrs. Rebman, Lond.; Royal Portsmouth Hospital, Secretary of; Royal Statistical Society, Lond., Assistant Secretary of; Research Defence Society, Lond., Hon. Secretary of; Mr. Richard Roper, Lond.

S.—Dr. W. S. Syme, Glasgow; Miss L. H. Soutar, Edinburgh; Messrs. G. Street and Co., Lond.; Mr. J. Stenhouse, Folkestone; Sherwood Forest Sanatorium, Mansfield, Clerk to the; Seltzogene Patent Charges Co., St. Helens; Southampton Free Eye Hospital, Secretary of; Sheffield University, Registrar of; Seventeenth International Congess of Medicine, Lond., Acting Secretaries of; St. Mary's Hospitals for Women, &c., Manchester; Sanitas Co., Lond., Secretary of; Dr. E. A. Spitzka, Philadelphia; Scholastic, Clerical, &c., Association, Lond.; Dr. C. Slater, Lond.; St. Mary's Hospital, Plaistow, Secretary of; Mr. R. S. Shankara, Bhakkar, India.

D.—Dr. D. M. Taylor, Halifax; Trommer Co., Lond.; Dr. J. Taylor Lond.; Mr. H. Bell Tawse, Nottingham.

V.—Dr. Ralph Vincent, Lond.; Messrs. A. Vitrae, Giraud, and Co., Lond.; Dr. T. Vasilin, Bucharest.

W.—Dr. John Wallace, Bombay; Dr. Albert Westland, Aberdeen; Wolverhampton and Midland Counties Eye Infirmary, Assistant Secretary of; Westminster Hospital Medical School, Lond., Secretary of; Mr. F. L. Wilson, Lond.; Warneford Hospital, Leamington, Secretary of; Dr. A. A. Warden, Paris; Mr. A. P. Walters, Island of Eigg.

Letters, each with enclosure, are also acknowledged from—

A.—Madame Arqua, Lond.; A. K.; Messrs. C. Ash, Sons, and Co., Lond.; A. W. K.; A. L.; A. E. B.; Ashton-under-Lyne District Infirmary, Secretary of.

B.—Dr. M. M. Bowlan, Lond.; Messrs. Brown and Son, Huddersfield; Brecon and Radnor Asylum, Talgarth, Clerk to the; Bristol City Asylum, Clerk to the; Birkenhead Borough Hospital, Treasurer to the; Mrs. Blackadder, Broughty Ferry; Mr. G. P. Butcher, Plymouth; Mr. F. A. Brockhaus, Lond.; Mrs. Bult, Lond.; B. J. P. J.; Mr. A. A. Bradburne, Southport; Dr. H. W. Bayly, Lond.

C.—Mr. R. A. Caldwell, Bournemouth; Mr. Cullen, Brixham; Messrs. Cowie and Co., Lond.; Clarke Syphon Stove Co., Warrington, Secretary of; Messrs. Cordes, Hermann, and Co., Hamburg; Cardiff Infirmary, Secretary of; Messrs. Carnrick and Co., Lond.; Messrs. J. and A. Carter, Lond.

D.—Mr. M. E. Dovaston, Lond.; Dr. W. T. Dougal, Pittenweem; Messrs. Duncan, Flockhart, and Co., Edinburgh; D. M. O. C.; Mr. V. Damlescu, Bucharest; Messrs. Down Bros., Lond.; Mr. T. D. Dutton, Lond.; D. G. P.

E.—Messrs. W. and T. Evans, Cork; E. I.

F.—Mr. R. Favell, Sheffield; Messrs. Festersen and Co., Basle; Dr A. O. M. Fehrson, Cradock.

G.—Dr. C. C. Gibbes, Lond.; Greenwich Corporation, Lond., Clerk to the; Messrs. Guyot, Guenin, and Son, Lond.; Dr. S. Gill, Liverpool; Mr. J. Galt, Cottingham; Mr. H. B. Gardner, Lond.; General Life Assurance Co., Lond., Secretary of; General Apothecaries' Co., Lond., Secretary of; Mr. R. J. Godlee, Lond.; Glasgow Corporation, Treasurer to the; Messrs. W. Green and Son, Edinburgh; Gloucestershire Royal Infirmary, Gloucester, Secretary of.

H.—Messrs. Hogg and Son, Lond.; Messrs. Hooper and Co., Lond.; Hampstead General Hospital, Lond., Secretary of; H. C. K.; Miss J. Holmes, Lond.; H. M. H.; Dr. A. C. Houston, Lond.; Dr. P. Howe, Denton; H. E. H.; Mr. T. H. Hewitt, Lond.; Dr. G. F. Hulme, Felixstowe; Mr. F. S. Hawks, Brockenhurst; Messrs. T. Holland and Son, Lond.

I.—Miss Inge, Haslemere.

J.—Mr. T. W. Joshi, Amraoti, India; J. N.; J. P.; J. L. B.

K.—Messrs. B. Kuhn and Co., Lond.; Mr. M. J. Kelly, Limerick.; Mr. E. M. Knott, Sutton Coldfield; Kreochyle Co., Lond.; Kent and Canterbury Hospital, Secretary of.

L.—Lanarkshire Education Committee, Lanark, Treasurer to the; Dr. J. Leishman, Slough; Messrs. E. and S. Livingstone, Edinburgh; Locum, Leicester; Lanark Corporation, Hamilton, Treasurer to the; Liverpool Royal Infirmary, Secretary of; Dr. C. L. Lakin, Lond.; Lancashire County Asylum, Winwick, Clerk to the; Messrs. Lee and Nightingale, Liverpool.

M.—Messrs. Moore and Co., Lond.; Dr. G. W. F. Macnaughton, Lond.; Dr. R. T. Maclaren, Moosomin, Canada; Maltine Manufacturing Co., Lond.; Mr. B. J. Mayne, Carn Brea; Dr. M. R. McDougall, Croydon; Mr. R. Mayman, Milton-under-Wychwood; Mrs. Maxwell, Le Vésinet; Miss S. B. Marks, Birmingham; Messrs. Maw, Son, and Son, Lond.; Dr. J. B. Millar, Crewe; Dr. H. C. Mamlock, Paris; Dr. A. A. McConnell, Dublin; M. B. P.; Manchester Corporation, Treasurer to the; Drs. McMullar and Stanton, Shenectady, U.S.A.; Messrs. J. Maclehose and Sons, Glasgow; Dr. McConnel, Lond.

N.—Northampton Education Committee, Secretary of; Nottingham General Hospital, Secretary of.

O.—Dr. J. F. O'Brien, Ballincollig; Dr. G. Olana, Lima.

P.—Dr. C. Prausnitz, Sutton; Mr. F. Tennant Pain, Lond.; Messrs. A. Picard et Fils, Paris; P. A. H.; Mr. F. J. Pearson, Ouston Ferry; Messrs. Phillipson and Golder, Chester; Mr. E. Puvat, Toulouse.

R.—Mr. R. Redpath, Newcastle-on-Tyne; Roland, Georgetown; Radcliffe Infirmary, Oxford, Treasurer to the; Royal Albert Hospital, Devonport, Secretary of; Dr. C. Riviere, Lond.; Registered Nurses' Society, Lond., Secretary of; Misses Round, Lond.; Mr. E. S. Rashleigh, Waltham Cross; Rotherham Hospital, Secretary of.

S.—Messrs. T. and H. Smith, Lond.; Messrs. Spiers and Pond, Lond.; Stepney Spare Motor Wheel Co., Llanelly; Surgeon, Wood Green; Mr. Morton Smale, Lond.; St. Andrew's Hospital, Northampton, Secretary of; Messrs. Salt and Son, Birmingham; Mr. W. Shehan, Doneraile; St. John Ambulance Association, Lond.

T.—Dr. R. Thurnam, Blagdon; T. G. M.

V.—Dr. F. P. Vale, Washington, U.S.A.; Mr. F. H. Vivian Voss, Rockhampton; Dr. H. J. Van Brockhuizen, Kuils River; Messrs. Van Houten, Lond.

W.—Dr. J. Wotherspoon, Lond.; Dr. W. A. Winship, San Diego; Wye House, Buxton, Medical Superintendent of; Messrs. Woollam and Richards, Shrewsbury; W. T. B.; Wonford House Hospital, Exeter, Treasurer to the; Dr. M. Watson, Ulang; Mr. T. H. Waller, Chelmsford; Dr. J. H. Wilgress, Folkestone; Dr. F. J. Woollacott, Lond.; Mr. S. L. B. Wilks, Colwyn Bay; Miss M. A. Withers, Lond.; Miss Wright, Lond.

Y.—Dr. E. Young, Lond.

EVERY FRIDAY. THE LANCET. PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*	£	s.	d.
One Year	£1	1	0
Six Months	0	12	6
Three Months	0	6	6

TO THE COLONIES AND ABROAD.	£	s.	d.
One Year	£1	5	0
Six Months	0	14	0
Three Months	0	7	0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ...
Official and General Announcements
Trade and Miscellaneous Advertisements and Situations Vacant ...
} Five Lines and under £0 4 0
} Every additional Line 0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Special terms for Position Pages.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

A Lecture

ON

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

Delivered before the Hunterian Society on Jan. 12th, 1910,

By C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S. Eng.,

CONSULTING SURGEON TO THE LONDON HOSPITAL.

Mr. President and Gentlemen,—When you did me the honour of inviting me to deliver one of the Hunterian Lectures before this society, the subject of the early diagnosis of carcinoma of the stomach immediately occurred to me as one of the most pressing questions of the day; one, too, which it seemed to me would be especially interesting to the members of this society. It was not until afterwards, when I began to put together the notes that I had formed upon it, that I fully realised that, however interesting this subject might be, it is one of the most difficult that I could have chosen. For by early diagnosis I mean diagnosis during the period in which complete removal of the disease is still possible, while there is still a hope of being able to effect a permanent cure; before the disease has reached the stage in which surgery is as helpless as medicine; and I must ask you therefore to be as lenient as you can in passing judgment on my effort.

Successful Operation Dependent on Early Diagnosis.

Before I begin there are certain facts I should like to mention, as they illustrate more clearly than any arguments I can use the extreme importance of this subject. So far as the male sex is concerned, cancer affects the stomach more often than it does any other organ in the body. Nearly 22 per cent. of all the cases of cancer that occur in men begin in the stomach. In women the proportion is not so high owing to the frequency with which the generative organs and the mammary glands are attacked, but the aggregate number is quite as great. At its beginning cancer of the stomach is absolutely and entirely local. No case of cancer of the stomach has ever been cured except by operation. In nine cases out of ten complete removal is perfectly possible if the attempt is made early enough. If the disease begins at the pylorus or along the lesser curvature, as it nearly always does, the whole glandular area that drains it can be removed with it. Secondary deposits in other organs, such as the liver, do not make their appearance until comparatively late. Unless special complications are present (the cause of which is nearly always delay) the operation is not a difficult one, and need not take more than three-quarters of an hour. The mortality, in the hands of those who are accustomed to abdominal surgery, is practically dependent upon the condition of the patient at the time. The shock, contrary to what one would expect, is exceedingly slight; and the after condition of the patient, so far as digestion is concerned, is so satisfactory that I have often wondered whether the stomach is really such an important organ as it is popularly supposed to be. The sole thing that is required is to make the diagnosis soon enough, before the disease has spread so far as to render removal impossible. That must be my excuse for bringing this subject before you to-day.

Classification of Cases.

Pathologically, cases of cancer of the stomach may be classified in various ways. With this I have nothing to do, as I am only concerned at present with the clinical point of view, and looking from this there are only two groups. In one the growth is latent, manifesting itself only by its general constitutional effect until the disease is far advanced, when it may suddenly demonstrate its presence in a way which cannot be mistaken or overlooked. In the other the growth has been preceded for months, and even for years, by symptoms the significance of which has either not been recognised or else has been ignored. Of these two, the former is much the smaller. It does not comprise 10 per cent., and according to some not even 5 per cent., of the total number. Moreover, as the importance of early diagnosis is becoming more and more recognised and fresh methods of investigation are being evolved it is becoming smaller still. But a few such cases do occur. Quite recently I was called in to see a gentleman, about 45 years of age, whose health and vigour had been failing in an unaccountable way for some months past. He had lost weight and strength. His appetite had failed, especially for meat, and his digestion was not good. The amount of free hydrochloric acid had been estimated after a test meal and had been found deficient, but under treatment it had risen again, with corresponding improvement in appetite, until it was all but normal. There had not been any tenderness or pain in the epigastric region. He had not been sick. There was no tumour to be felt nor any enlarged glands. The fæces, which might have given some evidence, had not been investigated. Then, quite suddenly, there was a profuse attack of hæmatemesis with melæna, from which the patient, though he lived some little time, never really recovered. From the first there had been a strong suspicion of malignant disease. The contents of the stomach had been examined on more than one occasion to see if any clue could be found. But until the hæmatemesis occurred a diagnosis such as would justify an abdominal exploration was not possible, and then it was too late. The growth in these cases is usually situated on a part of the wall of the stomach that is far removed from either orifice, so that it does not interfere with the mechanics of digestion. It springs from the mucous surface, which has no sensory nerves in the ordinary sense of the term, so that for a long time, until, indeed, it involves the serous coat, it does not cause pain or tenderness. If it lies on the lesser curvature it may remain concealed beneath the liver until it has attained a comparatively large size. And though the appetite and the digestive power of the stomach may be impaired by the gastritis that accompanies such a new growth, there is nothing to distinguish this special form of gastritis from that which occurs from other causes. In other words, it is not possible to make a diagnosis in such a case during this stage of the disease, simply because there are no symptoms to act as guides. There may be a strong suspicion of malignant disease, perhaps even of malignant disease in some abdominal organ, and especially in the stomach, but unless something more definite can be found operation in such a case at such a stage, with nothing further to act as a guide, can only be called a roving commission, not an exploration, and condemned. Fortunately, as I have said already, such cases are not common, and it is to be hoped that with new and improved methods of investigation they will become less common still.

The other group of cases, those in which the growth has been preceded for months and even for years by symptoms directly referable to the stomach, is far more numerous. For many years past I have made a point of carefully inquiring into the early history of every case of carcinoma of the stomach that has come under my notice, and almost without exception there has been a definite account of characteristic gastric irritation at some period or other. In upwards of 60 per cent. the patients have already been told at one time or another that they were the subjects of gastric ulcer, and in quite half of the rest the symptoms have been of such a character and have persisted or come back again time after time in such a way that there was certainly something far more serious than a mere functional disorder. I have already mentioned one instance in which there was no history of pain, tenderness, vomiting, or severe dyspepsia until the disease was far advanced. The growth seemed to have originated in an uninjured and a healthy stomach, and I have met with a few more with a similar lack of symptoms, but I cannot be too emphatic in recording my conviction that such cases are the exception, that nearly all cases of cancer of the stomach are preceded by definite evidence of gastric irritation, and more than half by the characteristic symptoms of chronic gastric ulcer.

Relation of Cancer of the Stomach to Ulcer.

On *a priori* grounds this is all that could have been expected. So far from there being any improbability in such a suggestion, the improbability is all the other way. Cancer may conceivably originate in an organ that is healthy so far as we can tell; but it is infinitely more likely to originate in one that has been injured, and in the part that has been injured; and the more frequent the injury the more likely it is to follow. In every other organ of the body chronic ulceration is one of the strongest predisposing causes of cancer that we know. It would be the most extraordinary exception if it were not so here. Evidence pointing in this direction has been accumulating quietly for a long time past. At first it was merely a pious expression of opinion that such might conceivably be the case. Then a few instances were recorded in which this transformation had certainly taken place. Soon the number increased, and when general attention was called to it the proportion of cases in which this sequence of events may be considered proved rose in the most extraordinary manner. A few years ago the number in which it was supposed to have occurred was estimated by Fenwick at only 4 per cent. At Kiel, during the period from 1872 to 1891, it was no higher than 14. In the following nine years it rose to 26. Later Mayo, out of 180 cases, estimated that as many as 54 per cent. originated in this way. According to Moynihan it is true of no less than 72 per cent., while Ssapeshko, as quoted by Jedlicka, maintains that upwards of 90 out of every 100 cases of carcinoma of the stomach are preceded by something in the nature of an ulcer. Nor does this rest merely upon the results of clinical investigation, which might be more or less open to discussion. It has been proved by the study of the pathology of the living, a method of inquiry which has only been rendered possible by the enormous strides that abdominal surgery has made within the last few years. So long as carcinoma of the stomach was only seen in the post-mortem room it was impossible to say why or from what it had arisen. By the time the disease had proved fatal, all trace of any pre-existing ulcer had long since been destroyed, and there was nothing but the curious coincidence of locality shown by ulcers and carcinoma alike to suggest that the one could be in any way a precedent condition in the development of the other. The extraordinary change of opinion with regard to the proportion of cases that originate in this way is coincident with, and due to, the advance which has been made of late years in gastric surgery, which has enabled the beginnings of disease to be seen and not merely those stages which are no longer compatible with life. The conclusions of post-mortem pathology must be revised in the light of what has been ascertained and proved during life, and there can be no doubt which of the two is the more likely to be correct.

EARLY SYMPTOMS.

It is no longer, then, a matter for discussion: it must be taken as proved that malignant disease of the stomach in a very large proportion of instances starts either from some ulcer that has been allowed to persist until it has become chronic, or from some cicatrix that has been injured and irritated for years. The question is how and by what means we can find out the first beginning. To be of any use the diagnosis must be early, definite, and capable of being acted upon at once. There is no difficulty when the supraclavicular glands are enlarged so that they can be felt, and when the patient is anæmic and has lost a stone or more in weight; but then it is useless. The diagnosis must be made from local signs and symptoms while the disease is still local, or it is no use making it. Even in such an organ as the tongue, where ulcers and scars can be seen and felt, it is often a matter of the greatest difficulty to decide whether a sore is malignant or not. As may be imagined, in the case of the stomach it is far worse.

The ordinary test, the one that is usually appealed to before a surgeon is allowed to see the patient, is the failure of a plan of treatment that has given a certain degree of relief when tried before. Nothing could well be more unsatisfactory or more injurious than this. The treatment has never cured the patient. At the best it has only relieved the symptoms, and that for a time. Now they have returned again, rather more marked than they were before, in a patient who has grown older, nearer the age when carcinoma is most common, and who is scarcely so well nourished as he used to be. All excellent reasons for not trying the same line of treatment again. It is thoroughly illogical to do so; but men are so curiously optimistic in these cases, being inclined to see only the things they wish to see, and patients, who know nothing whatever about the question, are naturally so disposed to try anything and everything before agreeing to an operation, that the trial is made; the same line of action followed out again; an immense amount of the most precious time lost, and the diagnosis never made until all chance of curing the patient is long since past and gone. It is a cardinal rule in surgery that diagnosis, whether the case is one of carcinoma of the stomach or not, should precede treatment and not follow it. It is a confession of ignorance to look upon treatment as an aid and help to diagnosis, and no case of cancer of the stomach will ever be cured if the patient has to wait for an operation until after the trial and failure of every line of treatment that is recommended because once, when the disease was of a totally different character, it gave a certain measure of relief.

Whether the disease begins *de novo* in a stomach that is apparently healthy, or whether it starts from the basis of some old ulcer, the first thing to arouse the suspicion of the patient and make him seek advice is a change in the functional activity of the stomach for which he himself can find no explanation. It may show itself in many ways. If the patient has always been strong and healthy, leading an active vigorous life, it may be a sudden loss of appetite, associated perhaps with a special distaste for meat; or an attack of indigestion which does not pass off in a day or two, as it should, and for which we cannot assign a reason. There may not be the acute stabbing pain, running through from front to back, so characteristic of ordinary dyspepsia, but there is a constant feeling of fulness and discomfort after meals, with a nauseous taste in the mouth, and a tendency to sickness. With this there is a great deal of flatulence and very often there are eructations of offensive gases. The first thing noticed, in short, is an attack of gastritis or of gastric irritation, such as is not uncommon in many people, and which would not deserve such attention if it were not for one disquieting feature. It occurs quite suddenly, in a person about middle age, who has never been troubled with attacks of indigestion before without any obvious reason to account for it, and it does not get well as it should. It is this, as a rule, which impels a patient to seek advice; and given this history and these symptoms there should be as little delay as possible in making a thorough examination without waiting for loss of flesh or other symptoms to set in.

The same thing is true of that much more numerous class of patients whose history renders it practically certain that they have suffered at one time or another from ulcer of the stomach. There is the same evidence of gastric irritation, but, as a rule, it does not attract attention even so soon. They are so accustomed to attacks of a somewhat similar character that the additional distress caused by the irritation that accompanies a new growth is scarcely noticed by them. The symptoms are much the same as those from which they have suffered so often before. It is not until the attack has lasted some little time that it begins to dawn upon them that it is more severe and more persistent than usual and that it would be as well to seek advice about it. Indigestion is so common that the earliest stages of carcinoma are often allowed to pass by before the medical attendant is given the chance of making a diagnosis. In any such case where there is a definite history of past attacks, if a thorough examination has not been made already because of the presence of a chronic ulcer it should be now without further delay, because of the possibility that cancer has become grafted on to it. *Every case of chronic ulcer of the stomach is a potential case of carcinoma;* and I can only express the hope that before long every such case that has resisted one thorough course of treatment properly carried out, and still gives rise to the well-known train of symptoms, will be promptly handed over to the surgeon for complete investigation, if necessary by operation. I have not the slightest doubt that this would often prevent the later development of cancer.

Of all the symptoms that are present in these cases, perhaps pain is the most prominent, and it is certainly the one that most often makes the patient seek for further advice. In chronic ulcer the stomach is more or less at peace when it is empty. The pain may be acute as soon as food enters the stomach, or it may not come on until one or two hours later, and then not infrequently the ingestion of more relieves it for a time; but, as a rule, when the stomach has emptied itself, one way or the other, there is some degree of comfort. As malignant disease develops, this disappears. Persistence of pain always suggests cancer. Severity I have found of no use as a guide, for patients vary so greatly in their estimate, their power of endurance, and their descriptive ability. The pain of chronic ulcer may be as acute as that of cancer, but one or two have told me that the character of the pain has changed, and that instead of, or sometimes in addition to, the sharp cutting pain to which they have been accustomed there has come a steady burning pain in the epigastrium, varying in intensity at times but never quite disappearing. The locality of the pain may be of great service in indicating that of the cause, but it says nothing with regard to its nature.

The degree of local tenderness gives little or no information. The viscera themselves are not sensitive to ordinary pressure, so that any sudden increase of tenderness can only mean that the irritation around the disease has spread more widely to other structures near, and probably involves the parietal peritoneum. As all ulcers in the stomach, malignant or not, are surrounded by a zone of inflammation, this does not help. It merely means that the disease is spreading.

Nor is the presence or absence of a tumour of any great assistance. Every attempt should be made to ascertain whether there is a tumour by examining the stomach in all positions of the body, and when it is empty and when distended with air, but even a large tumour may remain quite out of reach under the left lobe of the liver. Moreover, it does not follow that a tumour of the stomach, even when it is at the pylorus and of recent detection, is therefore malignant. I have operated in several such cases without removing the tumour, and as the patients have lived for as long as six years after gastro-enterostomy had been performed there can be no question that the growths were of inflammatory origin. One case, however, was of very great significance. For four years the patient did well, put on flesh, and was able to do his work and digest his food. Then he began to fail, and six months later when I saw him again there could be no doubt that malignant disease had broken out. Gastro-enterostomy will not always prevent this.

Interference with the motor functions of the stomach is only of help in the diagnosis of malignant disease when it occurs under certain special conditions. It must be of rapid development. Pyloric obstruction and hour-glass contraction are equally, if they are not actually more, common in chronic ulcer than they are in cancer; but as a rule they last for years, judging by the symptoms, and the patient cannot assign even an approximate date for their appearance. It is not their presence which makes them of importance in connexion with this question, but the rapidity of their onset. Obstruction at the cardiac orifice, which is not so common, and which manifests itself by very different symptoms, must be judged separately. As a matter of fact, it seldom occurs except by extension in cases of epithelioma of the lower end of the œsophagus.

CHEMICAL AND OTHER METHODS OF DIAGNOSIS.

A study of the vomiting, on the other hand, in a doubtful case may help a good deal. The quantity is not of much importance. That is controlled mainly by the degree to which the stomach has become enlarged, and pyloric obstruction is even more common in simple than it is in malignant disease. But the frequency with which vomiting occurs, and the examination of what is brought up often furnish valuable information. In the case of a simple ulcer the frequency depends largely upon the amount of food. What is brought up consists of the food, more or less digested, mixed with the secretion from the stomach. If the quantity is large and has been retained for some time, it has often undergone a good deal of fermentation and may have a peculiarly sour, nauseating odour. If small, it consists of little more than semi-digested food. In cancer, on the other hand, though vomiting may be caused by food at any time, it frequently occurs independently; and the vomit, even when small, is often most offensive, grumous, and mixed with blood. The offensive character is probably associated with the deficiency in hydrochloric acid, in consequence of which there is little or no check to decomposition, and is therefore of secondary importance. But the frequent presence of blood, even in microscopic quantities, is most significant. Careful examination should be made for this in every suspicious case, and if it is found to be present frequently, no matter how small the amount, there should be no further delay.

I attach very great importance to the detection of occult or minute quantities of blood in the vomit or the fæces. The former, of course, is always inspected carefully, but this is not enough. If there is the least suspicion of the presence of malignant disease, every specimen must be examined chemically. The fæces are even more important. Blood is said to have been present in no less than 107 out of 124 cases. For this special precautions must be taken. The bowels should be well opened, and then for three days the patient must not be allowed to take any meat, or anything that might result in the production of hæmatin. The mouth, too, must be carefully examined, so that there is no chance of bleeding from any of the teeth; and, of course, there must be no instrumental interference with the stomach in any way. Unless there is a trained nurse in attendance the collection is always a matter of difficulty, but it should be insisted upon, and it can usually be managed by giving the patient a wide-mouthed stoppered bottle and directing him to pour some glacial acetic acid over what he has collected. It is the first step in the analysis, and it makes the patient realise the importance of what he is doing. Alone, by itself, without any other evidence, the frequent presence of minute quantities of blood in the vomit or the fæces is enough, not only to justify, but to compel an exploratory operation.

If there is no blood in either vomit or fæces and the other symptoms are merely sufficient to arouse suspicion but not to form a diagnosis an attempt must be made to obtain more exact information by other methods. The first of these is the estimation of the amount of free hydrochloric acid that is present in the gastric juice an hour after some simple test meal has been taken. This, though it is not so valuable as it was once thought to be, should never be omitted. In many cases of chronic ulcer of the stomach the quantity of free hydrochloric present during digestion is considerably increased. In most cases of cancer it is diminished, and in some it may fall so low as to disappear altogether. When this occurs lactic acid and the Oppolzer-Boas bacillus make their appearance in its stead.

Unfortunately this test, from which a very great deal was expected, is not so much a test for the presence of carcinoma as for the onset of gastritis caused by the carcinoma; and this may set in early or late in the course of the disease or may never set in at all, and may vary very greatly in intensity under the effect of treatment which could have no influence upon the carcinoma itself. Free hydrochloric acid may be present in the gastric juice in normal quantity throughout the whole course of a case of cancer. It may diminish for a time, and then, under appropriate treatment, rise again to the normal, and even beyond it. The diminution, as I showed upward of ten years ago, may occur in the most characteristic way when the cancer is situated in some other organ, and the stomach is not involved at all; and though in some instances the diminution occurs fairly early in the course of the disease, and therefore when the test is positive is of considerable value in diagnosis, a negative result is worth nothing and should never be taken into account. It is an unfortunate thing that patients, who seem to find a difficulty in realising the importance of this test, not infrequently take strong objection to it, mainly on sentimental grounds. As, however, it is very commonly necessary to administer an anæsthetic in a doubtful case of this character for other reasons, advantage can be taken of the opportunity to obtain at least one specimen for analysis.

Examination of the thorax and abdomen with the X rays, after the patient has been given two or three ounces of carbonate of bismuth mixed with bread and milk or porridge to swallow, is another method that should always be tried in a doubtful case. But this again, like some of the others I have mentioned, is of more use in diagnosing distortion or dilatation of the stomach due to the contraction of some old scar than in distinguishing simple from malignant ulceration. It succeeds best, of course, with a thin patient. Until recently the whole examination had to be carried out with the screen, which requires a very considerable amount of practice before any useful result can be obtained. The shadow thrown by a bolus of food mixed with carbonate of bismuth passing fairly rapidly over the screen is rarely so sharply defined or so distinct as it is represented in illustrations. Recently, however, I have had some excellent results with the instantaneous method of photography. If two or three plates are taken in rapid succession they can be studied quietly and sometimes a great deal of valuable information obtained. The position of the greater curvature (the patient, of course, is standing up) and of the pylorus can be ascertained with a fair degree of certainty, and, what is much more important, any slight deviation from the normal outline can usually be seen. I have on several occasions diagnosed the existence of an hour-glass contraction of the stomach in this way and verified it by subsequent operation, but I have never yet seen the surface of a malignant ulcer coated over with a layer of the bismuth, and so presenting a blackened patch, after all the rest of the bismuth had passed on, as has been described by some observers.

Many attempts have been made by examining the blood in various ways to find some criterion which might indicate the outbreak of cancer. Could such be found, it would solve many difficulties, not only in connexion with malignant disease of the stomach, but with that of other organs also. But to be of any real value in the early diagnosis of cancer this blood test must be certain, easy of application, and, what is far more important, must be such that it can be relied upon to indicate the presence of cancer at its earliest appearance, while it is still local. It is of little or no use if it merely indicates the presence of a malignant growth after it has infected the general system. It must be capable of indicating the first beginning, and it has yet to be proved that such a thing is possible. Cancer, at the first, is a purely local affection, and it is during this stage that it must be diagnosed and treated if the patient is to be cured.

Most of these methods—such, for example, as the failure in digestion leucocytosis and the increased pseudopodial energy of leucocytes in the presence of cancer serum—do not fulfil these conditions. Deaver speaks well of Kelling's hæmolytic test, using hen's blood, but I have had no experience of it. According to him, no less than 64 per cent. of cancer cases gave a positive reaction, and in six out of the nine that failed the patient was already in a state of advanced cachexia. The degree of hæmolysis seems to diminish as debility increases, so that this may be of some use as an early test.

The importance of the antitryptic index of the serum rests on different grounds, as its value is chiefly negative. It has been shown by Mr. E. C. Hort, who made use of chemical methods, and by Mr. H. W. Bayly, who, following Dr. F. L. Golla, estimated the index from the difference in the electric conductivity of the mixtures he employed, that the power of inhibiting tryptic digestion is much higher in the serum of patients who are the subject of cancer than in that of those who are healthy, and that this is nearly invariable. It occurs in 96 per cent. These results, too, agree very closely with those of observers who have employed other methods. This, therefore, must be admitted; but as the index is raised quite as much in many other complaints, in all infectious diseases for example, it cannot be taken as proof of the presence of cancer. The value of this test rests, as Mr. Hort points out, not in the rise of the index in cases of cancer, but in the absence of rise in cases that are not cancer. Given a case of ulcer of the stomach, in which the diagnosis, whether it is simple or malignant, is still in the balance, the absence of a rise in the antitryptic index of the serum is evidence in favour of the former. But, as with most other blood tests, it is not yet certain whether this one gives a result which can be relied upon in the early stages of the disease, when the diagnosis is most difficult and of most value, while the growth is still localised. If it only succeeds when the general system is already affected, it would rather negative operation than encourage it.

THE VALUE OF THE GASTROSCOPE.

The recent improvements in the construction of the gastroscope that have been effected by Dr. H. S. Souttar and Dr. Theodore Thompson render it exceedingly likely that in the use of this instrument we have at last the means of making an early and a sufficiently accurate diagnosis. As it sometimes is impossible to distinguish a simple from a malignant ulcer, except by a long and careful microscopical examination, it is not to be expected that inspection through a gastroscope will invariably give a definite answer. There will always be cases in which there is a certain amount of doubt. I am convinced, however, that there will not be many in which inspection through a gastroscope, aided and supplemented by the other methods of clinical investigation I have already detailed, does not give a sufficiently definite answer to render the line of treatment that is advisable absolutely beyond question. The instrument itself need not be described here. For the details of its gradual evolution from the form of gastroscope originally made by Leiter from the designs of Mikulicz, I must refer you to the papers published by Dr. Souttar and Dr. Thompson. It is sufficient for my purpose to-day to state that by its use the whole of the mucous membrane lining the interior of the stomach, except a small portion immediately around the cardiac orifice, can be inspected and examined deliberately without any further risk than that entailed by passing an œsophageal bougie while the patient is under an anæsthetic. The stomach should be emptied first and washed out by means of an ordinary tube. (If a simple test meal has been given before, advantage may be taken of this to obtain a specimen of the gastric secretion for the purpose of analysis.) The patient lies upon a flat table with a small cushion beneath the shoulders. The mouth is kept open with a gag, a full-sized bougie is passed first as a precaution, and as this is withdrawn the end of the instrument is carefully guided by the finger into the pharynx. Once past the cricoid cartilage, where there is always a little difficulty, the instrument slips down almost of its own weight until the cardia is reached. Here it usually stops again for an instant, and then slips onward into the stomach. The pump is then attached, the stomach inflated, the light switched on, and the nose of the instrument rotated and deflected until the whole of the interior has been systematically examined. The colour of the mucous membrane, pale or bright according to the amount of blood that is circulating in the stomach, the difference in the pattern of the cardiac and pyloric portions, the arrangement of the folds into which the lining membrane is thrown, and the regularity with which they converge towards the pylorus are apparent at once. Ulcers, erosions, and petechial hæmorrhages stand out distinctly. The least break in the even surface, the slightest change in the shape or direction of one of the folds, or the least thickening of the mucous membrane can be seen at once. At the same time the opportunity may be taken of ascertaining the shape and size of the stomach by percussion and by transillumination—darkening the room so that the illuminated area can be seen through the abdominal wall. Up to the present the use of the gastroscope has been so restricted that it is not possible to say what important consequences may not follow from it. Already it has been of the greatest service in confirming the diagnosis of cancer in cases in which there were only grounds for suspicion. Judging from the way in which the cystoscope has revolutionised the surgery of the bladder there is every reason to hope that when the gastroscope becomes better known and used as a matter of routine in every suspicious case a great deal of the most precious time of all will be saved, and a constantly increasing proportion of cases of cancer of the stomach will be diagnosed at a stage when there is still a prospect of the whole of the disease being removed.

CONCLUDING REMARKS.

When all is said and done, it still remains that the diagnosis of cancer of the stomach, at a sufficiently early date to render complete removal probable if not certain, is a problem that is not yet solved. The difficulty in the first instance is with the patient. When cancer occurs in a man whose digestion has previously been good, and only manifests itself by the vaguest and most general symptoms, no diagnosis can be made. The opportunity is not given. The patient does not think for an instant that there is anything seriously the matter, and dismisses it all from his mind as an attack of indigestion. Even when he does seek advice, it is usually some time before he will submit to a thorough examination under an anæsthetic, and by that time it is often too late.

The chances of early diagnosis ought to be brighter when cancer breaks out in a patient who has for years before been subject to attacks of gastric irritation. The possibility, nay, more, the probability, of its occurrence in such a case is always present before our eyes. The most active predisposing causes of cancer that we know are ceaselessly at work; and the slightest change of any kind, the least difference in any one of the ordinary symptoms, ought at once to suggest that cancer has already broken out, and that there should not be a moment's further delay. But here again the transition is so gradual and imperceptible, and the patient is so much accustomed to attacks of indigestion in all its forms, that the actual beginning of the disease is very seldom noticed. The earlier symptoms do not manifest themselves sufficiently plainly to attract the patient's attention and no steps are taken to find out, even though the question is one of literally vital importance, until the disease is so far advanced that the patient cannot help being alarmed.

The one great hope lies in the prevention of cancer by the efficient treatment of the condition which so often precedes it and which is undoubtedly a predisposing cause for it. Now that the interior of the stomach can be inspected with safety and certainty no anatomical lesion, whether a definite pathological diagnosis can be made or not, should be allowed to remain as a breeding spot for cancer. It does not matter whether it is an ulcer or a scar that has been left by one. It is sufficient that the symptoms caused by it persist or if they do disappear return again later. The persistence of symptoms of gastric irritation or their recurrence after a thorough course of medical treatment, loyally carried out, means that those measures are useless, that it is no good trying them again under similar conditions, that there is some reason why they are useless, and that an attempt must be made to ascertain what that reason is without further delay. In every such case, without waiting for the suspicion of cancer, a thorough examination of the interior of the stomach should be made with the gastroscope. If there is an ulcer that has become chronic or a scar that is constantly being irritated or any other lesion, it should be dealt with surgically without further delay or trial of measures that have already been proved futile. Every such ulcer or irritated scar in the walls of the stomach is not only a source of present misery to the patient, wrecking his life, and rendering him unfitted for either work or pleasure, but it is the strongest predisposing cause of cancer that we know. The question is a very simple one. The patient must be told that the choice lies between an immediate operation, with a reasonable prospect of a comfortable life afterwards on the one hand, and, on the other, life-long misery with more than the possibility of an outbreak of cancer at the end.

A CASE OF MALIGNANT DISEASE OF THE APPENDIX VERMIFORMIS TREATED WITH EMANATIONS OF RADIUM.

BY SIR T. LAUDER BRUNTON, M.D. EDIN., F.R.S.,
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL;
AND
LEWIS G. GLOVER, M.A., M.D. CANTAB.

THE case to be described seems of sufficient interest to merit publication for more than one reason. In the first place, the lesion was a primary growth in the appendix; in the second, the patient survived eight years from the commencement; and in the third, it was, as we believe, the first case to be treated by a solution of the emanations of radium. The use of radium emanations was first suggested by Sir William Ramsay and mentioned by one of us (L. B.) in a lecture at the International Congress of Arts and Sciences in St. Louis in September, 1904.

In the winter of 1900 the patient, a man, at that time aged 59 years, commenced to suffer from a looseness of the bowels with a tenderness over the region of the cæcum and slight rises of temperature. Although he had been abroad in China for many years there was no precedent history of any illness bearing upon his complaint at this time, and, indeed, his life-history was a very good one so far as the record of illness was concerned. The diarrhœa, which at first was supposed to be of simple character, persisted, and in the early beginning of it nothing abnormal in character was felt in the abdomen or per rectum, and the kidneys were found to be healthy. The diarrhœa, which was not severe, persisted, however, and the patient was seen by Dr. S. J. Gee and the late Dr. George Thin. The former found some abnormal dulness on percussion just above the anterior superior iliac spine, but no tumour was discovered at this time. It should be observed that the patient was of stout build. The diagnosis was obscure, but the case did not seem to tally quite with a chronic appendicitis, and it was thought to be one of colitis or fæcal ulcer.

Early in 1901 the present reporters saw the case together, and it was then possible to feel on deep pressure inside the anterior superior iliac spine a small elongated tender swelling. This swelling was suggestive of a chronically inflamed appendix or else of a malignant growth in the appendix; and this latter suggestion was then made by one of us (L. B.). It was decided that operation should be performed, and Sir Frederick Treves, who agreed with the fact of the presence of the swelling, opened the abdomen on a day early in February, 1901. The appendix was removed. It was found to have a considerable enlargement of the distal end, the proximal end attached to the cæcum being healthy. The whole organ was removed, the tumour at the end being shelled out from the iliac fossa to which it was bound down by adhesions; and this bed from which it came was scraped with a sharp spoon. A gauze plug was inserted down to this spot and the abdomen was closed. The patient did not take the anæsthetic very well, but made a good recovery, the gauze being removed on the second day after the operation, and there being no unusual complications afterwards. It was suggested from the macroscopic appearance of the tumour that it was merely an appendix with a bulbous end due to chronic inflammation. The appendix and tumour, however, were sent to Dr. F. W. Andrewes at St. Bartholomew's Hospital for report as to its nature. He reported: "The mucosa shows only chronic inflammation, but infiltrating the whole thickness of the muscular coat on one side I find cavities full of colloid material and lined by a very perfect columnar epithelium. ...... I have no doubt that it is a columnar-celled carcinoma with early colloid change. I cannot imagine anything but malignant disease infiltrating the muscular coat like this. It may very well be attacking the appendix secondarily. There is no connexion in my sections between the new growth and the mucosa."

During the next two years the patient remained well, but occasionally he suffered from pain in the right iliac fossa. This became more persistent in 1904, and in March of that year he was seen by us together. Some thickening was then detected lying deeply in the iliac fossa beneath the scar of the old operation wound. Throughout the summer of 1904 good health was maintained, but in October the tenderness again became more marked; he was, in spite of this, able to go shooting in December. On the 12th of that month commenced a severe illness, there being pain in the right iliac fossa and right flank, with rises of temperature at night, and a tumour easily palpable and situated in the right iliac fossa.

In January, 1905, Mr. C. B. Lockwood met us in consultation, and while it was recognised that a recurrence of the old growth had shown itself, it was also seen that there was some septic inflammation within or about the tumour. By this time the patient was severely ill and the tumour was growing rapidly in size, the temperature being continuously raised.

On Jan. 7th Mr. Lockwood opened the abdomen through the scar of the old wound and examined the growth with a view to ascertain if any relief could be given by its removal or by short-circuiting the bowel. The growth was found to be hard, nodular, and solid, and quite irremoveable, and as the patient was very ill and could not stand a prolonged operation the abdomen was simply closed and nothing further was done. The colon, it was noticed, passed over the summit of the tumour and was adherent to it, but was not obstructed by it. Convalescence from the operation proceeded but slowly and was hampered by the presence of congestion of the bases of the lungs and consequent cough, so that some of the superficial stitches in the abdomen gave way. The patient's condition getting slowly worse, it was decided to try the effect of injections of cinnamate of sodium, and these were given at intervals, without any appreciable effect, from Jan. 17th to Feb. 10th. The tumour was continuing to increase in size during all this time, and the temperature was hectic in character; further, the skin over the flank became œdematous and red, and a mass formed on the right thigh just below Poupart's ligament, which mass was also nodular to the touch. One of us (L. B.) at this time suggested that a solution of radium emanation should be given, and this was obtained by the kindness of Sir William Ramsay, who provided us with the quantities we required. One cubic centimetre of water which had absorbed radium emanations for 10 days was injected into the subcutaneous fat on two successive days (Feb. 11th and 12th). On Feb. 15th the last injection of cinnamate of sodium was given. On the 20th the mass in the groin gave way and fœtid green pus poured out in very large quantity, as much as four ounces coming away at one dressing.

No tube was inserted as the discharge was quite free. A smaller collection formed above Poupart's ligament a few days later and this was opened under cocaine anæsthesia, about one ounce of pus being evacuated. This healed up in 72 hours, the incision having the appearance of healing by first intention. In three weeks' time the big abscess had completely stopped discharging and the track leading into it closed. It was at the time a matter of comment by those who saw the case that so big an abscess should have closed up so quickly. The temperature dropped, the œdema and inflammatory thickening around the tumour diminished, and eventually disappeared; strength was regained, the patient going downstairs on March 19th and out of doors on the 22nd. From the time of the second dose of radium emanation, an injection of it of 2 cubic centimetres was given regularly every eight days, the patient having altogether 18 injections. In July the patient left for Scotland, where he was able to shoot and fish, and 1 stone 9 pounds in weight were gained in all from the time of the second operation. In October, 1905, the tumour was still palpable and was adjudged to be about the size of a Tangerine orange.

In November, 1905, another abscess formed very quickly and pointed just above the crest of the ilium. This was opened under gas and the track was found to pass into the iliac fossa. About eight ounces of greenish pus were evacuated. A rapid recovery ensued on this occasion, the febrile reaction lasting only some five or six days. When all the inflammatory reaction had subsided the tumour was thought to be smaller in size than it had been for a long time previously. In December the patient went to India, and three months later while travelling an abscess again formed and burst from the flank. On his return from the trip the tumour was easily palpable, and there seemed to be a tendency to delay in the passage of fæcal matter through the cæcum at the site of the growth.

In November, 1906, an abscess was again opened in the same situation as before in the right flank, and, as on the other occasions, health and activity were restored so completely that those who saw the patient could hardly believe him to be the subject of carcinoma. Indeed, at this time as well as subsequently more than one suggested that actinomycosis or some similar disorder might be the cause of the trouble rather than carcinoma. The late Professor D. J. Hamilton of Aberdeen and the Clinical Research Association were, however, unable to demonstrate any other than pus organisms in the discharges obtained from the sinus. It was thought wise to keep this sinus open from this time, and in May, 1907, it was found to pass some seven inches inside the tumour, which, though very slightly moveable, extended well beyond the scar of the original operation towards the middle line. Sir A. E. Wright, who examined the discharge, found a small bacillus which he was unable to grow on any of the usual media, but he found no evidence of actinomycosis.

In June, 1907, the condition of affairs not having improved, Mr. J. Bland-Sutton laid open the sinus and cautiously scraped the growth. The scrapings were separately examined by Dr. Andrewes, pathologist to St. Bartholomew's Hospital; Mr. A. G. R. Foulerton, director of the Bacteriological Department, Middlesex Hospital, and late director of the Cancer Research Laboratory; and Mr. G. L. Eastes, late director of the Clinical Research Association, and pronounced by each to be carcinomatous in character. A fæcal fistula formed, but closed up in the course of a few days, and in August the patient went to Scotland. While there a further attack of inflammation occurred, the fæcal fistula re-formed, and grave illness ensued; recovery, however, took place, and in October the patient was back in London, and he slowly regained health, so much so as to be able to attend to his duties.

During the next four or five months a fair measure of health was maintained, but in the spring of 1908 the attacks of inflammation and septic poisoning became more frequent. It had been suggested that a short-circuiting operatiof should be done, but seeing that there was no obstruction on the bowels and that the tumour could not be removed it was not pressed upon the patient, who at this time absolutely declined further operative measures. During the summer of 1908 several attacks of septic poisoning with fæcal leak at the sinus occurred, and in December, 1908, the patient gave his consent to a short-circuiting operation upon the advice of Mr. Bland-Sutton and Mr. R. J. Godlee.

Mr. Bland-Sutton operated on Dec. 8th, a loop of the ileum being transplanted into the sigmoid flexure. It was found that there was considerable adhesion between the lesser bowel and the growth. A track which had formed in the right thigh and which contained gas was opened. For the first 24 hours the patient did well, and then it was noticed that the bed was becoming wet, and it soon became evident that urine was being discharged from the old sinus. Death occurred on the next day. A necropsy was permitted, and Mr. C. Fletcher (acting on behalf of Mr. Eastes) who performed it reported as follows:—

The body was thin, but not emaciated; there were two open, suppurating wounds in the upper part of the right thigh and one in the right loin. A vertical, incised wound was present in the left side of the abdomen, through which a satisfactory junction of the ileum with the sigmoid flexure had been made; the ileum was anastomosed about 3 feet above the ileo-cæcal valve. In the right iliac fossa was a large, hard mass, about the size of the closed fist, to which were adherent several coils of small intestine. This mass had also infiltrated the tissues behind the peritoneum up to about an inch below the twelfth rib and extended over the brim of the pelvis below. The tissues in the right iliac region were so matted together that it was impossible to distinguish the precise anatomical relations. In the centre of this growth was the large intestine in the region of the ileo-cæcal valve. Here the intestinal wall was entirely replaced by the new growth which presented a large, ragged, dirty-looking ulcer which was exuding a colloid material. This ulcer communicated in two places with pieces of small intestine and backwards through a wide sinus with the opening in the flank above referred to. A connexion was also established with the wounds in front of the thigh. The bladder was entirely free from the growth and showed nothing abnormal. The right ureter as it reached the pelvic brim became embedded in the mass of the growth and was lost. It was unfortunately divided in the removal of the mass and no actual communication with ulcer could be traced. The right kidney, though small, showed nothing abnormal. No secondary deposits were felt in the liver and this organ was not enlarged.

This case is reported in its early stages as Case 58 in "Appendicitis" by Mr. Lockwood, p. 175 (1906).

It may be of interest to mention the result of the same treatment by injection of a solution of radium emanation in two cases which were under the care of one of us (L. G. G.), also in 1905. One of these was a patient sent for treatment by Mr. F. Swinford Edwards, who was suffering from carcinoma of the rectum of very rapid growth; the other was one of carcinoma of the right superior maxillary bone; both the patients were men. In neither case was any real improvement in the growths observed, but in both of them an undoubted increase in the amount of secretion from the ulcerated surface of the tumours was noticed during the 24 hours subsequent to the administration of the emanation; this was usually injected in the loins or between the shoulders; thus is suggested the possibility that the drug may have a selective affinity for tumour tissue, even when injected into the body at some distance from the growth.

When the nature of the disease is thoroughly known it is much more easy to combat it, as one sees very markedly in the case of infective diseases such as malaria, plague, and phthisis. But even when the pathology is unknown, remedies may sometimes be employed with great advantage empirically, like quinine in ague and mercury in syphilis, remedies which were equally effective before we knew that these diseases depended upon the presence of microbes in the body. We do not yet know the pathology of carcinoma or sarcoma. It is considered by many as probable that they also are due to microbes. No remedies have yet been found to act upon cancer in the same specific way as quinine and mercury in ague and syphilis, and the dreadful character of malignant disease makes one ready to grasp at anything offering a chance of cure. The application of radium to malignant disease at or near the surface has already been followed by results which, even if they are not all that can be desired, may yet be termed fairly satisfactory. Coley's treatment with the mixed toxins of a streptococcus and bacillus prodigiosus is also very promising, but unless used with very great care the treatment is not without risk. The result of treatment by radium emanations in the case that we describe is little short of miraculous and its failure in other cases was disappointing. It is to be noted, however, that the water which had absorbed radium emanations in the case of our first patient had been absorbing radium emanations for ten days. Later on, Sir William Ramsay discovered that these emanations apparently underwent destruction or alteration in the water, so that after exposure for five days it contained as much of the ordinary radium emanations as after ten days. It appears possible, however, that the active substance in the first injections was not the radium emanations themselves as given off from the metal, but the substances into which they were transformed after solution in the water.

At all events, the case seems to show that there is a possibility that radium emanations may be useful in cases of inoperable cancer and which cannot be affected by radium applied from the outside.

THE VARIABILITY OF THE LESIONS IN POLIOENCEPHALOMYELITIS.

By KARL BREMER, M.B., B.S. LOND.,
LATE ASSISTANT CASUALTY MEDICAL OFFICER, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

UNDER the name polioencephalomyelitis are included a group of cases of acute affection of the nervous system which are frequently epidemic and attended by a variety of symptoms dependent on the part of the nervous system affected. The causal agent of the disease is still unknown in spite of the closest investigation of several large epidemics. Flexner has reproduced and demonstrated the lesion in the spinal cords of animals quite recently, and the experiments have been successfully repeated by other observers.

An endeavour has been made to obtain some idea of the relative frequency of the lesions produced by this disease as it occurs sporadically in and around London. The records of the Hospital for Sick Children, Great Ormond-street, were used for this purpose.

During the last ten years about 400 cases were seen as in- and out-patients, and of these 48—i.e., 12 per cent.—showed some evidence of an encephalitis. Only 11 cases gave evidence of lesions both in the brain and spinal cord. These cases have an important bearing on the question of the etiology of certain forms of acute encephalitis, and serve to establish their common origin with simple poliomyelitis.

An analysis of 171 cases is given below:—

A.—*Spinal Cord Lesions.*

Paralysis produced.	No. of cases.	Site of the lesion in the cord.	Remarks on the cases.
Groups of muscles of one leg.	44	Lumbar enlargement.	The anterior tibial group was oftenest affected.
Muscles of both legs.	36	Lumbar enlargement bilaterally affected.	In some cases accompanied by incontinence of urine.
Both legs and one arm.	7	Lumbar enlargement and cervical segments 5, 6, 7, 8.	In these cases the degree of paralysis was at first severe, and then gradually subsided, leaving certain groups permanently affected, or, as in a few cases, no paralysis at all.
Both arms and one leg.	1	,, ,,	
Both arms and both legs.	15	,, ,,	
Muscles of one arm.	13	Cervical segments 5, 6, 7, 8.	
Muscles of both arms.	1	,, ,,	
Abdominal muscles.	8	Lower dorsal and upper lumbar segments.	The recti were most affected; evident wasting in three cases.
Intercostal muscles.	7	Diffuse dorsal lesion.	Unilateral shrinkage of chest wall resulted in three.
Erector spinæ.	7	Diffuse dorsal and lumbar lesion.	These all recovered enough to hold the head and body erect. A few showed wasting of the neck.
Muscles of neck.	16	Diffuse cervical lesion.	
Diaphragm.	2	Cervical segments 4, 5.	Transient weakness is not very uncommon.

Paralysis of the muscles of the neck and back was generally associated with some other lesion, such as paralysis of the limbs or facial paralysis. The diaphragmatic paralysis was unilateral and in one case was demonstrable before the X ray screen. Paralysis of the sphincters appears to be rare. Incontinence of urine was present in 13 children over 2 years of age, and in four of these it was associated with paralysis of both legs, and the lesion was probably in the lumbar region. Hyperæsthesia was a common early symptom, but only in one case was anæsthesia present and the lesion approximated to a transverse myelitis in the dorsal region as both legs were also paralysed.

B.—*Brain Lesions.*

Symptoms produced.	No. of cases	Probable site of lesion.	
Tongue protruded to one side.	1	Hypoglossal nucleus.	Four of these cases died from respiratory or cardiac failure.
Difficulty in swallowing.	3	11th and 9th nuclei.	
Difficulty in articulation.	3	,, ,,	
Paralysis of soft palate.	1	,, ,,	
Sudden deafness.	1	Terminal cochlear nuclei or the inferior corpora quadrigemina.	
Facial paralysis.	15	7th nucleus (pontine).	
Internal squint in one eye.	6	6th ,, ,,	
Internal squint in both eyes.	3	6th ,, ,,	
Facial anæsthesia.	2	5th sensory nucleus.	
Ophthalmoplegia externa with double optic neuritis.	1	Superior corpora quadrigemina and external geniculate bodies and 3rd and 4th nuclei.	
Nystagmus.	6	Cerebellar lesion with small-celled perivascular infiltration about the dentate and roof nuclei.	
Ataxia.	8		
Intention tremor.	3		
Slow rhythmic tremor.	9	Cerebello-rubro-spinal tract.	
Hemiplegia.	7	Rolandic (motor) cerebral cortex.	
Transient central blindness.	1	Occipital cerebral cortex of both hemispheres.	

The cases of bulbar paralysis are rare, although there is little doubt that some which produce sudden death go unrecognised. The seventh nucleus lesion appears to be the commonest form of encephalitis inferior. It is an important link in establishing the common etiology of polioencephalitis superior and poliomyelitis, as both have been associated with a seventh nucleus lesion. The slow rhythmic tremor, which was present in nine cases, resembled that described by Dr. Gordon M. Holmes in *Brain*, 1904, as associated with organic disease of the cerebello-rubro-spinal track. The presence of nystagmus and ataxia on the one hand, and sixth and seventh nucleus lesions on the other, in occasional association with this tremor, indicate cerebellar and widespread pontine involvement and lend support to the above localisation made by Dr. J. Miller in *Brain*, 1909. In three of these cases there was temporary loss of speech, possibly due to the speech centre being cut off from the nuclei presiding over articulation.

The cerebellar cases with acute onset, occipital headache, ataxia and nystagmus, showed a tendency to complete recovery. In two of these there was loss of speech, and in two a slow slurring speech developed, whilst, apart from the unconscious cases, five had transient incontinence of urine for no obvious reason. In 7 cases of hemiplegia, in children from 1 to 5 years of age, it seemed likely that the cause was a polioencephalitis superior. The onset of the feverish attack during the summer months was associated with unconsciousness in 3 cases and a fit in 3 cases. In 2 cases a right-sided hemiplegia was associated with loss of speech lasting four weeks.

I have to thank the physicians to the hospital for their kind permission to collect these cases.

A FATAL CASE OF ACUTE ANTERIOR POLIOMYELITIS.

BY J. ODERY SYMES, M.D. LOND., D.P.H.,
PHYSICIAN TO THE BRISTOL GENERAL HOSPITAL.

CASES of acute anterior poliomyelitis in young adults going on to a rapidly fatal termination are not common. For this reason, and because the symptoms are not precisely typical, I have thought it well to report the following case.

The patient, a boy, 16½ years of age, had always enjoyed good health and was apparently robust. During the summer vacation he had indulged rather too vigorously in sea-bathing, sometimes entering the water four or five times a day. On Oct. 10th he had headache and a rise of temperature to 104° F., for which no cause could be found. He was given a mercurial purge and put to bed, and on the following day (the 11th) the temperature had fallen to normal. As there was no return of fever, and he continued to feel quite well, he returned to school on the 14th. Subsequently it was ascertained that he felt slight rheumatic pains in the arms during the remainder of the week. On the 17th the boy complained of headache and of pain in the back of the neck. The pain radiated up from the first dorsal spine over the occiput; the headache was frontal. The temperature was 101·6°, and there were vomiting and constipation, with a very coated tongue. Later in the day there were pain and weakness in the left arm, which soon after midnight was completely paralysed.

When the patient was seen on the 18th there was complete loss of power in the left shoulder and upper arm, and the forearm and hand preserved only a very slight power of flexing and extending the fingers. There was no change in this condition throughout the progress of the case. There was no alteration of sensation in the limb and the reflexes were absent. The left naso-labial fold was not so well marked as the right, and subsequently slight muco-purulent discharge developed in the left eye, but I was never able to say definitely that there was left facial paralysis, nor could the boy's relatives detect any change in his appearance. A faint extensor plantar reflex was obtained on the left side, but no weakness of the legs could be detected at any time, though later in the case there were twitching and constant restless movement of both lower extremities. There was some difficulty in micturition, but this passed off and no incontinence or retention was observed throughout. The deep and superficial reflexes below the level of the dorsal enlargement were normal. Photophobia was a prominent symptom, but there was no optic neuritis, nor did it develop subsequently. The vomiting, headache, and constipation persisted, but the pain over the upper part of the spine, which had not been relieved by aspirin, phenacetin, or counter irritation, was apparently stopped by the application of an ice-bag. Any attempt to flex the head forward on to the chest awakened the pain afresh. The temperature during this and the subsequent day varied between 103° and 104°, the pulse was 120, and the respirations were 30.

During the night of the 18th the shoulder and scapular muscles of the right arm became paralysed; the upper arm, forearm, and hand muscles were intact. During the two following days the fever kept high, and at intervals there was delirium. The photophobia and pain in the neck were less marked, but there was a pain in the lumbar region extending round the abdomen. There were also epistaxis and constant restless movement of the legs. The sphincters were not affected. On the 21st the temperature fell to normal and remained so. The respiration became for a short time slower, but was altered in character, being purely costal in type, whilst the reversed movement of the abdominal wall pointed to paralysis of the diaphragm. From this point the mental condition became worse, fæces, and later on urine, were passed into the bed, and the twitching and restlessness of the lower limbs were more observable. The patient died on the sixth day of the illness from gradual respiratory failure. On the day of his death there was no paralysis of the lower extremities, no loss of sensation, or alteration of deep or superficial reflexes, except a doubtful extensor reflex on the left side. The pupils were equal in size and contracted; there was partial control over the bladder.

The points of especial interest are: the existence of a brief, sharp febrile attack one week before the onset of the illness; this fact, coupled with the nature of the pyrexia and with the occurrence of epistaxis, would point to the disease being of infective origin. The existence of slight facial paresis has been noted before in cases of infantile paralysis. It is generally transitory, and indicates that the condition is not a purely local spinal affection, but that other parts of the nervous system may be affected. There is a steadily accumulating weight of evidence to show that the direct exciting cause of acute anterior poliomyelitis attacks the whole nervous system with a special predilection for the grey matter (owing perhaps, as Buzzard suggests, to its greater vascularity). The resulting symptoms will, of course, vary according to the site of the lesion; sometimes they are cerebral, sometimes spinal, and sometimes neuritic. In the cerebral group there may be further variations according to the relative severity of the lesions in the cortex or in the basal ganglia. It is clear, therefore, that to regard the disease as spinal in its distribution is to take too limited a view; it should rather be thought of as a general infection of the nervous system.

Clifton, Bristol.

CHRONIC SPHENOIDAL SINUS DISEASE.

By W. S. SYME, M.D. EDIN.,

ASSISTANT SURGEON, EAR, NOSE, AND THROAT HOSPITAL, GLASGOW.

THIS communication is based on a total of 17 patients on whom I have operated for disease of one or of both sphenoidal sinuses during the past 18 months. In most of them the posterior ethmoidal cells were also involved, but in the number are not included cases in which the sphenoidal condition was associated with antral or frontal sinus disease, nor those where the general nasal condition was one of atrophic rhinitis with ozæna. In most of these patients, as well as in others who did not submit to operation, an ophthalmological examination was obtained, and in this connexion my thanks are due to Dr. John Rowan, the consulting oculist to the Glasgow Ear, Nose, and Throat Hospital. In all the disease was of the chronic variety and in nine it was limited to one side. Though several acute cases have come under my care in none of them have I found it necessary to operate, cure being obtained by nasal douching with or without lavage of the sinus itself. I propose first shortly to relate the chief facts in connexion with these cases, and then, with them as a text, to make some observations on sphenoidal sinus disease.

CASE 1.—A male, aged 50 years. Nasal obstruction and nasal discharge for some months. Disease of left sphenoidal sinus and of left posterior ethmoidal cells. Ethmoidal cell above and external to the sinus. Eyes—Right: disc pinkish and full; marked venous pulsation. Left: disc pale, suggesting optic atrophy, which is borne out by further examination. Result: Nasal condition cured; sinus quite dry; patient feels quite well. Eye condition progressive on the left side.

CASE 2.—A male, aged 39 years. Discharge from nose of one year's duration, sore throat, hoarseness at times, deafness and noises in right ear of two weeks' duration, severe giddiness for same length of time. Ears—Right: membrane shows cicatrices from former middle-ear suppuration; quite dry; watch 0, Rinné +. Left: membrane shows adhesive processes and fibrous changes in tympanum; watch 6, Rinné +. Vertigo severe, with tendency to fall to right side. Quite unable to walk without assistance. Nystagmus on looking to either side, worse on looking to right, horizontal in direction and strongest movement towards side to which eyes are turned. No nystagmus when looking straight forward. Caloric reactions: Cold water in the right ear does not appreciably alter nystagmus in either direction. Warm water in right slightly increases nystagmus to right; does not appreciably change nystagmus to left. Cold water in left ear abolishes nystagmus to left and much increases nystagmus to right. Warm water in left ear abolishes nystagmus to right and much increases nystagmus to left. Patellar reflexes increased, no ankle clonus; right plantar reflex increased but still flexor. Nose: Right sphenoidal and posterior ethmoidal disease. Right sinus contained polypi, granulations, and pus in outer and upper part. At the anterior part of the supero-external boundary the granulations could be seen to be pulsating. A probe gently pressed against this part allowed some drops of pus to enter the sinus. Eyes: Neuritis in both. Course: This patient improved slowly; the sphenoidal cavity required a good deal of attention in keeping it freely open and in removing exuberant granulations. The vertigo immediately began to improve after the operation on the sinus, but he had occasional severe attacks which appeared to be dependent on blocking of the sinus outlet. Now the discharge has quite ceased. Once or twice when he has sniffed strongly he has had a slight vertiginous attack, but otherwise he has had no decided vertigo for several months. A feeling of dizziness remains, especially if he stoops or turns suddenly. He looks well and expresses himself as feeling so, and is fit for work. The hearing in the right ear has improved without other treatment, the watch is now heard at three inches, the higher tuning forks are heard rather better than the lower, and he says that the note of the tuning fork is discordant when compared with the left ear. There is still nystagmus, chiefly when the eyes are directed to the right, very slight when turned to the left. The optic neuritis is passing off, the improvement being more marked on the left side.

CASE 3.—A female, aged 45 years. Post-nasal discharge of two years' duration with severe occipital headaches and feeling of general ill-health. Double sphenoidal sinusitis and posterior ethmoidal disease. Lining membrane œdematous along outer wall of right sinus, which is small. Œdematous membrane with polypi and granulations in antero-external recess of left sinus. The left posterior ethmoidal cell extends above and to the outer side of sphenoid for a considerable distance. Granulations in this cell and in adjacent parts of sphenoid. Eyes: Neuritis in both, more marked in left. Result: Nasal cavities almost free from discharge, headaches gone; patient feels much better in general health; neuritis in eyes passing off.

CASE 4.—A male, aged 36 years. Post-nasal discharge of long duration with sore throat. Sphenoidal and posterior ethmoidal disease on both sides. Œdematous and polypoidal lining membrane in both sinuses. Left sinus much the larger and extends behind the right. Eyes: Discs full, edges indistinct, neuritis. Result: Disappeared from observation.

CASE 5.—A female, aged 35 years. Discharge from nose of one year's duration, severe headaches. Pus and polypoidal tissue in right sphenoidal sinus, polypoidal tissue in antero-external recess of left side. Eyes: Discs pinkish and full; veins full and twisted, the left side being the worse. Result: Nasal condition cured, no discharge, general health much better, headaches less frequent and not so severe. Eyes: Condition passing off.

CASE 6.—A female, aged 23 years. Discharge from nose of one year's duration, general ill-health. Double sphenoidal and posterior ethmoidal disease. Ethmoidal cells on both sides full of polypoidal and granulation tissue. Pus in right sinus which is small. Left sinus larger and contains polypoidal tissue in the part adjacent to ethmoid. Eyes: Discs pinkish; veins, especially in right, full and twisted. Result: Cured; nose free from discharge; patient feels quite well; eyes normal.

CASE 7.—A male, aged 45 years. Much post-nasal discharge of four or five years' duration, headaches for some time chiefly on right side. Right sphenoidal disease, sinus small and full of polypoidal tissue. Eyes not examined. This case was operated on without removal of the middle turbinate. Result: Cured; discharge quite ceased and headaches gone.

CASE 8.—A male, aged 47 years. Nasal obstruction of four years' duration, loss of sense of smell, nasal polypi in both nostrils. Double ethmoidal and sphenoidal disease. Polypi in left sphenoidal sinus, œdematous lining membrane and pus in right. Eyes not examined. Result: Disappeared from observation.

CASE 9.—A female, aged 22 years. Post-nasal discharge of two years' duration, general ill-health. Right sphenoidal and posterior ethmoidal disease. Pus and granulations in right sphenoidal sinus. Posterior ethmoidal cell external to sinus in practically its whole length. Eyes normal. Result: The nose in this case is very narrow and the after-treatment was protracted. Now the patient feels much better in health, but the discharge, though much less, has not altogether ceased.

CASE 10.—A female, aged 47 years. Nasal obstruction and discharge of two years' duration. Left sphenoidal and posterior ethmoidal disease. Large development of ethmoidal cells and of sinus. Posterior wall of sinus 4¼ inches from nasal spine. Ethmoid much diseased, granulations and polypoidal tissue in sinus adjacent to ethmoid. Eyes normal. Result: Recent case; cure of nose proceeding satisfactorily.

CASE 11.—A male, aged 23 years. Nasal obstruction, post-nasal discharge, and sore throat for two or three years. Double sphenoidal sinus disease. Right side operated on nine months ago. Operation on left recently. Œdematous lining membrane in right sinus, good-sized polypus at entrance to left sinus, and polypoidal condition of lining membrane chiefly in floor. Eyes: Discs pink and full, more marked on right. Result: Right side cured, free from discharge; left side proceeding satisfactorily.

CASE 12.—A female, aged 23 years. Nasal obstruction on right side of six years' duration, frequent headaches. Polypi in right nostril. Disease of right sphenoidal sinus and right posterior ethmoidal cells. Eyes normal. Result: Nasal condition cured, headaches have disappeared, and the patient feels quite well.

CASE 13.—A male, aged 46 years. Post-nasal discharge of some years' duration. During the past two years the discharge has changed in character, having become more purulent and taken on a sickly odour. Feeling of malaise and depression of spirits, sore throat, hoarseness at times, dull headache with occasional acute headache over left frontal region. Treated for several years without benefit by various means for post-nasal catarrh. Left sphenoidal and ethmoidal disease. Soft polypoidal tissue and bright yellow pus in ethmoid. Large posterior ethmoidal cell full of diseased tissue extending somewhat above sphenoidal sinus. This latter cavity was of large size and full of thick cheesy pus. After removing this with a spoon it was found that except at the part next to the ethmoidal cell, where there were a carious opening and soft granulations, the lining membrane was quite healthy. It was consequently left. This sinus extended behind the right well to the right side. Eyes normal. Result: Nasal condition cured, complete cessation of discharge, and disappearance of headaches and of feeling of malaise and depression.

CASE 14.—A female, aged 20 years. Post-nasal discharge with disagreeable odour of some years' duration; ill health; posterior sphenoidal and ethmoidal disease on both sides. Small sinuses situated rather high up. Eyes not examined. Result: After a prolonged after-treatment the condition is practically cured; the discharge and odour have almost entirely disappeared and the patient's health is quite restored.

CASE 15.—A female, aged 35 years. Frequent colds in head and post-nasal discharge for some considerable time. Headache, especially on right side, and pain in right eye and right side of nose, with swelling, for the past week, of the tissues around the right eye; sore throat for some months. Right sphenoidal and ethmoidal disease. After removal of middle turbinate and curettage of ethmoid pus was seen coming from sphenoidal ostium. The sinus was opened and the lining membrane in the antero-external recess and in the region of the ostium was found to be diseased. Eyes: Discs normal, but there is slight orbital cellulitis. Result: The pain in the head has ceased, the cellulitis has disappeared, and the nasal condition is on a fair way to cure. The case is a somewhat recent one.

CASE 16.—A female, aged 20 years. Discharge from nose, chiefly post-nasal, of five years' duration; sickly odour at times. Headaches lately. Double sphenoidal and posterior ethmoidal disease, left side the worse. Operation on left side. Narrow sinus antero-posteriorly with formation of septa. Pus and œdematous lining membrane chiefly in floor. Somewhat difficult case owing to irregular nasal septum. Eyes: Discs pinkish, veins full. The result of this case is yet undecided.

CASE 17.—A female, aged 26 years. Sore throat and post nasal discharge of one year's duration. Hoarseness for some months. Left sphenoidal and posterior ethmoidal disease. Large posterior ethmoidal cell external to sinus. Sinus long and extends behind right. Disease chiefly in sinus. Œdematous membrane and muco-pus far back on floor. Eyes normal. Recent case.

The chief complaint made by the patients was of continued post-nasal and nasal discharge and chronic head cold, in some of several years' duration. Certain of them stated that the discharge had undergone a change in character, had become yellow and more thick, and had taken on a disagreeable odour. The results of this discharge were seen in more or less well-marked pharyngitis, granular, congestive, atrophic, or a combination of these; laryngitis, and certain middle-ear changes which one associates with post-nasal discharge and its consequences. Headache was a common complaint; in three it was described as severe, in one the pain was confined to the side of the disease. Most of the patients also complained of depression of spirits, lack of energy, and a feeling of general seediness and ill-health.

The rhinological appearances were fairly constant. In one case only, a double sphenoidal sinusitis, were there ordinary nasal polypi present. Atrophic changes, not of a marked character and affecting chiefly the posterior parts of the inferior and middle turbinals, were observed in most. In several, however, the other extreme, œdema of these parts, was seen. In some the suggestion of disease in the posterior group of accessory air spaces was obtained by the presence of pus between the middle turbinate and the septum, but this sign was not present in all. In most of the cases after, if not before, the application of cocaine and adrenalin to the nasal mucosa a portion of the anterior wall of the sphenoidal sinus could be seen and examined, median rhinoscopy occasionally being helpful. This part was observed in some cases to be highly congested, and in others to be markedly anæmic although untouched by the anæsthetic, and in most some thin, sticky, purulent discharge could be wiped from its surface, and a probe passed into the crevice between the middle turbinate and the sinus dislodged some thicker pus. As a rule, however, the discharge was by no means large in amount. Posterior rhinoscopy, sometimes very difficult to carry out by reason of the increased irritability of the pharynx, showed intense congestion of the mucous membrane covering the vault, with purulent or muco-purulent discharge in this region and in the naso-pharynx generally. In some of the patients there was œdema of the septum posteriorly, but this condition is not uncommon apart from posterior nasal sinus disease.

None of the symptoms and signs which have been described are taken to be either separately or collectively pathognomonic of sphenoidal disease, but rather, one would say, are they suggestive of disease in the posterior group of nasal accessory cavities. To complete the diagnosis it is necessary to examine the inside of the sinus. To this end, after the application of cocaine and adrenalin to anæsthetise and contract the nasal mucous membrane, a probe, bent slightly at the point, is passed in an upward and backward direction between the middle turbinate and the septum, bisecting the length of the former. Arrived at the anterior wall of the sphenoid the point is turned upwards and outwards, and with a little patience and practice it is in most cases not difficult to pass it into the sinus. Sometimes, however, a good deal of difficulty is experienced and occasionally it is impossible, and this for anatomical reasons. In a series of 230 skulls examined I found the ostium absent in one large sinus, and in another, also of good size, it led into the posterior ethmoidal cell. It is necessary to bear in mind the average distance of the posterior wall of the sinus from the anterior nasal spine of the superior maxilla so as to decide if the probe has actually entered the cavity. I found this in adult skulls, male and female, to be 3½ inches, the extremes being 2⅞ and 4¼ inches. In very few was the distance under 3 inches. These figures are in agreement with other observers. The passage of the probe should always be controlled by measurement or a graduated probe used. The posterior ethmoidal cell is a source of error in this connexion. In one patient I found the posterior boundary of this cell on one side distant 3½ inches from the anterior nasal spine. It is very rarely, however, that it extends so far beyond the anterior wall of the sphenoid. As a rule, when the probe has passed into the sinus one has the sensation of its having entered a cavity and it can be moved about freely, though it must be borne in mind that the size of the sinus varies greatly. The condition of the lining membrane can now be ascertained to a certain extent. The probing should be done gently, especially in the upper and outer part, though it should be carried out systematically, for, as these cases show, the pathological changes may be strictly localised. The firm tap of the healthy parts can easily be distinguished from the sensation of bogginess which proceeds from œdematous or polypoidal portions of the lining membrane. On the withdrawal of the probe and after wiping away all discharge from the neighbourhood a small-sized cannula may be passed, and with an air bag an attempt may be made to blow out any discharge there may be in the cavity, or syringing may serve the same purpose. As a rule, in chronic cases at any rate, only a small amount of discharge will be obtained. Its absence, however, has little importance; in several cases where there were found on operation well-marked changes in the lining membrane in the shape of granulation tissue or polypi, there was very little discharge actually present in the sinus. There is no doubt, I think, in chronic sphenoidal sinusitis, where as a rule the ostium is more patent from atrophic changes in its neighbourhood, that the discharge is constantly removed by syphonage and by the alterations in the position of the head, as for instance during lying and bending. This I take it is the reason why one has been so frequently told in these cases that the discharge is worse in the early part of the day. The same, as one knows, is the case in antral disease. The absence of pus on washing or blowing out the sphenoidal sinus has erroneously been taken as conclusive of the absence of disease. Some recommend puncture of the sinus by trocar and cannula through the anterior wall. This procedure is not free from risk, though the attachment of a stop to the cannula minimises this. The roof of the sinus sometimes dips very abruptly with an S-shaped bend, and might conceivably be injured. In several skulls and in two patients the sinus of one side has extended well beyond the middle line anteriorly, and in such the puncture might be made into the wrong cavity. Personally, I have never found the necessity for its performance. Occasionally, when some difficulty has been experienced in passing the cannula through the ostium, the exertion of a little pressure when the point is in position has caused it to penetrate the mucous membrane, which partially occludes the natural opening, or the thin bone in the vicinity and to pass into the sinus. If the difficulty should be great it is well to wait till the removal of the middle turbinate has been carried out, if the examination already conducted warrants this operation. As a result of this proceeding the exploration of the sinus is much simplified, more of the anterior wall is seen, and any granulation or small polypi in the spheno-ethmoidal recess can be removed.

In one or two of the patients the examination of the anterior wall of the sphenoid with the probe gave the impression of bare bone, but no conclusion as to the inside of the sinus could be drawn from this, and, moreover, in certain parts of the nasal cavity where the membrane is thin it is easy to imagine that the bone is denuded of its covering.

Sondermann's suction apparatus is sometimes helpful in diagnosis. In one of my patients the removal of pus from the sphenoidal sinus was very evident. Its use, however, as a diagnostic, as well as a therapeutic, agent is not free from danger, in view of the possibility of the destruction of bone in the wall of the cavity in the region of the cavernous sinus.

In several cases Dr. W. F. Somerville kindly undertook the examination of the sphenoidal cavity and ethmoidal cells by skiagraphy, but I cannot say that we obtained any definite help from this method; certainly not so much as in some cases where I had his help in which the question of frontal sinus disease was under consideration. Looking to the conditions found on operation this is not surprising.

In none of my cases were there urgent symptoms, such as those pointing to cavernous sinus thrombosis.

Even after the most careful examination by all methods and after weighing the symptoms it is in many cases impossible to arrive at a more definite diagnosis than that there is disease in one or more of the posterior ethmoidal cells or in the sphenoidal sinus, or in the whole of the posterior group of accessory air spaces. Even the discovery of changes in the optic nerve, bearing in mind the variation in the relation of the sinus to the posterior cell and of both to the nerve, will not help us much, though one's attitude towards operation will be modified thereby. The exact diagnosis must then in many cases remain in abeyance. As a matter of experience, however, I should say that though it is not unusual to get posterior ethmoidal disease without sphenoidal disease it is rare to get the latter without the former; or to put it in another way, chronic sphenoidal disease is, in my opinion, in most cases secondary to disease in the posterior ethmoidal cells. With acute sphenoidal disease this is probably not so commonly the case.

Treatment.—As in disease of the antrum and frontal sinus so in disease of the region under consideration, certain cases either on account of their symptoms or because of the result of examination at once suggest the advisability of operation. Probably, however, in the majority milder measures should first be given a trial. Of these, nasal douching is the chief followed by drying and insufflation of powdered boracic acid. In certain cases where the ostium is easily entered the sinus itself should be regularly washed out. The cavity is then dried by means of the air bag and boracic acid blown in through the cannula. Reference has already been made to the use of Sondermann's suction apparatus as a therapeutic method.

Besides the patients on whose cases this communication is based at least an equal number have come under my care in whom the diagnosis of sphenoidal disease was hardly doubtful and who have been treated without operation. When these simpler methods fail, or when for some reason their use is not considered advisable, there are several lines of surgical procedure open to us. In most cases removal of the middle turbinate is necessary if this has not already been carried out for purposes of diagnosis. The condition of the posterior ethmoidal cells can then be ascertained in more detail, and the removal of this structure is itself sometimes sufficient to admit of the cure of ethmoidal and sphenoidal disease by giving freer drainage and by permitting of the better application of simple antiseptic treatment. If, however, it is decided to deal with the ethmoidal disease by further operative measures, and if the state of the sphenoidal sinus should still remain in doubt, operative treatment should be limited to the cells. These can be removed by punch forceps and curette, acting, of course, under the control of good reflected light. That should be a matter of course in all intranasal surgery, but it is doubly imperative in dealing with these parts. It used to be recommended that curettage of the ethmoid should be carried out under the control of the finger passed behind the palate and into the posterior naris, but I hardly think any rhinological surgeon would consider this a sufficient safeguard. The curetting should be systematically and carefully performed, working always downwards and forwards. The opening up of the ethmoidal cells may reveal the pathway of the disease to the sphenoid. This is not unusually the case, and has been my experience in several of the patients operated on. In such one naturally follows the course which the pathological process has taken, opening into the sinus by way of the posterior ethmoidal cell. Where, however, the ethmoid has been dealt with without revealing a track to the sphenoid it is well in such cases as we are now dealing with—viz., those in which the condition of the sinus remains in doubt—to await the result of this treatment on the discharge before proceeding further. The after-treatment should be carried out in the way to be later described.

When it is determined, *ab initio*, to operate on the sphenoidal sinus this may in some few cases be performed without removal of the middle turbinate, the atrophy of the parts being sufficient to expose most of the anterior sphenoidal wall. As a rule, however, and especially in view of the frequency of associated ethmoidal disease, it is better to remove this structure as a preliminary. I then prefer to enter the sinus directly. This I do with a long-handled spoon passed to the region of the ostium, breaking through the posterior ethmoidal cell for the purpose if necessary. By a little pressure the bone in the neighbourhood is broken through, the opening is enlarged by working towards the centre and downwards, and the anterior wall is completely removed by means of Hajek's strong punch. I have used a long chisel to remove the lower thick part, but this punch seems strong enough for this purpose and is safer. For free drainage it is necessary that no cul-de-sac should be left in the lower part of the cavity. The extent of the sinus should now be determined by means of the probe and its walls carefully examined for diseased lining membrane and for carious openings in the bone. Special care and attention should be paid to the supero-external portion and to the recess adjacent to the ethmoid. In the former position the bone separating the cavity from the cavernous sinus, the carotid, and the optic nerve, is always thin, even if it is not absent through carious destruction or developmental defect, and in the latter I have most frequently found œdematous and polypoidal lining membrane. The curettage should be carried out in detail, great gentleness being used in connexion with granulations growing in the neighbourhood of carious bone. Sometimes it is wiser to leave these untouched. No force should be employed in curetting the roof or external wall. Healthy portions of the lining membrane should be left, as by so doing the ultimate cure is hastened. If it is intended to remove the posterior ethmoidal cells this can now be done with safety, taking one's bearings from the external boundary of the sinus. In most cases the bone bounding the antero-external recess of the sinus is hard and firm, affording protection to the optic nerve as it passes through the foramen, but sometimes the cavity extends beneath this opening, and this prolongation may have a very thin roof or the roof may be in part absent. Needless to say, in such cases the curetting should be carried out with the greatest circumspection. In three skulls I found this anatomical peculiarity and in another skull the posterior ethmoidal cell extended similarly beneath the foramen.

Fortunately, I have never had the mischance to wound the cavernous sinus, though I am aware that this has happened to others. In the general run of cases the curettage of the cavity is not attended with severe hæmorrhage. There may be a sharp spurt for a minute or so, but this can be controlled by cotton-wool mops, and the operation can be carried out in detail and under the control of sight. If an opening is found in the intersinusal septum it will be necessary to do the double operation, even if this has not been determined upon by reason of the examination of the opposite nasal fossa, for the two cavities may be discharging through the one side. The parts may be swabbed with zinc chloride, silver nitrate, or some such solution. It is then carefully dried and boracic powder, or aristol and boracic powder, as is my habit, insufflated. No packing is required or desirable. The after treatment, both of the sphenoidal and of the ethmoidal region, exacts a good deal of patience and constant attention. Granulations grow quickly and tend to close the sinus before the interior is healed, so that they must be kept in check. Hence it is necessary at the operation to remove the anterior wall as completely as possible. In the ethmoidal part, too, granulations tend to be exuberant. Thoroughness in removing the disease from the sinus and cells will shorten the period of after-treatment, but it is always of some weeks' duration, and healing may not be complete for three or four months. There need, however, be no pessimism as to the result. The cases herein detailed prove this. The disagreeable post-nasal discharge ceases, the headaches are improved or disappear, and patients express themselves as feeling in every way more fit and cheerful. With many people the continuance of nasal or post-nasal discharge has a most depressing effect. They cannot keep their minds off it; it becomes almost their absorbing thought. A business man, for instance, stated that since the cure of his nasal disease he felt much more keen mentally. Previously the difficulty of concentrating his attention on any matter worried him. He was always conscious of the discharge and he felt depressed and melancholy. One has, of course, heard the same story in connexion with disease in other of the accessory nasal cavities, and, indeed, wherever a chronic nasal discharge is present.

Beyond some discolouration and puffiness of the skin in the region of the orbit and some rise of temperature in certain of the patients operation has been followed by no serious results. In none have I felt justified in using the external route. Occasionally it is necessary to remove a spur, to treat a septal deflection, or to do a partial tubinectomy as a preliminary. Even after doing this there is in some narrow noses such a confined space to work in that if there should be any severe symptoms or marked changes in the optic nerve it would, I think, be wise to operate as one does in the ethmoidal part of Killian's complete frontal operation. There is no doubt that this gives a very direct access to the ethmoidal cells and to the sphenoidal sinus, but sometimes the resulting scar is unsightly.

The considerations as regards anæsthesia are the same as in other intranasal operations. Most of these patients were operated on under cocaine, but in some chloroform was necessary. The patient should be prepared for general anæsthesia and then operated on under local if possible. The removal of the anterior sphenoidal wall causes a good deal of pain. Probably the recumbent position is always advisable.

I wish now to make some remarks with reference to the examination of the eyes in these patients. This had special reference to the condition of the optic discs and was carried out in 14. In six the discs were reported normal; in four the condition was one of congestion of varying degree in the different patients and in either side of the same patient; in three there was definite optic neuritis on both sides. In two of these patients there was double sphenoidal sinusitis, while in one the disease was confined to the right side, but there was a small extradural abscess in connexion with the sinus disease. In this patient, though the neuritis was practically equal in degree on both sides at the time of the first examination, after the cure of the sinus disease the left disc improved more quickly than the right. In one case, that of a man with left sphenoidal and left posterior ethmoidal disease, there was atrophy of the left disc, while the right disc showed marked congestion. So that in these cases we have practically every gradation from the normal optic nerve to atrophy associated with disease of the posterior accessory nasal air spaces. Excepting the recent cases and in one patient who disappeared from observation, unfortunately one with optic neuritis, subsequent examinations were made at periods varying from five weeks to several months. The optic atrophy is progressive and the sight of that eye is getting worse. In all the others the cure of the sinus disease has been followed by cure of, or improvement in, the condition of the optic nerves. In view of the high percentage of cases in which these various changes in the fundus of the eye were found it cannot, I think, be controverted that they have the relation to the sphenoidal and ethmoidal disease of effect and cause. Whether the ethmoidal disease or the sphenoidal is the more baneful in this connexion it would be difficult to determine, and as a matter of fact the question is not of much practical importance, as the two diseases are so commonly associated. From the examination of a series of skulls I found that in the great majority the posterior ethmoidal cell did not extend back as far as the optic foramen. On the other hand, the intra-orbital part of the nerve which may extend to one inch has sometimes a very close relation to this cell, and, moreover, the cellular tissue which surrounds it and helps to protect it from injury rather makes it more vulnerable by permitting of the extension of the ethmoidal infection to the neighbourhood of the nerve. In rare instances from a developmental defect the nerve has been found actually traversing the sinus and the posterior ethmoidal cell, a fact which emphasises still more the necessity for great care in curetting the external wall. The relation of the posterior cell to the sinus is extremely variable, and in quite a fair proportion of cases there is a well-developed extension of the ethmoid along the external and upper boundary of the sphenoidal cavity. It is interesting to notice that in two of these patients, the one with optic atrophy and one of the patients with optic neuritis, this relationship was found.

How does the sinus disease secondarily affect the optic nerve? From what has been said it is evident that this may be by direct extension of the inflammatory process owing to a developmental or pathological defect in the bony wall and, as a matter of fact, the supero-external boundary is the part most likely to be affected by disease which may lead to destruction of the bone. In the case of the man with optic neuritis, nystagmus, and vertigo there was a fairly large gap in this part through which pus could be seen entering the sinus, an extra-dural abscess, in fact, in the region of the cavernous sinus and optic nerve. As a rule, however, I imagine the connexion between the changes in the nerve and the sinus disease is indirect. In many of the skulls I examined there were quite definite small openings leading from the sinus to the internal aspect of the base of the skull. These were specially seen in the external wall, but certain in the roof were fairly constant. The external layer of the dura mater is connected through these small foramina by thin fibrous bands with the under layer of muco-periosteum lining the sinus. In this way a cellulitis or an external pachymeningitis is set up by direct extension, and we get a sequence of events similar to that described by Gradenigo with reference to the involvement of the abducens nerve in the canal of Dorello secondary to middle-ear suppuration, the infection passing to the cellular tissue in the carotid canal and thence to the nerve. Similarly, the cellulitis or external pachymeningitis extends to the optic foramen, where the nerve gets a close enveloping sheath from the dura mater. In this connexion it is interesting to note that whereas it is rare (I only found it in 4 out of 230 skulls) to get one sinus so extensive as to come into direct relation with both the optic foramina, it is not so unusual (24 in 230) to get one sinus extending behind the other completely to the opposite side and coming into relation with both carotid tracts. This may be, and I have no doubt in some cases is, the explanation of changes in both optic discs with one-sided sinusitis, though another possible route of infection is through the roof to the optic commissure and tracts. In my experience, however, disease in the roof of the sinus is much less common than in the external wall. In rare instances the posterior ethmoidal cell of one side has been found extending backwards above both sphenoidal sinuses to the opposite side.

In conclusion, I would urge that in all cases of protracted post-nasal discharge, and especially in those cases where there is a condition of non-fœtid atrophy involving chiefly the posterior part of the turbinals, the possibility of chronic disease of the posterior group of accessory air spaces being the *fons et origo mali* should be more clearly recognised. The diagnosis is not easy and in some cases can only be definitely made after removal of the middle turbinate, a proceeding which one hesitates to carry out when the indications are not clear. Considering, however, the deleterious effects of a chronic post-nasal discharge, locally and on the general health, the bolder course will, I am convinced, more often be the wiser, and there should be no hesitation when an examination of the eyes reveals definite changes in the optic discs. Of late years attention has been drawn to the association of ocular and orbital inflammatory conditions with various nasal diseases so that it is hardly necessary to emphasise the necessity for an examination of the nose with special reference to posterior accessory sinus disease in cases showing vascular changes in the optic nerves.

Glasgow.

MALIGNANT AND NON-MALIGNANT TUMOURS OF BILATERAL ORIGIN.[1]

BY W. ROGER WILLIAMS, F.R.C.S. ENG.

UNTIL, in a recent publication,[2] I specially called attention to this subject by making a synthesis of many examples, which was the first of its kind, very little was heard among pathologists as to the bilateral origin of tumours. Yet no theory of neoplasia which fails to take into account this peculiarity can be regarded as really satisfactory. The well-established fact of the bilateral origin of tumours, although only an occasional occurrence, certainly indicates that tumour disease is something more than the manifestation of a solitary local aberration.

There can, I think, be no doubt that the activities of the local cells are largely conditioned by the totality of the forces which determine the integration of the whole organism, and the bilateral origin of tumours specially points to perturbation of these latter forces. In many anomalies *per excessum*, but specially in digital redundancy, when two or all four extremities may be simultaneously affected, we have an analogous condition; and underlying developmental disturbance of this general kind is probably the determining factor of most cases of bilateral tumour formation.

The chondromas furnish a good example of this. Thus, multiple cases are often met with in which the distribution of the tumours is bilateral, and, in exceptional instances, there may even be some approach to symmetry. In this type of disease it is by no means uncommon to find both hands affected with multiple tumours, and, in rarer cases, both hands and feet may be thus affected; while, quite exceptionally, most of the bones of the upper and lower limbs may be concurrently invaded with similar tumours, of which remarkable examples have been reported by Steudel,[3] Kast, and others. The concomitancy of angiomatous growths with tumours of this kind is a significant item pointing in the same direction.

It accords with the foregoing that most bilateral tumours originate in early life, many of them being obviously the outcome of gross developmental lesions of ante-natal origin. But, besides these ante-natal causative factors, it appears that certain acquired morbid conditions, such as chronic eczema, seborrhœa, and other hyperplastic lesions, sometimes determine bilateral neoplasia.

Among the numerous instances of the multiple outbreak of malignant growths lately reported, some of the most striking are those in which the malady arises concurrently in both of paired organs, or in both of other bilaterally symmetrical parts of the body. These bilateral tumours are often described as symmetrical, but it is seldom that they correspond so exactly as to justify the use of this term.

It is of interest to note that non-malignant tumours of bilateral origin are even less exceptional than their malignant congeners; thus, papillomas, angiomas, moles, fibromas, odontomas, myomas, adenomas, chondromas, osteomas, dermoid, sebaceous and other cysts—all present bilateral manifestations, and not so very rarely. An instance of generalised nævi, in which the distribution of the lesions seemed to indicate metameric symmetry, has been described by Hallopeau and Weil,[4] and several cases of "fissural" angioma are on record. Hutton and others have reported examples of bilaterally generalised angioma, and hereditary instances of this kind have been studied by Parkes Weber,[5] Osler, and others.

Among the fibromas, striking examples of bilaterality are met with in the disease called "multiple fibroma of nerves," in which over two thousand tumours have been counted in a single patient; and, in exceptional cases, the grouping of the tumours may be symmetrical. Although this disease is usually met with in adults, many early-life cases have been recorded, in some of which the tumours were of ante-natal origin. Probably the germs of this disease always are congenital, the tumours arising in defectively developed areas of the endoneurium. In this connexion it is worth noting that in a considerable proportion of cases, one or more of the numerous tumours eventually take on sarcomatous change. Moreover, various other developmental defects may be met with, in those who are subject to this disease, which affects horses, oxen, and other cattle, as well as mankind.

In the condition commonly called "diffuse lipoma" we meet with multiple, bilateral, and symmetrical tumours, but these formations can hardly be regarded as true tumours—they are rather the outcome of a tropho-neurotic process. The supra-clavicular fatty masses,[6] which are usually bilateral, belong to the same category; and here also "lipoma arborescens" may be included. To indicate this distinction it is best to speak of these overgrowths as examples of diffuse "pseudo-lipomatosis."

Among the true lipomas bilateral forms are met with which are occasionally symmetrical, but such occurrences are decidedly rare. Spencer Wells[7] successfully removed a fatty tumour, weighing 16½ pounds, from one perirenal region; and a similar tumour, weighing 14½ pounds, from the corresponding region on the opposite side. Doran[8] found bilateral retroperitoneal lipoma of the posterior abdominal wall; Senn[9] and others lipoma of each axilla. Examples of bilateral lipoma of the tendon sheaths of the feet are also on record. Of lipomas in hernial positions, J. Hutchinson, jun., and others have reported bilateral examples.

Among the many other instances of bilateral lipoma reference may be made to some striking cases by A. Prichard,[10] in which the limbs—chiefly the upper ones—were the seat of symmetrical tumours. Cruveilhier had previously described a similar case.

The most remarkable example of this kind known to me was reported some years ago by Broca.[11] His patient was a man, aged 70 years, who when he was only 25 years old first noticed a small fatty tumour at the upper and outer part of his right hip. In the course of six years it gradually attained a large size. It was then extirpated and found to be an ordinary fatty tumour. At this time the patient had no other tumour. The wound healed, and there was no sign of any return of the disease. However, at the end of five months an eruption of hundreds of small fatty tumours gradually took place all over his body. Most of these remained quite small. Fresh tumours continued to form in this way for a period of over 40 years. During this time his general health remained good; the operation scar continued sound and free from any sign of recurrence. Such was his condition when, at the age of 70, he came under Broca's care for increasing dysphagia of some months' duration. The whole surface of his body was then studded with immense numbers of these small fatty tumours; the head and neck comprised 480, the trunk 965, the upper limbs 370, and the lower limbs 265. Altogether 2080 tumours were counted, and there were many very minute ones besides. These tumours varied in size from that of a pea to a walnut, but several were much larger. Their microscopical and macroscopical features were those of ordinary fibro-lipoma. The patient died from starvation, caused by the progressive dysphagia, some weeks later.

---

[1] A paper read before the Bristol Medico-Chirurgical Society on Jan. 12th, 1910.

[2] The Natural History of Cancer, 1908, p. 298.

[3] Bruns' Beiträge zur klinischen Chirurgie, Band viii., S. 503.

[4] Annales de Dermatologie, tome viii., p. 483.

[5] THE LANCET, July 20th, 1907, p. 160.

[6] For further information on this subject reference may be made to the writer's publication on Diffuse Pseudo-lipoma (Transactions of the Pathological Society, vol. xli., p. 289).

[7] Brit. Med. Jour., 1889, vol. i., p. 757.

[8] Transactions of the Obstetrical Society, 1902, p. 265.

[9] Pathology and Surgery of Tumours, 1900, p. 406.

[10] Brit. Med. Jour., 1881, vol. i., p. 271.

[11] Traité des Tumeurs, tome i., p. 304.

At the necropsy the body was found to be extremely emaciated, not a trace of fat being found in the usual situations. The gullet and pylorus were surrounded by large fatty growths, which had occluded the lumen of these organs, and so caused the fatal dysphagia. There were several small fatty growths in the valves of the heart, several large ones deep in the neck, one within the sheath of the carotid vessels, and another within the sheath of the right sterno-mastoid muscle; these tumours, like the others, were fibro-fatty in structure. There were no other noteworthy lesions, except tuberculous deposits at the apex of each lung.

It is, however, among the osseous tumours that bilateral and symmetrical manifestations are most frequently encountered; and this in many vertebrates, even as low in the scale as fishes, as well as in mankind. Multiple epiphyseal exostoses are commonly bilateral and symmetrical. In a remarkable case by J. Leidy[12] there were 126 of these symmetrically placed tumours, many of which were of great size. This type is often hereditary; thus Reclus[13] knew of a man and his three sons who were all similarly affected, as well as his sister, her daughter, four children of the latter, and seven of her grandchildren. Many cases of this kind originate in early life, and the germs of the tumours seem to be derived from developmental irregularity along the adjacent epiphyseal lines.

The exostoses of muscular attachments are also often bilateral and more or less symmetrical. It is just the same with the exostoses of the external auditory meatus, which are usually bilateral according to the observations of W. Turner,[14] Field, Welcker, and others. Even orbital exostoses are exceptionally bilateral; and to the many instances of this kind which arise in connexion with the jaws, I shall subsequently have occasion to refer.

A rare form of bilateral exostosis is that met with on each side of the pelvis, in the vicinity of the line of junction of the constituent parts of each innominate bone. Cartilaginous "rests" in the synovial fringes of joints, such as the knee, occasionally originate chondromatous or osseous tumours, which may by detachment become free in the joint; such formations are often bilateral. The osteophytes that so frequently occur within the skull of pregnant women are commonly bilateral. Even the subungual exostosis of the great toe is occasionally bilateral, as in a case by Poncet, to which I have elsewhere referred.[15] That curious malady called "myositis ossificans," which has some kinship with the exostoses, is nearly always bilateral.

I have hitherto referred chiefly to non-malignant forms of tumour disease; I now propose to submit a few remarks as to the leading features of some of the chief local varieties of these bilateral outbreaks, dealing chiefly with malignant manifestations.

Mamma.—In malignant disease of the breast we can seldom be quite sure of the bilateral origin of the affection, unless the malady begins at about the same time in each organ. Owing to this disability, only about a score of really convincing cases of bilateral malignant disease of the female breast have been recorded, but no doubt the condition is not so exceptional as this paucity of authenticated examples seems to imply. Of 1664 cases of mammary cancer tabulated by Gross, only 2 were bilateral in this restricted sense; but Billroth met with 3 instances of the kind in 245 mammary cases.

I have elsewhere[16] described an example of bilateral epithelial cancer of the female breast, and referred to similar cases by Aitken, Volkmann, Klotz, and others. In most of these the malady was concomitant with the puerperal state, its onset was acute, and its progress very rapid. Billroth[17] has met acute bilateral sarcoma of the breast in a pregnant woman. This type of malignant disease seems to be relatively less rare than the epithelial form, for of Gross's 156 mammary sarcomas 3 were bilateral.

Hansy[18] has described an instance of the bilateral origin of cancer of the male breast.

It is by no means rare to see cancer of one breast followed after a time by outbreak of the disease in the other. Most of these cases are, however, due to direct extension of the primary disease or to its dissemination. Yet it occasionally springs up independently in the opposite breast, of which I have elsewhere[19] described an instance. I have also there cited some remarkable cases in which, many years after extirpation of one breast for cancer without recurrence, the disease subsequently supervened in the opposite breast.

Other instances of bilateral malignant disease of this part in which the concomitant tumours were of different anatomical structure may also be included in this category—e.g., Lebert (colloid cancer of one breast with ordinary scirrhus of the other), Nunn, Mandry, and Küster (tubular cancer of one breast with acinous cancer of the other), De Morgan, Czerny, Bryant, and Billroth (scirrhus of one breast, with sarcoma of the other). Mammary adenomas may also be bilateral, for of 46 cases recorded by me in one instance there were several small tumours in each breast, and of Velpeau's 54 cases 5 were bilateral.

Uterus.—Uterine myomas are commonly multiple and bilateral, and in some instances there is decided tendency to symmetry. In cases of uterine duplicity both of the uterine organs have contained myomas.

Many examples of bilateral myoma of the broad ligament have been reported, in some of which the tumours were symmetrically placed (Uerow, A. J. Smith, Abbot, Duncan, Jordan, Vierott, &c.). Bilaterally symmetrical lipoma of the broad ligaments has been described by Dr. E. Emrys-Roberts;[20] while Doran and others have reported bilateral papilliferous cystoma of the same part. Winckel has met with myoma of both round ligaments.

Papilloma of both Fallopian tubes has been studied by Doran and Godart; and bilateral cancer by Westermark, Kaltenbach, Cullingworth, Zweifel, Rollin, and others. Sänger has seen bilateral sarcoma of the tubes.

Ovary.—Malignant tumours of the ovaries are often of bilateral origin; this is especially so with sarcomatous kinds, a large proportion of which occur in early life; thus, of 39 cases by Zangemeister,[21] 10 were bilateral; and of 23 by Pick, 9 were bilateral, of which latter 6 were of the small round-celled variety.

Examples of bilateral ovarian cancer have been studied by Woolley,[22] Nicholls,[23] and others. Rocher[24] has met with bilateral ovarian dermoids, each of which had originated cancer. Here also mention may be made of Ladinski's[25] remarkable case of glandular cancer of one ovary with sarcoma of the other, in a patient with absence of uterus, vagina, and tubes.

With regard to the initial multiplicity of non-malignant ovarian tumours I need only mention that it is of frequent occurrence, especially in the dermoid, papillary, and cystic forms. Thus, of 117 ovarian dermoids tabulated by Pauly,[26] 20 were bilateral, and of Lebert's 22 dentiferous ovarian dermoids three were bilateral. A case of bilateral ovarian dermoids in two sisters has been reported by F. Hué. Of 15 ovarian myomas by H. Briggs[27] and by Löhlein three were double-sided. Dermoid of one ovary and cyst-adenoma of the other is by no means rare.

Testis.—Malignant tumours of the testis are not infrequently bilateral in origin; and this seems to happen oftener with round-celled sarcomas than with other forms of the disease. A considerable proportion of these malignant tumours arise in infancy and early life, many of them being congenital. In a remarkable case of this kind by Rogers both testes, which had not descended, were sarcomatous, causing a large intra-abdominal tumour, which proved a serious obstacle to delivery. Even more striking are two instances cited by Kronpecher of sarcoma of both testes in double cryptorchids.

---

[12] University Medical Magazine (U.S.), 1889, June.

[13] Le Progrès Médical, 1885, No. 31.

[14] Journal of Anatomy, &c., vol. xiii., p. 200.

[15] Bristol Medico-Chirurgical Journal, March, 1904, p. 17.

[16] My book on "Diseases of the Breast," 1894, p. 318.

[17] Deutsche Chirurgie, Lief. xli., S. 27.

[18] Wiener Medicinische Wochenschrift, Feb. 11th, 1899.

[19] Diseases of the Breast, 1894, p. 302.

[20] THE LANCET, July 17th, 1909, p. 186.

[21] Beiträge zur klinischen Chirurgie, Band xvi., Heft 2.

[22] Boston Medical and Surgical Journal, 1903, No. 1, p. 1.

[23] Montreal Medical Journal, 1903, p. 326.

[24] Correspondenzblatt für schweizer Aerzte, 1877.

[25] American Journal of Obstetrics, &c., July, 1898.

[26] Gazette Hebdomadaire de Médecine, Paris, 1875, p. 485.

[27] Brit. Med. Jour., 1897, vol. i., p. 1083.

Malignant testicular tumours, especially those of early life, are notable for the great frequency with which heterotopic structures, such as cartilage, bone, striped muscle, &c., occur in them. Of 15 early-life testicular malignant tumours by Schubert, three were bilateral; and of 93 cases, mostly adults, by Kober, five were bilateral.

Although over 30 examples of teratoid and dermoid tumours of the testis are known to me, not a single one of them is bilateral. What is the cause of the great difference in this respect between these testicular formations and their ovarian congeners?

Kidney.—Malignant tumours of the kidney are decidedly rare, except in infancy and early life, when many cases are met with, a considerable proportion of which are congenital and bilateral in origin. Thus, of 607 malignant renal tumours by Küster,[28] 13 were of bilateral origin. It was by studying a case of bilateral rhabdomyosarcoma of the kidneys of an infant, that the "rest" theory of tumour formation was suggested to Cohnheim.

According to Paul[29] about half of the early-life renal sarcomas are bilateral, but Walker,[30] from an analysis of 141 cases, finds this proportion of bilaterality much too high, only 10 of his cases being double-sided. Jacobi noted bilaterality in 8 of 41 cases of this kind, and Albarran 3 in 80 cases. Bilateral origin is, however, of more frequent occurrence in early-life sarcoma than in any of the renal tumours of later life, although double-sided forms of the disease are met with even then.

In a man, aged 77 years, Sabrazès and Hasnot[31] found sarcoma of both kidneys, with sarcoma of both adrenals. This man had symmetrical lesions on the back of each hand, which seem to me indicative of acanthosis nigricans. In an epileptic male idiot, aged 44 years, Schercu[32] met with sarcomatous "mixed" tumour of each kidney, associated with cylinder-celled cancer of the stomach and multiple psammo-sarcoma of the brain. A case of bilateral renal carcinoma has been studied by Hausmann; and similar disease in a cat by Auger and Roquet.

Parkes Weber[33] met with double-sided papillary adenoma of the kidneys. Polycystic disease of the kidneys is usually bilateral, congenital, and several members of a family may be affected; moreover, other organs, such as the liver and spleen, are apt to be involved, and those affected fairly often present various other developmental anomalies. This type of disease has been met with in several of our domestic animals—e.g., horses, asses, oxen, and sheep. In a case by Mears, polycystic disease of both kidneys was concomitant with similar disease of both ovaries and of the uterus.

Here mention may be made of a remarkable case of villous papilloma of the pelvis of each kidney, in which there were also similar tumours in the bladder, at the orifice of each ureter, as recorded by Murchison[34]; and Coats has figured an example of the same disease of the bladder, in which the growths were grouped around the orifice of each ureter.[35]

Adrenal.—Bilateral forms of adrenal disease, in infants and adults, are not very rare: thus of 48 cases by Hartmann and Lecène,[36] 7 were double-sided, and of 26 cases by Rolleston and Marks 2 were bilateral. Carrière and Deléarde have found symmetrical epithelioma of this part, and instances of bilateral sarcoma have been recorded by Breton and Looten, Fränkel, Woolley, and others.

Double-sided adenoma has been studied by F. P. Weber,[37] Warthin, &c. Chauffard met with adenoma of both adrenals and the pancreas in a cachectic woman, with multiple fibromas of the nerves and pigmentary lesions.

Eye.—Choroidal sarcomas are occasionally bilateral, as in 5 of 214 cases studied by Fuchs.

With glioma of the retina bilaterality is of much more frequent occurrence—indeed, congenital glioma is usually double-sided. The disease is often hereditary; thus, in a case by Newton,[38] 10 of a family of 16 had died from it, the disease being bilateral in 7 of them. Of 60 cases by Lawford and Collins, in 12 the disease was bilateral in origin; of Hirschberg's 60 cases, 14 were double-sided; and of Wintersteiner's 405 cases, 97 were bilateral.

Bilaterally symmetrical hairy dermoids of the ocular conjunctiva have been described by Harman,[39] and examples of double-sided dermoids of the corneo-scleral region by Bergmeister and Wicherkiewicz.

Brault met with congenital double-sided ocular lipoma, and Emery with bilateral lymphangioma of conjunctiva and eyelids.

Face.—Instances of bilateral rodent cancer of the face have been recorded by J. Hutchinson,[40] Bowlby,[41] Ribbert, Volkmann, Furnivall, Schimmelbusch, myself, and others. In Furnivall's case[42] the lesions were symmetrical. Bilateral enlargement of the "sucking pads" of the cheeks occasionally occurs.

Jaws.—Margois[43] has seen double-sided sarcoma of the inferior maxilla in a man aged 50 years. C. Heath[44] has described a similar case in a boy 7½ years old. The tumours are preserved in the Hunterian Museum, where they are described in the catalogue as "Two myeloid tumours developed symmetrically in the angles of the lower jaw." From examination of the specimens Bland-Sutton believes the tumours are fibrous odontomas. The boy had suffered no recurrence when he was last seen some years after removal of the tumours.

In an infant, 3½ years old, Parkin[45] found myeloid sarcoma of the alveolar process of the right superior maxilla, with a similar tumour at the symphysis menti of the inferior maxilla.

Then there are instances of bilateral sarcoma of the parotid by Degen and Schridde.

Bilateral odontomas of the inferior maxilla have been reported by Cheever and by Riedl.

Baum found each antrum of Highmore occupied by an odontoma, and Astley Cooper long ago described osteoma of each antrum, which may have been odontomatous.

In a young woman Barling[46] had to deal with circumscribed fibroma embedded in the alveolar process of each superior maxilla, in which there was no obvious indication of the tumours having originated from tooth sacs.

Carless has described epithelial odontoma which invaded both superior maxillæ.

Symmetrical hyperostosis of the nasal process of each superior maxilla constitutes the affection called "goundrou," common among West African negroes, and tumours of this kind are occasionally seen in Europeans. Double-sided hyperostosis of the alveolar process of this bone has been figured and studied by Dreschfeld, Agnew, and Fürst. The latter's patient, a girl aged 6 years, also had hypertrichosis universalis. Hyperostosis sometimes involves the angle of each inferior maxilla, and in the condition called "leontiasis ossea" both superior and inferior maxillary bones may be affected in this way.

Ear.—Examples of the bilateral outbreak of epithelioma of the external ears have been recorded by Mandry[47] and Sumpter.[48] In these cases the cancer supervened on chronic eczema of the part.

Extremities.—Of 263 cases of primary cancer of the extremities analysed by Michäel,[49] 2 were bilateral; in 1 of these cases the cancer supervened on chronic ulcers. Volkmann has also reported bilateral epithelioma of the thighs, arising in the sites of old ulceration. The symmetrical development of rodent cancer in each groin, in the absence of any obvious antecedent lesion of the part, has been described by T. S. Pigg,[50] and Mr. C. A. Morton[51] has seen a malignant growth in each groin which arose in the local lymphatic glands. Massen,[52] in a newly born infant, found congenital myxo-sarcoma of each gluteal region, and Lockwood[53] has met with congenital lipoma of the sole of each foot.

---

[28] Deutsche Chirurgie, 1896-1902.

[29] Liverpool Medico-Chirurgical Journal, January, 1898.

[30] Annals of Surgery, 1898, vol. xxvi., p. 527.

[31] Archives de Médecine Expérimentale, 1907. No. 6. p. 767.

[32] Cited by Walker, Archiv für Klinische Chirurgie. 1896, Band liii.

[33] Transactions of the Pathological Society, 1898, vol. xlix., p. 176.

[34] Ibid., 1870, vol. xxi., p. 241.

[35] Pathology, p. 318, Fig. 152.

[36] Travaux de Chirurgie Anatomique et Clinique, 1904, tome ii., p. 15.

[37] Transactions of the Pathological Society, 1906, vol. lvii., p. 338.

[38] Australian Medical Gazette, 1902, May, p. 236.

[39] Transactions of the Ophthalmological Society, 1906, vol. xxvi., p. 35.

[40] Archives of Surgery, vol. iii., p. 335.

[41] Transactions of the Pathological Society, 1894, vol. xlv., p. 163.

[42] Ibid., 1898, vol. xlix., p. 299.

[43] Bulletin de la Société d'Anatomie, Paris, 1908, No. 1, p. 74.

[44] Diseases of the Jaws.

[45] Brit. Med. Jour., 1892, vol. i., p. 1074.

[46] Brit. Med. Jour., 1903, vol. ii., p. 1532.

[47] Beiträge zur klinischen Chirurgie. 1892, Band vii., S. 589.

[48] THE LANCET, 1893, vol. i., p. 887; ibid., 1894, pp. 1160 and 1274.

[49] Beiträge zur klinischen Chirurgie, Band vii., S. 13.

It is evident from the foregoing items, which by no means exhaust the list, that the bilateral outbreak of malignant and other tumours is less exceptional than is generally believed.

Walton-by-Clevedon.

A CASE OF SPONTANEOUS RUPTURE OF AN ORDINARY OVARIAN CYST.

By ROBERT JONES, M.D. LOND., F.R.C.P. LOND.,
RESIDENT PHYSICIAN AND SUPERINTENDENT, LONDON COUNTY ASYLUM, CLAYBURY, WOODFORD;
AND
W. McADAM ECCLES, M.S. LOND., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON (WITH CHARGE OF OUT-PATIENTS), ST. BARTHOLOMEW'S HOSPITAL.

THE patient, a woman, aged 34 years, 6 feet in height and weighing only 9 stones 13 pounds, by occupation a trained mental nurse, retired to bed in her usual health on the evening of Feb. 7th, 1909. She awoke as usual next morning at 6 A.M., but on turning over in bed preparatory to leaving it she experienced severe pain in the lower part of the abdomen on the left side. She dressed, however, and walked some hundred yards to commence her rounds in the wards of the institution. Meeting another nurse she complained that she felt very ill; she drank a cup of tea and then went out into the open air. She felt better after a short rest, but the pain returned with increased violence, obliging her to walk back to her bedroom. Here she tried to undress and get into bed, but was eventually found at about 8 A.M. lying prone and prostrate on the floor. She was undressed, put to bed, and a hot fomentation applied to the abdomen. This secured relief for the time, but two hours later the pain had returned in all its severity. Seeing that she expected her catamenia in a few days, and always had some pre-menstrual pain, although she was regular, this attack was at first taken to be an aggravated dysmenorrhœa. She slept at times throughout the day, but had recurrences of spasmodic pain. During the exacerbations she felt faint and her pulse became frequent and feeble. Later in the day she vomited after taking liquid nourishment, the vomit being the contents of the stomach only without bile. She continued in a pinched and somewhat collapsed state, and had several attacks of acute pain in the lower part of the abdomen.

At 9 P.M. the patient was seen in consultation by Dr. Robert Jones, Dr. C. T. Ewart, and Dr. G. H. Harper-Smith, and the conclusion was come to that the case presented evidence of a condition more serious than that of an uncomplicated dysmenorrhœa. There were by this time marked collapse and abdominal facies, the respirations were shallow and almost entirely thoracic, the pulse was quick, weak, and compressible, and the temperature was subnormal. Pain was complained of over nearly the whole of the abdomen, but chiefly in the lower half, but there was no especial tenderness. Apparently the liver dulness was diminished. There was no swelling in the right iliac fossa. She had never been under treatment for dyspepsia, although she was thin and somewhat poorly nourished. She had not previously complained of pain in the abdomen. There had not been constipation, diarrhœa, melæna, vomiting, or jaundice. The case therefore was obscure, but apparently one of perforation, or diffuse septic peritonitis from appendicitis. In either conclusion the issue was grave and the treatment surgical, decisive, and urgent. Mr. McAdam Eccles was telephoned for and asked to come prepared for immediate laparotomy. He arrived soon after 11 P.M., and after examination agreed as to the urgency of the symptoms, considering that perforation of the stomach by an ulcer was the most likely cause of the condition, though alluding to the possibility of appendicitis or "a ruptured ovarian cyst."

At midnight, just 18 hours after the first onset of the symptoms, Dr. F. Paine administered ether, and Mr. Eccles opened the abdomen in the middle line above the umbilicus. When the peritoneal cavity was reached no free gas escaped, and only a little glairy fluid found its way out. This fluid was quite unlike that obtained from the peritoneum in cases of ruptured stomach or acute septic peritonitis. An enlargement of the wound and further exploration with the fingers revealed no evidence of gastric disease, but occasioned a larger quantity of similar fluid to escape, coming up definitely from below. This seemed to point fairly conclusively to the rupture of an ovarian cystoma of the ordinary type. Consequently the first incision was protected with gauze and another made in the middle line close above the symphysis pubis. From this a still larger amount of typical ovarian fluid poured out, and then the hand was introduced; a collapsed ovarian cyst springing from the left ovary was made out. This was quickly delivered through the wound and its pedicle ligatured with silk. Examination of the opposite ovary showed an early cystic adenoma, and it was deemed advisable to remove this as well. The extravasated ovarian fluid was rapidly sponged out of the pelvis and flanks, though a considerable quantity must have remained in the peritoneal cavity. Both wounds were completely closed by layers of sutures, no drainage being employed. Strychnine and brandy were injected subcutaneously during the operation on account of the extreme collapse. Two pints of normal saline solution with an ounce of brandy were passed into the rectum at the termination of the operation, which had lasted over an hour.

No sleep was obtained on the night of the operation; nourishment was given every hour and retained. On the second night, to secure rest, a hypodermic injection of morphia was administered. The second and third days were marked by troublesome hiccough. The temperature never rose above 99·8° F. The after-treatment was most assiduously carried out by Dr. Harper-Smith, and the patient made an uninterrupted and complete recovery, returning to her professional duties within six weeks, and has remained well.

These cases of spontaneous rupture of ordinary ovarian cysts are not common, and for the rupture to occur without previous knowledge of the existence of the cystoma and from such a slight cause as merely turning in bed distinctly rare. A study of this and similar cases cannot but be a matter of interest and instruction.

The parietal peritoneum is profusely supplied with nerve terminations, connected centrally with sympathetic plexuses and trunks. Any sudden stimulation of these peripheral connexions tends to produce profound shock and to place life in imminent danger. Perforation of any part of the alimentary tract sets free material which is intensely irritating to these nervous endings. If such fluid—as in the case of pus from the appendix—is septic in its nature the irritation may be so marked that severe collapse ensues. The extravasation of normal urine by intra-peritoneal rupture of the bladder is also followed by great peritoneal irritation, but not as a rule so considerable as that resulting from alimentary perforation. Rupture of the gall-bladder, especially when that viscus contains septic bile, is followed by pronounced peritonism. Similar symptoms may be produced by the tension of the pedicles of organs or tumours, or by the rupture of an extra-uterine fœtation. Rupture of a parovarian cyst is not uncommon, but the bland nature of the fluid cast into the peritoneal cavity does not cause much irritation; in fact, the sudden disappearance of such a tumour without symptoms is well known.

Spontaneous rupture of the ordinary multilocular ovarian cystoma is rare on account of the walls of the cysts being, as a rule, of some considerable thickness. Occasionally when the cyst is a large one and occupies a large part of the lower abdomen external violence may burst it and cause extravasation of its contents into the peritoneal cavity. Rupture other than traumatic may occur from simple distension causing great thinning of the cyst wall, by degeneration or necrosis of the cyst wall, or from interference with blood-supply by torsion or otherwise, causing gangrene of the cyst wall or enormous distension by extravasated blood.

The contents of an ovarian cystic adenoma differ considerably from those of a parovarian tumour, and its effect upon the peritoneum is correspondingly different. Even the spontaneous rupture of an ordinary cyst gives rise to a disturbance which is marked. The patient usually experiences sudden agonising pain, the pulse becomes weak and rapid, the face pallid, with often a cold sweat upon it, and the temperature falls. There is often very free diuresis. If the abdomen is examined it will be found to be flattened rather than prominent, with sometimes a bulging in one or other flanks. The respiratory movements of the abdominal wall are lost, and there is a marked rigidity of the abdominal muscles on palpation. Dulness with the possibility of fluctuation will be discovered in the lower abdomen, and also generally in one or both lumbar regions.

---

[50] Transactions of the Pathological Society, vol. xlix., 1898, p. 300.
[51] Transactions of the Pathological Society, 1896.
[52] Annales de Gynécologie, 1894, September, p. 218.
[53] Transactions of the Pathological Society, 1886, vol. xxxvii., p. 450.

Per vaginam and per rectum, as a rule, the presence of a pelvic tumour more or less flaccid indicates the condition of a partial or complete rupture of an ovarian cyst. The patient is obviously very ill, and unless surgical aid is promptly obtained will almost inevitably succumb.

Another point of great importance is the possibility of the diffusion of the contents of the cyst into the peritoneal cavity, inducing a widespread infection of the serous membrane with a malignant neoplasm. It is a well-known fact that many ovarian cystomata which appear macroscopically to be of an innocent character are really malignant, either sarcomatous or carcinomatous. There are many instances on record where spontaneous or other rupture of ovarian cysts has been followed by widespread secondary malignant infection which has caused the death of the patient. In one case this was so rapid that the patient succumbed within a month of the ovariotomy, during which some of the secondary cysts had been tapped.

With diagnosis at an early stage and prompt removal of ovarian tumours, the unfortunate accident of rupture will be increasingly uncommon.

Bibliography.—The following are the more important papers bearing on the subject:—W. H. Battle: Medical Press and Circular, 1905, vol. i., p. 221. H. Briggs: Brit. Med. Jour., 1909, vol. i., p. 1474. Camus: Revue Médicale Française et Etrangère, 1884, vol. iii., p. 313. Andrew Clark: THE LANCET, 1903, vol. i., p. 1370. K. Das: Ruptures et Perforations des Kystes de l'Ovaire, Nancy, 1893. F. W. N. Haultain: Transactions of the Edinburgh Obstetrical Society, 1900, vol. xxvi., p. 65. F. J. McCann: West London Medical Journal, 1903, vol. viii., p. 285. J. Morrison: St. Bartholomew's Hospital Journal, 1903–04, p. 91. C. J. Morton: Practitioner, 1904, vol. lxxiii., p. 654. Nepwen: Annales de Gynécologie, 1875, vol. iv., p. 60. Palm: Ueber Spontanen Rupturen von Ovarien Cysten, Tübingen, 1868. Spiegelberg: Archiv für Gynäkologie, 1870, p. 60. Storer: Boston Medical and Surgical Journal, 1896, vol. cxxxv., p. 518. F. E. Taylor: Practitioner, 1904, vol. lxxii., p. 735. Waite: Contribution à l'Étude de la Rupture des Kystes de l'Ovaire, Paris, 1883.

THE MENOPAUSE, NATURAL AND ARTIFICIAL.[1]

BY ARTHUR E. GILES, M.D., B.SC. LOND., M.B. VICT., F.R.C.S. EDIN.,

SURGEON TO THE CHELSEA HOSPITAL FOR WOMEN; GYNÆCOLOGIST TO THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.

THE menopause means literally "the cessation of menstruation." There comes a time in the life of a woman when she menstruates for the last time, and for the purpose of statistics this is regarded as the date of the menopause in her case. In reality, the menopause is not an event that can be dated; it is properly a transitional period which usually occupies about a year, more or less. In some cases the period is summed up within a few months, in others it is spread over a few years. The menopause is strikingly described in the popular phrase, "the change of life." Its character as a period rather than an event is expressed in the term "critical period" ("*l'âge critique*" of the French writers); but this term is unfortunate, inasmuch as it conveys an exaggerated idea of the danger to which a woman is exposed when she is passing from the troubled waters of reproductive activity into the still haven of unproductive rest. Another term in use is "climacteric," derived from the Greek term meaning the round of a ladder; as a matter of fact the Greek physiologists admitted five climacterics, the first beginning with the seventh year, the second with the twenty-first or three times seven, the third with the forty-ninth or seven times seven, the fourth with the sixty-third or nine times seven, and the fifth with the eighty-first or nine times nine; the third climacteric is the one specially referred to in relation to women; but it is obvious that the division of the ordinary term of life into climacterics is purely artificial.

At the epoch of puberty the onset of menstruation in a normal girl is held to be identical with the first appearance of the menstrual flow, but in cases of atresia the ovarian and uterine changes involved in menstruation may proceed for some months without any outward sign. At the menopause also appearances may be deceptive, for, whereas in the case of a healthy woman the cessation of menstruation may be held to mark the menopause, there are exceptions when dealing with diseased conditions. Thus, certain tumours may cause hæmorrhage after the cessation of the true menstruation and, on the other hand, a woman who has had the uterus removed ceases to have a flow, even though the ovaries (the dominant organs) remain active, and in such a case the menopause, as indicated by constitutional symptoms, may come on several years after the removal of the uterus and its resulting cessation of hæmorrhage.

The Normal Menopause.

The normal menopause is due to the gradual cessation of ovarian activity. It has become known in recent years that the ovaries carry out a dual function: in the first place, they govern the uterine changes that result in menstruation; and, in the second place, they exert a definite influence on the nervous and vaso-motor system. Consequently the diminution of ovarian activity has a dual effect: in the first place, the process of menstruation becomes erratic and irregular and finally ceases; and, in the second place, the woman manifests constitutional symptoms in the form of nervous disturbances and want of vaso-motor coördination.

We need not dwell long on the first of these effects; suffice it to say that menstruation usually becomes rather scanty, and one or two periods may be missed. Occasionally an isolated period may be marked by an unusually free loss of blood, and this is sometimes the last of the periods.

As regards the constitutional effects of ovarian involution, the nervous symptoms most frequently met with are irritability and mental depression. By general consent some allowance is made for women who become irritable or act in an erratic manner as they approach the age of the menopause; and a special effort is made to provide diversion and cheerful associations for those who become low-spirited. So well is this known that some women are apt to trade on the indulgence that they expect and to become capricious and domineering. In normal cases these symptoms never amount to much, and many women retain an unimpaired cheerfulness and sweetness of disposition; they do not take the world into their confidence and proclaim their age by their altered disposition. Marked psychical changes are seen in women of unstable mental balance, in those who have not been in the habit of exercising self-control, and in those who have a predisposition to insanity; but these cases are happily in the minority.

Vaso-motor incoördination shows itself in spontaneous flushings and heat-waves. These vary both in frequency and in intensity; some women have two or three in a day, others may have them twenty times a day; sometimes they are slight and transient, causing no more than a passing inconvenience, whilst in other cases an intense flushing gives rise not only to discomfort but also to a sense of shame and self-consciousness. These flushes often vary with the menstruation; when a period is missed flushes come on; and if menstruation returns for a few months the flushes may remain in abeyance during that time, coming on again the next time that a period is missed. When menstruation ceases finally most women are subject to flushings several times a day for several months, and sometimes for as long as two or three years.

The sexual disposition after the menopause varies considerably in different individuals; in many it is just as well developed as in the earlier years; in others, again, there is a gradual diminution of desire and responsiveness. It seems evident that although the presence of normal ovaries is necessary to the development of sex instincts, these instincts may remain in the fully-developed woman when the ovaries either cease to be functional with the lapse of time or are removed on account of disease. I shall have to return to this point when speaking of the artificial menopause.

The features of the normal menopause are so well known that it is not necessary to dwell on them here at any length, but two or three points may be mentioned with advantage, especially with the object of correcting some misapprehensions which are apparently still extant, not only among the lay public, but also in the medical profession.

---

[1] A paper founded on a lecture delivered at the Medical Graduates' College and Polyclinic, Chenies-street, on Nov. 3rd, 1909.

The first is that *a recurring increase of the menstrual flow is not a normal sign of the menopause.* Irregularity and scantiness are characteristic; but increase of hæmorrhage, particularly if repeated, always means organic disease.

The second point is that the menopause is often considered, particularly by the public, to be necessarily a time of danger. This is not so; the menopause in itself never leads to disease. It is true that at the age of the menopause there is a predisposition to certain diseases, just as there is a predisposition to other conditions at other ages, but *the menopause itself is not a cause of disease of any kind.*

The menopause is also credited with disastrous influences in predisposing to lunacy, and it should be said that in the absence of any tendency to mental instability in the family or individual there is no danger whatever of lunacy supervening; if such a tendency be present in any marked degree the functional disturbances connected with the menopause may be just sufficient to turn the scale in exactly the same way as any other influences may—for example, sudden shock, privation, worry, and bodily ill-health; but the menopause presents no danger of insanity in the case of an ordinary sane person.

Just as the dangers of the menopause are sometimes overestimated, so also is its value as a curative agent; this remark applies especially to fibroids, for patients are still told when they have fibroids that they have only to wait for the menopause and all will be well. It has now been shown by many writers that the menopause is a fallacious hope with fibroids, since many patients, instead of improving, get worse, and very often during the years they spent in waiting for the menopause the patient's health is seriously or even permanently crippled by profuse hæmorrhage.

The Artificial Menopause.

The artificial menopause is one that is brought on prematurely by the performance of an operation for the removal of the organs concerned in menstruation. The menopause may be premature without being artificial; reproductive activity becomes exhausted early and menstruation ceases 10 or even 20 years before the usual time. The youngest age for the menopause that I have known of is 25; it was evidently a case of under-development, as the patient did not begin menstruating until after she was 20. In the absence of under-development it is rare for the menopause to come on before the age of 30 to 35; the causal factor may be a profound mental or physical shock, rapid child-bearing or prolonged lactation causing superinvolution of the uterus after childbirth. I recently saw a patient, aged 30, who had a child when she was 25 years of age and had not menstruated since. This was apparently a case of superinvolution. The pelvic organs resembled in their atrophy those of a woman of 60.

The artificial menopause may be apparent or real. When the uterus is removed and the ovaries are preserved menstruation ceases; but this is not a true menopause, for the ovaries may remain active and the patient does not undergo the mental and physical phenomena of the climacteric until some years later. As a matter of fact, if a small portion of the body of the uterus is left, as may happen in a high supravaginal amputation, menstruation may continue regularly, with no other difference than a diminution in quantity. I find in my records of the after-results of hysterectomies, when one or both ovaries were preserved, that of 94 cases where data are available seven continued to menstruate after the operation. The particulars are as follows:—

No. 45 H. Age at operation 46; menstruation continued regular for 3¾ years.

No. 102 H. Age 33; for 6½ years after operation there was a show once a month; the cervical canal measured 1½ inches.

No. 618 H. Age 44; for a year after operation up to date of report a coloured discharge once a month, lasting 1–2 days; cervical canal 1½ inches.

No. 743 H. Age 33; for 1¼ years from operation to date of report menstruation was regular, lasting 4 days, and requiring 6 diapers; cervical canal 1½ inches.

No. 926 H. Age 38; for 1½ years to date of report there was a brown discharge once a month; cervical canal 1½ inches.

No. 19 K. Age 30; menstruation continued regular but scanty for 3 years and 10 months.

No. 944 L. Age 37; for a year to date of report there was a show every 6 weeks; cervical canal 1¼ inches.

Another patient (No. 54 L), who was 35 at the time of the operation, wrote six and a half years later: "Ever since the operation I have had, not regularly every month, but every now and then, all the feelings of impending menstruation, such as swollen and irritable breasts, &c." But in this case, as in the remaining 86, there was no monthly hæmorrhage.

One symptom is nearly always present when the menopause comes on—namely, flushes and waves of heat. In cases of apparent menopause due to removal of the uterus, the incidence of these flushes gives us an indication as to the time when the real menopause supervenes. I have records stating when the flushes came on in 83 cases of patients whose age at the time of the operation was not more than 50. They may be considered in three groups, the first comprising 26 cases of patients under 40; the second, 43 cases of patients of 40 to 47; and the third, 14 cases of patients of 48 to 50—that is, about the usual age for the menopause.

The results are as follows:—

Group 1 (26 Cases).

Flushes came on "soon after operation" in	5 cases.
,, ,, within a year in	3 ,,
,, had not come on up to date of report, varying from 1 to 8 years after operation, in	18 ,,

Group 2 (43 Cases).

Flushes began before operation in	4 cases.
,, came on "soon after operation" in	5 ,,
,, ,, within a year of operation in	5 ,,
,, ,, ,, 2 years ,, ,, ...	5 ,,
,, ,, ,, 3 ,, ,, ,, ...	6 ,,
,, ,, ,, 4 ,, ,, ,, ...	2 ,,
,, had not come on up to date of report, varying from 1 to 5 years after operation, in	16 ,,

Group 3 (14 Cases).

Flushes began before operation in	6 cases.
,, came on "soon after operation" in...	4 ,,
,, ,, within 1 or 1½ year in	3 ,,
,, had not come on when seen a year after operation in	1 ,,

In those cases in which flushes had come on and thus enabled us to fix the advent of the true menopause, the ages at which this occurred were as follows:—

At 30,	2 cases	At 42,	1 case	At 47,	2 cases.
,, 32,	1 case	,, 43,	2 cases	,, 48,	5 ,,
,, 37,	2 cases	,, 44,	1 case	,, 49,	4 ,,
,, 38,	2 ,, ...	,, 45,	4 cases	,, 50,	3 ,,
,, 41,	1 case	,, 46,	2 ,, ...	,, 51,	2 ,,

These data bring out two points: first, that the true menopause does not usually come on for several years after the removal of the uterus with conservation of one or both of the ovaries in women who have not attained the age of the menopause, and consequently the cessation of menstruation in such cases is properly described as an "apparent menopause." Secondly, that the removal of the uterus often brings about the menopause a good deal earlier than the usual time.

The real artificial menopause is brought about by the complete removal of both ovaries, with or without the uterus. These operations are followed by the cessation of menstruation, and flushes of heat usually come on within a few weeks of the operation.

In a few cases when both the ovaries have been removed and the uterus has been left menstruation continues, either apparently or in reality. Apparent menstruation is due to some uterine condition which maintains irregular hæmorrhage; this may be a polypus in the uterus or a marked endometritis, such as is found in cases of pyosalpinx. But real menstruation may occur if a portion of ovary has been left behind. When an operation is undertaken on account of inflammatory conditions necessitating the removal of the appendages it is not always easy to be certain that a small fragment of ovary has not been left behind among adhesions or on the distal portion of the pedicle. This is not an occurrence of any importance. In fact, so far from being a drawback, it is an actual advantage, because the convalescence of the patient from the operation is not complicated by the disturbing influence of the artificial menopause. In many of my later operations for inflammatory conditions of the tubes

I have deliberately preserved one ovary when this course was possible.

The artificial menopause differs from the natural in that the cessation of ovarian activity is brought about suddenly instead of gradually, and consequently the resulting symptoms are more marked. Flushes are often more severe and more frequent, and the alteration of disposition which accompanies the normal menopause is more pronounced. When the menopause occurs in the course of nature the woman is prepared gradually for the diminution of sexual activity and dulling of sexual instincts; in the case of operation these changes are forced upon her suddenly. The younger she is the more marked the effect is likely to be.

Time would not allow me to go fully into the question of the effects of removal of the ovaries, but my notes on after-results supply ample material for this investigation, and I hope to be able to carry it out before long. I will only say now that the lurid pictures which have been drawn of the effects of double ovariotomy in "unsexing a woman" have been absurdly exaggerated, and that I can state from certain knowledge that women who have had to undergo these operations do not become the sexless hypochondriacs and lunatics that they are supposed to develop into. At the same time I may add that there are manifest advantages in preserving one ovary when the primary consideration of the woman's health allows of this course.

Treatment at the Menopause.

I shall conclude these remarks with a few practical observations on the treatment of women who are passing through the menopause, whether natural or artificial.

Moral treatment is not without its importance. The psychical disturbances should be dealt with sympathetically, but not too seriously, and patients should be impressed with the thought that their disturbances are not unnatural and will pass over before long, leaving them probably better emotionally, mentally, and physically than they were before. It should be made quite plain that the menopause is not a time of any special danger and that the healthy woman has nothing to fear from it. At the same time any deviation from health, either local or general, must be carefully investigated and treated, without being vaguely relegated to the limbo of incidents of the change of life.

A course of ammonium bromide, in 10-grain doses three times a day, combined with some bitter tonic such as tincture of cinchona, is often very useful, both in checking flushes and in allaying nervous irritability. The taking of alcohol in any form should be discouraged, as it is peculiarly apt at this time to degenerate into the insidious practice of nipping. So many women at the menopause suffer from constipation and flatulence that special treatment should be directed to these points: and the tendency to obesity should be fought against by encouraging exercise and discouraging afternoon naps and sitting about all day. In some cases of artificial menopause the distressing flushes can be alleviated by the administration of ovarian extract in 5-grain doses two or three times a day, continued for several days at a time.

Upper Wimpole-street, W.

THE BUENOS AIRES INTERNATIONAL EXHIBITION OF HYGIENE.—Under the auspices of the Argentine Government an International Exhibition of Hygiene is being organised by a committee of medical men resident in Buenos Aires. His Majesty's Minister to the Argentine Republic is the honorary chairman of the British Section of which Dr. Mulcahy is chairman. A congress will be held in connexion with the exhibition, which will be opened on May 25th, and there will also be displays of physical exercises and contests of strength and skill. The exhibits will include everything appertaining to the improvement of the health of a community and will be divided into 13 sections. The site selected for the exhibition is a position easy of access and about 1½ miles from the centre of the city; it covers approximately 50,000 square metres, the area allotted to Great Britain covering 11,400 square feet. Dr. Canton is the President and Dr. Luis Agote secretary of the exhibition. A memorandum giving preliminary details has been issued by the Board of Trade, and further particulars can be obtained from the British Commissioner for the Buenos Aires Exhibition, Board of Trade, Queen Anne's Chambers, Westminster, S.W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases and Specimens.—Cyclic Vomiting.—Infant Feeding.

A MEETING of this section was held on Jan. 28th, Dr. H. D. ROLLESTON being in the chair.

Dr. DAVID FORSYTH showed a case of Congenital Œdema with Dilatation of the Intestinal Lymphatics. The patient, who was a boy aged seven weeks, weighing 4·25 kilogrammes, and an only child, was admitted to the Evelina Hospital on account of his œdematous arms and legs. From the first his left hand, left foot, penis, and scrotum were much swollen. His right leg was affected to a less degree. The back of the left hand was enormously swollen, looking as if it had been blown up tightly with air. The dorsum of the left foot and the outer side of the left leg showed another large œdematous mass. The right arm and foot were swollen. The penis and scrotum were thrice their proper size. All these œdematous areas pitted readily. The face and trunk showed nothing amiss. No family history of congenital œdema could be obtained. He seemed to pass an average quantity of urine, which contained no albumin. After a sudden rise of temperature he died somewhat unexpectedly. At the post-mortem examination the œdematous patch on the left leg was incised and appeared as a greyish-white, gelatinous mass. Microscopically, it was composed of connective tissue with large spaces which had been distended with clear fluid. The peritoneum covering the stomach, intestines, and mesentery was opaque, slate-coloured, and very greatly thickened. The mesenteric glands were healthy. About 100 cubic centimetres of non-fatty turbid fluid had collected in the peritoneum. The heart, lungs, and other viscera were healthy.

Dr. ROLLESTON and Mr. A. C. D. FIRTH showed a case of Hemiatrophy of the Cerebral Hemisphere. The patient was a girl aged 1 year and 2 months. The mother gave a history of a series of fits at irregular intervals, the paralysis being noticed after the last. Examination showed spastic paralysis of the right arm and leg, and hemianopia involving the temporal half of the left retina and the nasal half of the right. The child died from meningitis. Post mortem, the left cerebral hemisphere was markedly atrophic.

Mr. DOUGLAS DREW showed a case of Separation and Displacement Forwards of the Lower Epiphysis of the Femur treated by Plate and Screws. The patient, who was a boy, aged 8½ years, was knocked down and run over by a van on Nov. 30th, 1909. He was admitted to the Queen's Hospital for Children shortly after the accident. The region of the knee was much swollen, and above the swelling there was a depression in the front of the thigh as though the knee were displaced forwards. The radiograph (taken a few days later, after failure to reduce the deformity under anæsthesia) showed the lower epiphysis of the femur displaced forwards on to the front of the shaft of the bone and rotated through nearly 90°, so that the articular surface looked directly forwards. On Dec. 9th the epiphysis was fixed in position by means of Lane's plate and screws. The limb was placed in a splint bent to a right ankle. Massage and passive movements were begun within three weeks and active movements a week later. On Jan. 19th, 1910, the child could walk and the movements at the knee were good.

Dr. F. PARKES WEBER showed a case of Family Idiocy without Characteristic Ophthalmoscopic Signs. The first patient, who was a female child, aged 14 months, was unable to sit up, and owing to weakness in the muscles of the back and neck, her head fell backwards if not supported. She could not even turn or roll herself over in the bed from one side to the other. There was vertical nystagmus at times. Ophthalmoscopic examination showed nothing characteristic of family amaurotic idiocy. The child was practically blind, though she could still perceive a bright light, and would occasionally follow an electric lamp with her eyes. The pupils reacted promptly to light. There seemed to be nothing abnormal in regard to cutaneous sensation, hearing, or taste.

Two other children besides the patient have suffered from the same condition.

Dr. Parkes Weber also showed a case of Splenomegaly and Hydrocephalus. The patient was a boy aged 13 months. He was very pale, with a large head, measuring 20⅞ inches in circumference, and an open anterior fontanelle of about the size of a shilling. The liver extended three fingers' breadth below the costal margin. Examination of the blood showed 2,568,000 red cells and 6300 white cells per cubic millimetre, the white cells consisting of small lymphocytes 33 per cent., large lymphocytes 24 per cent., eosinophiles 1 per cent., and basophiles 6 per cent. ; the hæmoglobin was 29 per cent. Although there was no history of congenital syphilis, the treatment adopted has been chiefly anti-syphilitic. The child's condition has slowly but decidedly improved. Wassermann's reaction for syphilis gave a negative result.

Mr. N. Bishop Harman showed a case of Abnormal Congenital Pigmentation of one Eye. The patient was a girl, aged 2¾ years. The condition was first noticed at the age of 6 months. In the right eye the iris was almost black ; at the distance of a yard the difference between iris and pupil could scarcely be detected ; the sclera was covered with patches of brownish-black pigment. The left eye had a white sclera and a dark-brown iris. The eyes of the parents were normal.

Dr. O. K. Williamson showed a case of Spastic Diplegia with Mental Defect. The patient was a girl, aged 10½ years. Forceps had been used at her birth. She did not walk until three years old, and from this time the mother noticed that she walked stiffly. She did not speak until about eight years of age, and at present could only say a few words. There was distinct loss of power in both arms and also hands. Sensation appeared to be normal. Both knee-jerks were greatly exaggerated. There was extensor response to plantar stimulation on the left side, but not definitely so on the right side. On attempting to grasp an object, coarse movements of the arm took place.

Mr. J. M. G. Swainson showed a specimen of a Strangulated Ovarian Tumour removed from a child, aged 2 years, who was admitted to a hospital with acute abdominal symptoms. The tumour was removed and the child made a good recovery.

Dr. Eric Pritchard and Mr. Sydney Stephenson showed a case of Basedow's Disease in a boy, aged 8 years. His father had been in an asylum for two years. The thyroid was enlarged and there was slight proptosis.

Dr. E. I. Spriggs showed on the epidiascope some X ray photographs obtained from a boy aged 3 years, the subject of Habitual Constipation.

Other cases were shown by Mr. P. Maynard Heath, Dr. A. Manuel, and Dr. T. Vincent Dickinson.

Dr. A. E. Russell read a paper on a case of Cyclic Vomiting in a child, associated with Hypertrophic Stenosis of the Pylorus.

Dr. Donald Carter read a paper on Infant Feeding.

MEDICAL SOCIETY OF LONDON.

The Cerebellum and its Affections.

A meeting of this society was held on Feb. 7th, Dr. Samuel West being in the chair.

Dr. J. S. Risien Russell delivered the first of the 1910 Lettsomian lectures on the Cerebellum and its Affections. In calling attention to what was fundamental in the anatomy of the cerebellum special emphasis was laid on the nuclei of the organ and their connexions with other parts of the nervous system, for the reason that they subserve such important functions. The results of the researches of Sir Victor Horsley and several others prove that no fibres emanate from the cerebellar cortex which find their way into the peduncles, and that any efferent fibres that leave the cerebellum by its peduncles are derived from its nuclei. The superior peduncle, however, is the only purely efferent tract from the organ. It takes its origin from the dentate nucleus, forms important connexions with the red nucleus, oculomotor nuclei, and optic thalamus, thus bringing one-half of the cerebellum into connexion with the cortex of the opposite cerebral hemisphere. The other peduncles convey afferent tracts to the cerebellum, the middle one supplying a route by which impulses may reach the cerebellum from the cerebrum by way of the pontine nuclei. Among the most important of the fibres which form the inferior peduncle are those which constitute Fleichsig's tract (dorsal cerebellar tract) and those from the vestibular nerve and the nuclei with which it is connected, while there are in addition those from the inferior olive, the reticular formation of the pons, and the lateral nucleus of the medulla. Stress was laid on the importance of recognising that the nuclei of Deiters and Bechterew are part of the cerebellar system. Both of these nuclei have important connexions, not only with the cerebellum, but with the oculomotor nuclei, and from the nucleus of Deiters is derived the ventro-lateral tract, which passes down the homolateral side of the spinal cord and serves as one path by which impulses from the cerebellum may reach the cord. Another route to the cord is afforded by the connexion which the superior cerebellar peduncle makes with the red nucleus, in that from this region is derived Monakow's bundle (rubro-spinal tract), which passes down to the lateral column of the cord, and which constitutes an indirect motor path, which permits of locomotion in an animal deprived of its cerebrum, and in whom the pyramidal tracts are thus put out of action. Afferent impressions to the cerebellum and red nucleus can evoke efferent impressions, which are capable of maintaining station and locomotion without the coöperation of the cerebrum, and there is evidence to show that the afferent impressions are derived from the deeper structures, such as the muscles and joints. The most important peripheral sense organ from which the cerebellum receives afferent impressions, however, is the labyrinth, through the vestibular nerve, which has important connexions with the nucleus of Bechterew and that of Deiters. Sherrington's conception of the labyrinth as part of a proprio-ceptive system, in which the afferent stimuli which evoke central reflex reactions are generated by the actions of the organism itself, as opposed to its environment, is fully considered, as is his view that the labyrinth is the proprio-ceptor for the head segment, and the cerebellum the head ganglion of the proprio-ceptive system as a whole, to which internuncial paths from many proprio-ceptive centres of other segments converge, together with those from the labyrinth. In endeavours to determine the precise functions of the cerebellum both excitation and ablation experiments have been performed. The former cannot be said to have always supplied results that have been very satisfactory, for most observers have experienced the difficulty of evoking a response from the cortex of the cerebellum, as compared with the facility with which a response is obtained when the cerebrum is similarly under investigation. Nevertheless, Dr. D. Ferrier was able to evoke certain movements, notably in connexion with the eyes and head, and Adamkiewicz and others believe that the cerebellum contains definite and distinct centres for all the voluntary movements of the body situated in the cerebellar cortex, and that accordingly excitation of the cerebellar cortex is capable of evoking contraction of the muscles of the homolateral limbs. His (Dr. Russell's) own experience has, however, been at variance with such observations, and justifies the belief that Horsley and Clarke are correct in considering that the cortex of the cerebellum is inexcitable, and that such movements as result from electrical excitation of the organ are the outcome of spread of the stimuli to the cerebellar nuclei. These observers failed to evoke movements on electrical excitation of the cerebellar cortex, but maximal stimulation of the basal region and dentate nucleus resulted in homolateral conjugate deviation of the eyes and head and flexion of the homolateral elbow, whilst deeper excitation of the paracerebellar nuclei caused in addition extension of the contralateral elbow, hyper-extension of the neck and trunk, and forcible extension of the lower limbs. The condition of things which prevailed reminds us of the clinical picture which Dr. Hughlings Jackson described so long ago as 1871 as produced by a cerebellar fit, for in this the head is retracted, the trunk arched backwards, the upper limbs flexed, and the lower ones rigidly extended. Dr. Jackson's view that an interaction is constantly going on between the cerebrum, cerebellum, and spinal cord, and that if one of them is put out of action from any cause the energy of the other parts asserts itself, is referred to, and his explanation of cerebellar influx to the lower centres causing increased tonus when the cerebrum has been put out of action is fully discussed. Some of his own (Dr. Russell's) results at one time appeared to be in opposition to Dr. Jackson's theory, but in the light of more recent investigations he is now convinced that his results are capable of a different interpretation from that which seemed the more obvious at the time when they were published. Boucbé's experiments are quoted, in which fits induced by absinthe were clonic when the cerebrum was intact, but tonic when the cerebrum was removed or the mesencephalon divided—a condition of things further emphasised by Leonard Hill's experiments, in which he was able to vary at will the nature of an absinthe fit from clonic to tonic, according as he allowed the arterial supply to the cerebrum to go on or interrupted it by clamping the vessels. The investigations of Horsley are quoted, in which decerebrate rigidity induced by section of the mesencephalon at the level of the intercollicular groove was unaffected by successive sections through the cerebellum until the nuclei were reached; also others in which a horizontal section, cutting off the dorsal aspect of the cerebellum from the nuclei, produced no effect on decerebrate rigidity subsequently induced by section of the mesencephalon, which differed in no way from that which results when a similar lesion is produced in a normal animal. Thiele's researches into the source of the tonus which occasions decerebrate rigidity are also referred to as showing that successive lesions through the mesencephalon do not interfere materially with decerebrate rigidity until the region of the paracerebellar nuclei is reached. All these experimental results, together with Sherrington's original observation that decerebrate rigidity is abolished on the homolateral side by hemi-section of the spinal cord, are regarded as strongly supporting Dr. Jackson's view of cerebellar influx. The best established facts are in accord with the view that the cerebellum is an organ the cortex of which receives afferent impressions from such deeper-seated structures as the muscles and joints, which evoke from its nuclei that degree of muscle tonus that is essential for maintaining posture and for making coördinate movements possible. In dealing with the results of ablation experiments on the cerebellum, he pointed to the fact that ever since the investigations of Flourens in 1824 a host of experimental physiologists have confirmed his observation that destructive lesions of the organ result in disturbances of the coördination of muscular movements, while since Luciani's experiments there have been those who have recognised that he is correct in supposing that in addition to incoördination diminished tonus and want of force of muscular contraction are among the consequences of destruction of the organ. From the practical standpoint of our clinical work it is not only important to determine the functions of the cerebellum in general, but it is also desirable that we should gain such information as may enable us to localise the seat of a lesion in the organ. Thus it is that the results of unilateral ablation of the cerebellum are particularly important to the clinician. Among these may be mentioned rotation and reeling towards the side of the lesion, incoördination, more marked in the homolateral limbs, in which some have determined, in addition, a loss of tonus and want of force of muscular contraction. The head assumes a fixed attitude, in which the ear is approximated to the shoulder on the side of the lesion, while the neck is rotated in a manner that causes the homolateral side of the face to be turned upwards, while the trunk is curved with the concavity to the side of the lesion. The eyes, having recovered from "skew deviation," which is an immediate effect of the lesion, show lateral conjugate turning to the opposite side, with coarse lateral nystagmus. Emphasis is laid on the homolateral defect in the limbs, which results from a cerebellar lesion, in contrast to the contra-lateral effect which obtains in cerebral lesions, a feature that is strikingly illustrated not only by the experimental results but also by the connexions which the cerebellum forms with the spinal cord, as contrasted with those which obtain in the case of the cerebrum. Emphasis was also laid on the fact that destructive lesions of the labyrinth produce similar effects to those which result from destructive lesions of the cerebellum.

OPHTHALMOLOGICAL SOCIETY.

Bilateral Ophthalmoplegia in an Infant.—Congenital Anterior Synechiæ with Buphthalmos.

A MEETING of this society was held on Jan. 27th, Mr. W. H. H. JESSOP, Vice-President, being in the chair.

Dr. F. E. BATTEN read a note on a case of Bilateral Ophthalmoplegia in an Infant. He referred to a case of bilateral paralysis of the third nerves in an infant shown by Mr. Jessop at a meeting of the society on June 10th, 1909. The case he now reported presented very similar symptoms. The child, a male, aged 10 months, was the fourth of four children, the eldest of whom had died from meningitis. The child was quite well till seven months old, when a squint was noticed. When eight months old there was some weakness of the right side of the face. The child was otherwise quite well, and when first seen at 10 months of age was a plump, rosy-cheeked child. There were marked external strabismus, double ptosis, and paralysis of all the muscles supplied by the third nerves. The optic discs were normal. There were slight weakness of the right arm and leg and a constant rhythmical movement. The cerebro-spinal fluid was found to contain tubercle bacilli, and a vaccine gave a positive reaction. The paralysis gradually extended, and the child died three months later. Optic neuritis never developed. The necropsy showed a tuberculous mass occupying the region of the corpora quadrigemina and tegmentum. From the symptoms—i.e., the ophthalmoplegia associated with a rhythmic tremor—it was possible to arrive at an accurate diagnosis as to the situation of the lesion, and from the examination of the cerebro-spinal fluid an accurate diagnosis as to the nature of the lesion.

Mr. M. S. MAYOU showed a case of Congenital Anterior Synechiæ with Buphthalmos. The patient, a male, aged 7 weeks, was strong and healthy, and showed no signs of syphilis. He obviously had very bad vision, but could see bright lights. There was well-marked nystagmus, and the right eye had obvious excentric fixation for objects, but, as far as could be seen by focal illumination and ophthalmoscopical examination, presented no pathological change. The left eye was blind. It had the appearance of buphthalmos with iris bombé. The iris was closely applied to the back of the cornea and at the pupillary margin it had not separated off from the corneal tissue and was adherent. Descemet's membrane covered the back of the cornea nearly up to the position where the iris was adherent, but the membrane was entirely absent in the position of the adhesion and over the whole pupillary area. The iris was thin and attenuated, especially in its mesoblastic constituents. The angle of the chamber was imperfectly formed. There had been a failure of the separation of the iris at the angle of the anterior chamber, which was occluded. There was no canal of Schlemm present. The ligamentum pectinatum was very imperfectly formed, and the ciliary muscle ill-developed. The suspensory ligament of the lens was absent. The lens itself was conical anteriorly, and although it was adherent to the cornea there was no anterior polar cataract or even wrinkling of the capsule. Posteriorly there was a large gap in the capsule which was filled in by loose atypically developed fibrous vitreous, into which passed a persistent hyaloid artery with a well-marked nucleated sheath. The hyaloid artery passed backwards from the mass behind the lens to the disc. The choroid was normal. The retina was *in situ* and macroscopically appeared normal, but on microscopical examination the retina in the anterior part of the globe showed a great deficiency in ganglion cells. The rods and cones in all situations were short and imperfectly developed. The optic disc presented a coloboma of the nerve sheath below and a well-marked hyaloid artery coming off from its centre, around which there was some atypically developed fibrous vitreous. There was no cupping of the disc. Although the superficial clinical appearance of the eye before enucleation resembled a pseudo-glioma with secondary glaucoma due to an excluded pupil and iris bombé, the presence of a clear cornea together with the absence of all signs of exudation in the pupil was strongly against the probability of the defect being due to intra-uterine inflammation. The pathological examination further bore this out and showed that the condition was undoubtedly due to mal-development. A failure in the development of the suspensory ligament had taken place. This had led to the ciliary processes remaining adherent to the sides and back of the lens. These processes consisted practically of nothing more than the epiblastic element of which they were composed. The eye increasing in size had pulled the epiblast inwards, so that the situation where the processes were adherent to the back of the lens, the ora serrata, had not formed, and the retina appeared to join it close up to the ciliary processes. The anterior lenticonus was due to the lens being adherent to the cornea in front, whilst it was held firmly in position behind by the ciliary processes and persistent hyaloid artery and fibrous vitreous. Although the lens was in contact with the cornea, there was no anterior polar cataract, which was against the view that contact alone of the lens with the posterior surface of the cornea was sufficient to produce it. The drag of the ciliary processes had evidently produced a rupture in the posterior capsule, which was subsequently filled by atypically developed fibrous vitreous and accounted for the persistence of the hyaloid artery. The imperfect formation of the retina was of interest in view of the fact that the other eye, although presenting no ophthalmoscopic change, evidently possessed bad vision, as the patient had nystagmus and excentric fixation, and did not take notice of anything but large objects; presumably the retina might be affected by similar changes. That intra-uterine buphthalmos could occur was important in view of the fact that cases had been recorded of congenital anterior staphyloma in which perforation had apparently taken place immediately before birth.

The following specimens were shown:—

Mr. M. L. Hepburn: Hæmorrhage at the Macula.

Mr. N. Bishop Harman: Multiple Superficial Atrophic Areas of Irides in Old Kerato-iritis of Inherited Syphilis; also Exophthalmos and Facial Deformity (as in Oxycephaly) without Deformity of the Skull-cap.

Mr. C. S. Blair: Peculiar Retinal Changes.

Mr. A. W. Ormond: A case of Lacrymal Tumour.

Mr. J. H. Tomlinson: Scotomagraph with Stereoscopic Fixation.

Mr. G. Winfield Roll: Sarcoma of Choroid (with microscopic sections).

Mr. Priestley Smith: A new Simple Ophthalmoscope.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Rich Protein Diet in Relation to Gout and the Thyroid Gland.—Prostatism.—Blood Pressure in Anæsthesia.

A meeting of this society was held on Feb. 2nd, Dr. Byrom Bramwell, the President, being in the chair.

Dr. Norman Walker showed the following cases:—1. A young woman having on her right forearm a Self-inflicted Rash which had given rise to great difficulty in diagnosis previous to her admission to the hospital; the lesions had been produced with pure carbolic acid. 2. A case of Xeroderma Pigmentosum to illustrate the beneficial effects of carbonic acid snow; many of the lesions had disappeared.

Dr. R. Cranston Low showed a case of Spreading Angioma in a young lad. After an accident a red spot appeared on the left cheek and continued to spread for 12 months. The lesions looked like port-wine stains. Carbonic acid snow had been applied all over the spots for 30 seconds at a time and already marked improvement had taken place.

Professor F. M. Caird showed the following cases:—1. A young girl from whose stomach a large Hair-ball had been removed by gastrotomy. The history was that the child, when aged two years, began to pull out her hair and chew it, but that this practice stopped at the end of the fourth year. 2. A woman, after operation for the closure of a Biliary Fistula. In 1907 the patient was admitted to hospital suffering from intermittent gastric pain, constant vomiting, with drowsiness and pin-point pupils. A diagnosis of acute pancreatitis was made. On performing laparotomy the pancreas was found to be in a condition of acute inflammation, with fat necrosis. The pancreatic tissue was broken up and a drainage-tube was inserted. The gall-bladder was found to be filled with calculi. The patient made a good recovery after passing through a very anxious time, transfusion being required twice, and the stomach had also to be washed out on two occasions. The sinus healed and reopened several times, but latterly a mucous fistula alone remained.

Dr. D. Chalmers Watson read a paper entitled "A Rich Protein Diet in Relation to Gout and the Thyroid Gland." He commenced with a reference to the results of his earlier investigations into the effect which an exclusive meat diet administered in an uncooked form produced on the structure of the tissues, notably the thyroid gland, the kidneys, and the mucous membranes. The structure of these tissues was as a rule modified by the diet; some of the modifications were acquired by the offspring, and were in them associated with an increased susceptibility to disease. He then referred to the adverse criticism that had been directed to his results and the conclusions drawn from them, both from the clinical and experimental standpoint. Clinicians had objected to any deductions being drawn from the results obtained in animals because the diet employed was so dissimilar to any diet used by man. A reply was given to these criticisms in the result of a further series of investigations into the effects of a rich protein diet on the thyroid gland in the first, second, and third generations of animals. The diet employed consisted of ox flesh, lentils, and bread and milk, the two former predominating, the control diet being bread and milk in known proportions. The special diet was cooked before administration. The results fully confirmed, and at the same time amplified, Dr. Watson's previous results. The rich nitrogenous diet at first stimulated and afterwards tended to exhaust the thyroid gland. Dr. Watson said that gout was essentially a disease of protein metabolism. Gouty subjects were, in his view, specially subject to a particular type of auto-intoxication or infection which was responsible for various gouty symptoms. This susceptibility was in turn dependent on the particular diathesis or soil, which had as one of its distinctive features a special type of thyroid activity. Reference was made to the apparent anomaly seen in the case of gouty subjects whose symptoms were relieved by cutting off farinaceous foods and increasing the protein. Many cases of this kind had been under Dr. Watson's care and had been specially studied by him. These were, in his opinion, cases in which, in addition to a probable thyroid defect, there was a certain pancreatic disturbance, as was proved by the existence of a pronounced pancreatic reaction in the urine.—Dr. William Russell said that it was difficult for him to accept the proposition that a modification of thyroid activity had a special effect in producing gout. The important effects of over- or under-action of this gland on metabolism were well known. As regarded proteid feeding and its influence on the thyroid gland, free proteid feeding stimulated the liver and kidney activity as well as the adrenals and perhaps the seminal vesicles.

Mr. David Wallace read a paper upon Prostatism, a Consideration of its Treatment, together with Notes on the Fatal Cases after Prostatectomy occurring in the last 50 patients operated on by him. He said that symptoms similar to those associated with enlargement of the prostate were met with in patients in whom the prostate was not enlarged, and, further, that no one method of treatment was applicable for the relief of prostatism. The chief object of his paper was to direct attention to conditions in which prostatectomy was difficult or unsuitable as a means of relief to the patients who suffered from symptoms similar to those produced by simple enlarged prostate. He first considered when excision of the prostate was indicated, and deprecated the use of the catheter as a means of determining this by the amount of residual urine. He believed that early operation was justifiable and to be advocated, but pointed out that many patients with enlarged prostate lived for years without any discomfort or injury to health. In his opinion early operation should be advised in those patients who were partially disabled by the condition, or were progressively getting worse, or who had complications in spite of palliative treatment, such palliative treatment not to include the use of the catheter. The oldest patient upon whom he had operated was 90 years of age and made an excellent recovery. The class of patient he most dreaded for operation was that in which the bladder had been much over-distended for a long period and in which catheterisation had not been used. He believed that in such cases the use of the catheter or continuous drainage prior to operation for some time was advisable, the surgeon being ready to operate at once if any indication of sepsis arose. In cases where the prostate was not felt to be large per rectum it was often believed that an intravesical growth might be the cause of the symptoms and if residual urine was found operation was advised. In such cases he believed cystoscopy should be used, as not infrequently the condition was due to contracture of the neck of the bladder produced by a fibrous stenosis. There was no prostatic growth to remove and most probably the best treatment was that recommended by Chetwood—a perineal cystotomy and division of the fibrous area with a galvano-cautery. Malignant disease was commoner than was usually supposed

—in his practice 1 to 10 of simple enlargement. The presence of pain, slight incontinence, and hardness and fixation on rectal palpation, even in early cases, were the points which should put the surgeon on his guard in giving a diagnosis. In these cases he believed that an operation with a view to eradication of the disease had not yet been justified, and recommended palliative treatment, more particularly a suprapubic cystostomy. This treatment had given in two cases under his care not only great comfort to the patients but he believed prolonged their lives.—Professor F. M. CAIRD said that he had not such a dread of using the catheter as Mr. Wallace seemed to have, although he knew that Sir James Paget had said that the first use of a catheter sealed the fate of many a man. Many patients got along very well with the use of the catheter.—Mr. ALEXANDER MILES made the remark that there had been no death from embolism in Mr. Wallace's cases. He had met with three deaths from this accident. He had seen several cases of prostatism without enlargement of the prostate. In such he practised slitting the prostate in the backward direction and leaving in a tube until the wound healed was the best method.—Dr. BYROM BRAMWELL and Mr. J. W. STRUTHERS also spoke.

Mr. WILLIAM GUY, Dr. ALEXANDER GOODALL, and Dr. H. S. REID made a communication on the Blood Pressure in Anæsthesia. Dr. Goodall said that an anæsthetic which affected the blood pressure but slightly was *cæteris paribus* to be preferred. The blood pressure might be lowered by depression of the heart, which might be due either (1) to vagus inhibition by direct stimulation of the centre by the drug or by reflex stimulation through afferent nerves, or (2) to weakening of the cardiac muscle. It might also be lowered by dilatation or paralysis of the blood-vessels. The blood pressure might be raised by stimulation either of the heart or of the vaso-motor centre. The objects of the research were (1) to observe and compare the effect produced on a systolic pressure by the administration of various anæsthetic agents; (2) to note any variations in the effect produced by different methods of administration; and (3) to ascertain the conditions favourable to the production of the minimal disturbance of systolic pressure during the induction of anæsthesia. The anæsthetics employed were chloroform, ether, nitrous oxide with rebreathing, nitrous oxide with regulation by valves, nitrous oxide preceded by oxygen, nitrous oxide and ether in sequence, ethyl chloride, gas and ethyl chloride in sequence, and, finally, oxygen, gas and ethyl chloride in sequence. Observations were made with Martin's modification of the Riva-Rocci sphygmomanometer. A foot bellows was found to give a much more steady increase of pressure than the ordinary rubber bulb. Chloroform caused a considerable and fairly uniform fall of systolic pressure. Nitrous oxide caused a constant rise of systolic pressure, but this was more marked when the exhaled air was passed out through valves. When the patient was allowed to re-breathe his expired air there was no practical difference in the available anæsthesia, but the systolic pressure did not rise so high. This was explained by the lessened element of asphyxia. An endeavour had been made to eliminate asphyxial symptoms by the use of oxygen. It was found that the inhalation of one gallon of oxygen before the administration of gas by the rebreathing method altogether eliminated asphyxia, and the blood pressure hardly rose at all. At the same time the period of available anæsthesia was only slightly curtailed. Ethyl chloride caused very great disturbance of the systolic pressure. Whether it would cause a rise or a fall in any given case could never be predicted. The common result, however, was a marked fall, and with doses of five cubic centimetres or more the fall of systolic pressure was sufficient to be dangerous to life. This fall of pressure was ascribed to inhibition of the heart. A remarkable finding was that the fall of pressure did not occur after the previous administration of five respirations of nitrous oxide. The depressor effect was entirely eliminated, and there was uniformity of effect in degree and time. The initial administration of gas appeared to depress the activity of the vagus inhibitory centre and made the subsequent administration of ethyl chloride a much safer proceeding. The effect then produced was a constant rise of pressure which was attributed to asphyxia. It was found that a gallon of oxygen inhaled before the gas and ethyl chloride had the effect of preventing asphyxial symptoms and the blood pressure became practically stationary throughout the anæsthesia. In this case the oxygen did not lead to any diminution of the period of available anæsthesia.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 4th, Mr. C. Gordon Watson, the President, being in the chair.—Dr. T. G. Stevens read a paper on the Present Position of Cæsarean Section in Obstetrics, making occasional references to five cases on which he had operated successfully, as regards both mothers and children. He said that Cæsarean section was not an operation of choice when a woman had been many hours in labour with ruptured membranes, and particularly when repeated attempts had been made to deliver her by the natural route. Attempted delivery by forceps or other means might cause infection of the uterine contents and to perform the Cæsarean operation in these circumstances was usually courting disaster. On the other hand, infection of the uterine contents did not readily occur if there had been no manual or instrumental interference, and the mere fact of labour having been in progress for some hours under such conditions did not necessarily add to the risk of the operation. The gradual acceptance of the axiom that it was "unjustifiable to perforate a living child" had led to an extended use of the Cæsarean operation. The indications for it were pelvic contractions, tumours obstructing delivery (especially carcinoma of the cervix), cicatricial contraction of the vagina and cervix, neglected malpresentations, eclampsia, absolutely central placenta prævia with an undilated os, and concealed accidental hæmorrhage. When the pelvis had a diagonal conjugate measurement of 2½ inches or less it was impossible to deliver a full-time child alive, and with a measurement of 2 inches or less it was equally impossible to deliver a full-time child dead and mutilated without grave danger to the mother. The safest time to perform the operation was just before the full term of pregnancy before labour began or just at the commencement of labour, no vaginal examination having been made. There was no added risk if the patient was not in labour; the uterus appeared to contract strongly and well if suddenly emptied; in fact, it contracted better than if labour had been in progress for several hours.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Jan. 27th, Dr. Thomas R. Bradshaw, the President, being in the chair.—Dr. R. J. M. Buchanan read a paper on the Symptoms and Treatment of Duodenal Ulcer. He referred to the symptoms of the disease under the headings of (1) latent ulcer, in which a hæmorrhage or a perforation, or both, might be the first indication of a lesion in the upper alimentary tract; (2) suspected ulcer with a series of premonitory and intermittent symptoms which might last over a period of months or years; and (3) symptoms associated with the chronic and well-established disease. He discussed the symptoms of pain, its position, its time relation to food, to the kind of food ingested, and its relation both to the position of the ulcer and to spasm of the pharynx. In the physical examination of the abdomen palpation with the patient in a hot bath was recommended when there was difficulty owing to spasm of the rectus muscle. Treatment by rest in bed, combined with a strict adherence to a diet consisting of animal proteid and the administration of normal serum for a prolonged period, was advocated. In cases where operation was called for he advised a course of proteid diet and serum first, and that it should be resorted to as soon as possible after operation and adhered to for some time.—Mr. Keith W. Monsarrat read a paper on the Indications for Operation in Gastro-duodenal Ulceration and on the selection of the operation to be performed.—The President remarked that Dr. Buchanan had not offered any explanation of the cause of the peptic ulcer and it still remained unexplained. He confessed that in most cases he was unable to distinguish clinically between gastric and duodenal ulcers.—Mr. W. Thelwall Thomas drew attention to the difficulty of distinguishing a lesion of the stomach or duodenum from one of the gall-bladder. The sensory nerves distributed to these structures were the same and it was known that the viscera were practically insensitive to ordinary sensations. The best treatment of hæmorrhage was absolute starvation. He doubted the utility of drug treatment and considered that the treatment of duodenal ulceration was essentially surgical.—Mr. George P. Newbolt said that he was not in favour of gastro-enterostomy as a routine practice in perforated duodenal ulcer; in many cases it was not necessary.—Dr. Charles J. Macalister referred to the probable toxic origin of gastric ulcer as indicated by the long-continued prodromal symptoms which occurred in most cases.—Dr. John Hay referred to a patient who had suffered from recurring melæna and symptoms of duodenal ulcer. He was relieved temporarily by gastro-enterostomy, but two years later the abdomen had to be opened again on account of most serious hæmorrhage. The enterostomy opening was found to have closed, the patient died, and no lesion could be found in the œsophagus, stomach, or intestines to account for the fatal hæmorrhage.

Reviews and Notices of Books.

The Practice of Surgery. By WALTER GEORGE SPENCER, M.S., M.B. Lond., F.R.C.S. Eng., Surgeon and Lecturer on Surgery, Westminster Hospital; Member of the Court of Examiners, Royal College of Surgeons, England; late Examiner in Surgery at the University of London; and GEORGE ERNEST GASK, F.R.C.S. Eng., Assistant Surgeon and Demonstrator of Practical Surgery, St. Bartholomew's Hospital. With 20 Colour Plates, 28 Skiagram Plates, and 707 Black and White Illustrations. London: J. and A. Churchill. 1910. Pp. 1234. Price 22*s.* net.

THE "Surgery" written by the late Mr. W. J. Walsham enjoyed for many years a wonderful popularity amongst the students of the United Kingdom, for it included just what was required for the ordinary examinations in surgery and yet did not contain much more than was needed. During Mr. Walsham's life eight editions of his "Surgery" appeared. In the ninth edition Mr. Walter Spencer was responsible for much of the contents, and now in this volume, which is practically a new book and yet theoretically the tenth edition of Walsham's "Surgery," we have a work in every way calculated to satisfy the wishes of those who are studying surgery. It is often more difficult to rejuvenate a book, which from its very age may be suspected of lagging behind the times, than to write a new work on the same subject. But we should have regretted the demise of so well-known a friend as Walsham's "Surgery." The names of the editors or authors, as they must really be considered, are sufficient to guarantee that the book has been brought thoroughly up to date without the sacrifice of any of those qualities for which the original work was esteemed. One of the most noteworthy points of modern medical literature has been the improvement in the illustrations, and this matter has by no means been neglected in the present book, for many of the older illustrations have been withdrawn and have been replaced by others more accurately representative of the objects and structures that they are intended to portray. The introduction of 20 coloured plates is a valuable innovation, and we can speak with the greatest praise of the excellence with which these coloured plates have been produced. We do not remember ever to have seen more satisfactory coloured illustrations in a work on surgery.

The science of surgery has of late years grown enormously, and this is true whether we consider the complete science itself or that portion of it a knowledge of which is required from the average student at his final examination. A comparison of the present work with the first edition of Walsham's "Surgery" will give a striking proof of this enormous increase, but great though the increase is we have not been able to find in the present volume anything that might usefully, or even safely, have been omitted. To test the value of a text-book it is well to examine some of the points in which students are known to find special difficulty, and a scrutiny conducted on this principle has shown us that the authors are skilled teachers and able to appreciate the wants of their readers. In the account of the treatment of wounds a wise middle course is steered between the claims of antiseptic as opposed to aseptic surgery, the inclination being a little towards the reasonable use of antiseptics. A very useful chapter is that on the examination of the blood for surgical purposes, a matter of increasing moment every year. The section dealing with injuries to the bones is good, and the skiagrams illustrating it, which have been taken by Dr. Hugh Walsham, are especially worthy of praise. We are told that in case of fracture of the radius above the insertion of the pronator teres the position of full supination is too irksome to the patient. This is not universal experience, and while the great difference which accurate union of the bone in this fracture makes to the use of the limb would fully justify no small amount of discomfort, as a matter of fact, a very few hours generally suffice to remove all irksomeness. In the account of intracapsular fracture of the neck of the femur we still find the diminished obliquity of the neck of the bone given as one of the predisposing causes; even if this change of angle does occur it is not easy to see why it should predispose to a fracture. The weakening of the bone with age is fully sufficient to account for its giving way. Mr. W. H. Jessop has contributed the chapter on the surgery of the eye, and some excellent coloured illustrations of the fundus are provided to make comprehension simpler of a difficult but well-written section. Mr. C. E. West's account of the diseases of the ear contains all that could be wished, and especially good is the account of suppuration of the middle ear. The chapter on diseases of the bladder is furnished with 12 coloured cystoscopic pictures provided by Dr. David Newman. They give a very clear idea of some of the more common morbid vesical conditions, as readers of THE LANCET know.

We have made a careful examination of this book and we are satisfied that it will prove useful and sufficient for the student. The style is simple while the type is clear, and we feel sure that any who employ it as their text-book in the preparation for an examination in surgery will not regret their choice. The printing of the volume and of the illustrations is worthy of the publishing firm from which it emanates, and the price at which it is issued must be considered moderate when the size of the book and the number of its illustrations are borne in mind. A satisfactory index is provided.

Infectious Diseases: a Practical Text-book. By CLAUDE BUCHANAN KER, M.D. Edin., F.R.C.P. Edin., Medical Superintendent, City Hospital, Edinburgh, &c. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 555. Price 20*s.* net.

THE subject matter of the volume before us is based on the author's experience in the wards of the Edinburgh City Hospital, into which are admitted, not only the notifiable diseases, but also minor infectious ailments, such as mumps, chicken-pox, and rubella, as opportunity occurs. It is written from a practical point of view and does not deal to any great extent with the literature of the subject. The introductory chapter treats of the general features of infective disease, such as toxins, immunity, the course of fever and its management, diet, and prophylaxis. With regard to the stage of incubation, the author rightly states that little is known as to the nature of this period or of its relation to the subsequent onset. He holds that the latter corresponds with the first out-pouring of toxins into the blood; but it is difficult to believe that the germs have been multiplying in the tissues so far without producing any poisons, and we are inclined to think that some connexion will ultimately be found to exist between the peculiar phenomena called anaphylaxis and the incubative period. The second chapter deals with measles, and is illustrated by a particularly successful coloured plate of a child suffering from the disease. We venture to ask whether anything is gained by prefixing as a definition of the malady the words "specific infectious eruptive fever." The very same words are used to define rubella and scarlet fever, so that the definition is not even a description of the disease in question. It gives at most the *genus* and not, as the old logicians would have said, the *differentia*. Probably, however, diseases being bodily conditions do not admit of more than description, except in relation to their efficient cause. Dr. Ker does not think that measles can be conveyed by the air, nor does he find that uncomplicated cases show hyper-leucocytosis in the blood, as has been described by some writers. He emphasises the value of open-air treatment in the broncho-pneumonia which may occur in this fever. Chapter III. is devoted to rubella and Chapter IV. to scarlet fever. In regard to the latter disease there would seem to exist a family lack of resistance, which leads to severe attacks. We do not quite understand the use of the word "ataxic" as applied to these grave forms, and it seems a pity to use a word usually devoted to affections of coördination to denote some irregularity of fever or course or severity of delirium. Dr. Ker notes the liability to nephritis in mild attacks, and believes that direct draughts of cold air may give rise to this complication. A source of error in diagnosis is noted in the scarlatiniform rash which may occur in varicella. Chapter V. deals with small-pox, the author noting with regret that it should be necessary to treat of this disease in the twentieth century, when it could have been rendered as extinct as sweating sickness or the black death if reason had prevailed over prejudice in the matter of vaccination. The chapter is well illustrated. Vaccinia is discussed in Chapter VI. and varicella in the following chapter ; the latter is sometimes not such a mild disorder as it is usually supposed to be and may be followed by nephritis.

Typhus fever claims Chapter VIII. and Dr. Ker confirms the statement that patients suffering from it exhale a characteristic odour ; the disease is specially fatal in fat subjects. Here, again, we find the term "ataxic" used apparently for delirious cases. Chapter IX. is devoted to relapsing fever, which we are a little surprised to find included in the volume, as it is scarcely ever seen in this country. We are inclined to ask why plague, cholera, and dysentery are omitted if this is included. Dr. Ker notes that infection may be conveyed to a person who merely enters the room occupied by a sufferer ; it therefore does not need the intermediary of a bug or other biting insect for its transmission, as some authors seem to hold. Enteric fever is fully dealt with in Chapter X. We should like to take the opportunity here afforded for protesting against the use of the term "coli bacillus" for the bacillus of the colon, the expression suggesting that writers using it do not realise that *coli* is meant to be the genitive case of *colon*, but we fear that the term, vouched for by brevity, has now become accepted pathological English. Diphtheria occupies Chapter XI., and is well described and discussed. Dr. Ker does not advocate the use of the enormous doses of antitoxic serum employed by some authorities, but advises the repetition of smaller quantities as they are required. This is pre-eminently sane counsel. Good illustrations are given of the causal organisms of diphtheria and of Vincent's angina, and also of the pseudo-diphtheria bacillus. Whooping-cough, erysipelas, mumps, and cerebro-spinal meningitis are dealt with in the remaining chapters of the book, a final word being devoted to special problems which arise in connexion with fever hospital administration, such as "return" cases and super-infection of a patient with a second specific fever.

We congratulate Dr. Ker on the preparation of an authoritative and valuable book. It is clearly the work of a skilful, observant, and experienced physician, and may be cordially commended to all practitioners for the useful practical advice it contains, both as to diagnosis and treatment. The style is clear and easy ; here and there perhaps it is unduly colloquial, as in such expressions as "frequent tepid sponges" for sponging, "nasty instances of collapse," and "a decent view of the throat." We do not know what is the authority for the spelling "periphere" for periphery (περιφέρεια). We have only one fault to find with the book—it is heavy and cumbrous to hold, and the lines of type, measuring nearly seven inches in width, are trying to the eye. The paper and print are good, and the illustrations, as already noted, are generally of high merit.

Small-pox and Vaccination in British India. By S. P. JAMES, M.D. Lond., D.P.H., Major, Indian Medical Service ; Statistical Officer to the Government of India in the Sanitary and Medical Departments ; formerly with the Royal Society's Malaria Commission in India. With 14 diagrams. Calcutta : Thacker, Spink, and Co. ; London : Thacker and Co. 1909. Pp. 105. Price 7*s*. 6*d*., or 6 rupees.

IN all European countries where vaccination against small-pox has been extensively carried out an appeal to the figures of small-pox mortality has given in favour of vaccination an answer as unequivocal as it is satisfactory, and it is therefore of great interest to ascertain whether a similar answer holds good for a country like India where the difficulties attending the introduction as well as the progress of vaccination, owing to religious and other prejudices, have been enormously greater than in Europe. Major James, from his official position as statistical officer with the Government of India in the Medical and Sanitary Departments, knows these difficulties well and states them concisely. The population amongst whom vaccination has to be carried out is more than 230,000,000, and the extent of country is more than 1,000,000 square miles. About 214,000,000 of the people live in places where vaccination is optional, and as recently as 1901 not more than 5 or 6 per cent. of them could read and write their own language. The great majority of the people, while being exceedingly ignorant and childish, are apathetic, and regard the dangers of future events as "Kismet," or the will of God. It is also characteristic of nearly all natives of India to be suspicious of any measure not sanctioned by the custom of ages. From very early times there has existed in India the worship of a goddess of small-pox, and a visitation of the disease is regarded by some as being favoured by the goddess. Brahmin inoculators, who spread the disease by direct inoculation, discredited vaccination by Government officials as they lost their fees, and, having great influence with the people, were violent opponents. In the early days of vaccination the difficulties of providing a constant supply of good vaccine were almost insuperable, and even at the present time vaccination operations in most provinces can only be carried out during the cold season. On account of the great expense it has not been possible to employ a skilled medical agency in the actual work of vaccinating, and for many years the only vaccinators who could be obtained were entirely illiterate, very ignorant, and wholly untrustworthy.

Major James handles his subject well and produces well thought out statistical and other proofs to show the value of vaccination in circumstances where the procedure has everything against it. He details an interesting deduction from the knowledge that small-pox in its natural unmodified form very frequently results in permanent blindness—in England during the last half of the eighteenth century fully two-thirds of the applicants for relief at the Hospital for the Indigent Blind owed their loss of sight to small-pox. He tells us that the numbers of totally blind people in British India in every million of the population in 1901 were 1340, and in 1881 there were 2330. If the latter had been the rate in 1901 there would have been no fewer than 533,368 blind people in India in that year, while as a matter of fact there were only 310,557 blind people. This rescue of a large number of people from the dreadful infirmity of total blindness, and thus in all probability from beggary, has been brought about in chief part by the diminution of small-pox in India.

Major James has given us a striking essay, and its perusal can be recommended to all interested in the value of vaccination.

Applied Surgical Anatomy, Regionally Presented for the Use of Students and Practitioners of Medicine. By GEORGE WOOLSEY, A.B., M.D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College. Second edition. With 200 figures, including 59 plates, mostly coloured. London: Henry Kimpton. 1909. Pp. 601. Price 21*s.* net.

THIS book is clearly written, easily understood, well illustrated, and prepared with care. Neither in the text nor in the illustrations is there a mark of individuality; the facts and the figures are, as the author claims for them, a careful selection from the modern aggregate of anatomical knowledge. We hoped to find—nay, it was to be expected—that there would be in this work some reflections of the movements affecting the transatlantic schools of anatomy and surgery, but were it not for the title page one could not guess from the context that this book is not a home product, so cosmopolitan has our stock of knowledge become.

Professor Woolsey's work has deservedly reached a second edition, but it is not an ideal book of applied surgical anatomy, for reasons which it is incumbent upon us to give in support of the opinion. Like many of the treatises published under this name it is a rather loose mixture of anatomical description, surgical procedure, and pathological hypothesis. Hilton's "Rest and Pain" comes nearest to the ideal of such a work, but unfortunately Hilton's explanation of referred pains, on which so much of his book depends, has proved too crude in the light of further clinical observation. At any rate, that has been found to be so in England, but the explanation offered by Professor Woolsey of the various forms of pain connected with disease of the abdominal organs is that offered by Hilton—a communication between the sympathetic plexuses and the cutaneous nerves of the body wall. Even Hilton occasionally goes rather far afield to find explanations for anatomical facts, as when he ascribes to the middle layer of the cervical fascia the function of keeping the lungs from pressing on the heart, which Professor Woolsey cites, evidently with approval. Mechanical explanations of morbid conditions are on every occasion preferred to an explanation based on a derangement of function or of growth. The following instances may be cited from this work. Congenital dislocation of the hip is ascribed to deficient formation of the iliac part of the acetabulum; spina bifida to a congenital defect of the vertebral canal; epispadias to a failure in the formation of the roof of the urethra; and flat foot to a yielding of the ligaments of the arch of the foot. All of these are explanations which will not suffice the thinking reader.

We are especially surprised that an American author should have been content to give an altogether antiquated account of the manner in which the abdominal and pelvic viscera are maintained in their normal positions. The uterus is regarded as kept up by atmospheric pressure, assisted by certain peritoneal folds and muscular ligaments. No mention is made of the fibrous supports derived from the pelvic fascia nor of the action of the pelvic diaphragm. The kidney is regarded as kept up by the fat bed in which it lies, but no allusion is made to its normal respiratory movements; the liver is regarded as suspended from the diaphragm by venous, fibrous, and peritoneal attachments, no mention being made of the support derived from the belly wall through the other abdominal viscera. The action of the musculature of the body wall receives the briefest notice. We find ultra-refinement in the details of applied anatomy, sometimes coupled with the omission of an important point. The student is advised to spare the arteries to the parathyroid bodies—arteries which are difficult to find and see in a specially prepared cadaver, while in the operation for varicocele he is not warned that the spermatic artery may be ligatured along with the veins. The frequency of appendicitis is explained by the usual double assumption that the appendix is a vestigeal organ and that vestigeal organs are very liable to inflammation—assumptions which, although widely accepted, have no basis in fact. Coxa vara is regarded as a lesion due to rickets in adolescents —a hypothesis that will not find universal support.

Perhaps all these are rather the faults of text-books in applied anatomy in general than of this one in particular, so that in a way Professor Woolsey could find authority for all of what he has written. But opportunities of the interchange of knowledge are now so frequent that it behoves every author of a systematic work to test his general statements rigidly, lest he should, if only out of reverence for his predecessors, be perpetuating errors. Yet we are happy to end as we began by saying that the book is on the whole a good one.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pædiatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, and Hygiene, by Leading Members of the Medical Profession throughout the World. Edited by W. T. LONGCOPE, M.D., Philadelphia. Vol. II., Nineteenth Series, 1909. London and Philadelphia: J. B. Lippincott Company. Pp. 300.

THIS volume of these well-known Clinics opens with an excellent article on Immunisation against Typhoid Fever, a study of preventive inoculation, by Dr. Harlan Shoemaker of Philadelphia, who pays a full tribute to the inventive genius of Sir A. E. Wright. The statistics brought forward are most convincing of the great benefit of the proceeding, and bring out the important fact that those inoculated once suffer more than those inoculated twice, and the latter more than those inoculated three times. With regard to the duration of immunity, it would appear that this is lost one year after the inoculation; other points are that complications are twice as frequent amongst the uninoculated, and that the course of the disease is much more favourable amongst the inoculated. The experience in India is also in the same direction. This valuable article also deals with the preparation of the vaccine, its preservation, and its mode of administration. Dr. L. Louis Fletcher contributes an excellent lecture on Pneumonia in Children, which is followed by one on Psychasthenia by Dr. Bradford C. Loveland. In his lecture on Tuberculous Sero-fibrinous Pleurisy Dr. Herman B. Allyn goes very thoroughly into the question of diagnosis and draws especial attention to the value of Grocco's sign; he regards this sign, together with the moveable dulness and displacement of organs, as the three most trustworthy evidences of fluid in the pleural sac. The author holds the tubercle bacillus to be the cause of pleurisy in from 40 to 60 per cent. of all cases.

Dr. F. Parkes Weber contributes an excellent article on Congenital Familial Splenomegaly with Chronic Acholuric

Jaundice. This is followed by Dr. Edward F. Wells on Diabetes, who points out that glycosuria and diabetes are not synonymous terms. The different tests for sugar in the urine that he has found most satisfactory are Haines's test, the phenylhydrazine, Rubner's, the fermentation, Purdy's, Legal's, Gerhardt's, and the polariscope tests. All are succinctly described. The article concludes with the diagnosis, prognosis, and treatment of the disease. The author describes various diets—viz., the diagnostic, a strict routine, and a moderate routine diet. For coma, when it has developed, he recommends bleeding the patient to from 24 to 32 ounces, then introducing intravenously an equal amount of a 2 per cent. solution of bicarbonate of soda in normal salt solution, and repeating this in a few hours.

In the section on Surgery we find a full and complete article on Congenital Idiopathic Dilatation of the Colon, by Mr. P. L. Daniel, and on Surgical Pneumothorax as a Treatment for Phthisis, by Dr. F. Dumarest. Next to these comes an excellent *résumé* of the present status of the Cammidge Reaction by Dr. Edward H. Goodman, who presents us with a compilation of recent work along clinical, chemical, and experimental lines. As the result of his review of the subject Dr. Goodman concludes, amongst other points, that the clinical value of the reaction seems assured, that it is almost constantly associated with lesions of the pancreas, and that, although the test is not pathognomonic, yet, taken in connexion with the clinical history and other laboratory findings, it is strongly suggestive of pancreatic disease.

Dr. H. Schwatt follows with an article on the Treatment of Abscess in Hip Disease, with a report of cases, in which he details the general consideration of the question of infection with pyogenic organisms. With regard to the question of prompt evacuation as soon as a tuberculous abscess becomes palpable, he thinks that there is no rational explanation of any advantages to be derived from indiscriminate operative interference, and that the procedure must be considered as unsound and dangerous for the following reasons: a considerable number of these abscesses remain quiescent and become aborted; retention of the caseous material does not impede the progress of repair, nor does evacuation of pus promote the progress to recovery; and the sterile abscess does not constitute a grave danger in well-managed cases. He regards absolute non-interference as a more rational mode of procedure than indiscriminate operation, although the former is by no means applicable to all cases. The various methods of operation where this is carried out are described, and then this exhaustive paper concludes with a summary of cases. This article will well repay perusal.

The other departments of medical science and practice receive their due acknowledgment, and the volume concludes with an excellent chapter on the Pathogenesis of Spontaneous Cerebral Hæmorrhage, by Dr. A. G. Ellis.

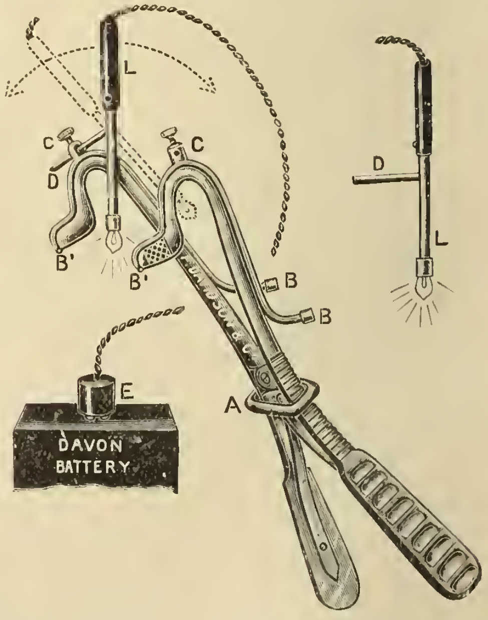
Text-book of Diseases of the Nose, Throat, and Ear, for the Use of Students and General Practitioners. By F. R. Packard, M.D., Professor of Diseases of the Nose, Philadelphia Polyclinic Hospital and College, &c. London and Philadelphia: J. B. Lippincott. 1909. Pp. 369. Price 15*s*.

The first chapter of this useful work is devoted to the methods of examination of the nose, throat, and ear, and the next to the application of remedies to diseased conditions. Under the former we have a brief dissertation on tuning-fork reactions, consisting chiefly of descriptions of well-known tests. The advice that in introducing a laryngeal mirror it should be carried back until its "tip is beyond the uvula" seems a little difficult to comprehend. The warning that unless care be taken when using hydrogen peroxide in suppurative otitis media some purulent material may be driven into the mastoid cells is possibly called for, but certainly some indication should be given as to suggested precautions. The description of the anatomy of the parts contains some interesting matter; but the note that the anastomosis between the veins in the anterior part of the nose and those of the integument affords the explanation of the redness of the nose seen in congestive disorders of the nasal chambers should have been placed under diseases of the nose. The cricoid is spoken of as the keystone of the larynx, whereas a keystone is only found in an arch. Under diseases of the nasal mucosa atrophic rhinitis is spoken of as an inflammatory disease, and we are told that when aural trouble is associated with it the outcome is occlusion of the tubes, the "result of nasal obstruction," a condition not frequent in atrophic rhinitis, to say the least of it. While it is easy to make critical remarks on details we see that when the author has spent a little time in correcting the minor errors, which are so freely scattered through this book, he will render it a useful guide to the post-graduate; at present it misses this object, possibly on account of the want of a friendly proof reader and a little rigid editing from the author.

New Inventions.

AN ILLUMINATING MOUTH GAG.

Two difficulties with which the surgeon may have to contend when operating inside the mouth are the want of space and light. The first of these is obviated by Hewitt's ingenious device of carrying the chloroform tubes along the arms of the gag, so that a separate tube for the anæsthetic is not required, and the surgeon can therefore have all the space inside the mouth to himself. To overcome the second difficulty I have had attached to Hewitt's gag (which not only by virtue of its chloroform tubes, but in other respects,



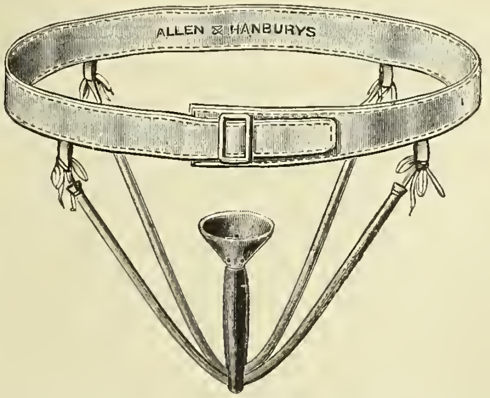
Hewitt's mouth gag with electric light. A, Moveable ring for fixing arms of gag. B B, Tubes for conveying chloroform into the mouth. B' B', Openings of chloroform tubes inside the mouth. C C, Sockets with clamping screws, into either of which the rod D can be placed, so that the light L can be turned either to the right or left. E, Connexion to Davidson's Davon Battery.

I consider to be the best of all mouth gags) a little electric light. This is so arranged that it can be fitted to either arm of the gag and turned to the right or left side as required, and it enables the surgeon to get a good view of the whole of the inside of the mouth. The light is supplied by the "Davon" battery, which is an extremely handy and portable form of battery, and which lasts about ten hours. Being removeable it enables the whole of the gag to be sterilised by boiling. The accompanying illustration shows the main features of the gag as thus modified, and I need only add that Messrs. Davidson and Co., of 29, Great Portland-street, W., having taken the greatest pains, have been most successful in carrying out all the suggestions I have made to them in regard to it.

Wimpole-street, W. CECIL H. LEAF, F.R.C.S. Eng.

A RUBBER CUP PESSARY.

THE figure illustrates a very useful pessary, a rubber cup with vulcanite stem which Messrs. Allen and Hanburys have made for me. It is more easily introduced than the vulcanite cup and it gives more to the movements of the body. The all-rubber instruments are apt to double up with a heavy uterus. I have used these pessaries for some years and have found them most satisfactory.



J. H. DUDGEON, L.R.C.P. & S. Edin.,
Honorary Surgeon, Workington Infirmary, Cumberland.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 11th, 1832.

WESTMINSTER MEDICAL SOCIETY.

Saturday, February 4, 1832.

Dr. SIGMOND in the Chair.

CLASTIC ANATOMY.

PROPOSALS TO TEACH ANATOMY BY MEANS OF SOLID PIECES CAPABLE OF BEING MOUNTED AND DISMOUNTED.

THE attendance at this Society is very variable, sometimes flagging for two or three successive evenings, when the room of meeting again becomes crowded with members and visitors. The assemblage to-night was very numerous: the "Anatomy Petitions" lay on the table for signature, and might have been the cause of attraction. Whatever was the reason, however, few could have departed displeased with the evening's recreation. On entering the room we found preparations making for displaying to the Society a work of art, the ingenious inventor and constructor of which, Dr. Auzoux, was present. This work of art was an ARTIFICIAL HUMAN BODY, which being now brought forward and placed upon its frame, attracted the eager attention of those present.

Mr. COSTELLO, as a friend of Dr. Auzoux, introduced the "subject" with some appropriate remarks.

Amongst the many scientific gentlemen whose minds had been directed to the furtherance of anatomical studies by the construction of artificial bodies, Dr. Auzoux was one who from his youth had seriously entertained the design, which was now brought to so satisfactory a conclusion. It was a singular fact, that the original accomplishers of two grand features in modern surgical improvement, Dr. Auzoux and M. Civiale, were fellow-students, intimate friends, each of whom, however, looked upon the other's peculiar scientific *penchant* as an illusion incapable of realization. After many years of laborious trials and patient investigation, and after presenting to the world two or three specimens, Dr. Auzoux had at length produced the present, which was so accurate in its bearings, and so comprehensive in its details, as to render it of the utmost value to the student and the practitioner, and deserving the attention of the legislature, especially at a time when the question of anatomical study was beset with so many difficulties.

Dr. AUZOUX has taken for his model the frame of an athletic man of tolerable height, the muscles being fully and beautifully developed. The position is well chosen, and, the feet being fixed firmly on a wooden frame work, admits of the manipulation requisite for the study of the figure. The integuments are absent, and the first layer of muscles is exposed to view as if cleanly dissected for a "demonstration." These however are removed separately with the greatest facility, so as to reveal, layer after layer, the various aspects of the parts—muscles, tendons, bones, &c., being coloured after nature. To the different members are attached labels having reference to a synoptical table, bearing the name of the organ, and pointing out the extremity by which the displacement is effected. It afforded us great pleasure to observe the facility with which the *dissection* might be accomplished, and in some parts the *tout ensemble* of the "region" was striking for fidelity of imitation, and, as far as we could observe, perfect accuracy of execution. As instances, the inguinal, abdominal, and cervical regions, may be selected as excellent, whilst the view of the posterior parietes of the chest, the internal structure of the heart, kidney, &c., deserve similar commendation. The textures of the organs have been well imitated, so as indeed not to be mistaken; but in this respect, we think, a much nearer approach may be made to the bona-fide structures of the human body. Not a small advantage of this invention is the durability of the material of which the model is composed. Admitting at first of being moulded into any shape, it acquires the hardness of wood, so as to render the handling of the parts totally free from danger of injury; and the whole figure is constructed of the same composition. Some time was taken up in the exhibitions repeatedly eliciting the warm admiration of the members, which, in conclusion, was testified by an unanimous vote of thanks to Dr. Auzoux.

Dr. SIGMOND, therefore, in the name of the Society, returned thanks to the talented foreigner, who requested Mr. Costello to express his acknowledgments.

The different pieces of the model require but a few minutes to put them together again, although the parts amount, we believe, to one hundred and twenty-nine.

Dr. AUZOUX, in reply to a member, stated that the price of such a model was 3000 francs, or 125*l.*

Dr. BLICKE thought it incorrect to designate this invention as "new." He had seen the same kind of thing in wax many years ago in Germany and Italy; but (in answer to a query) such preparations were kept in glass cases, though they might be handled on particular request.

A GENTLEMAN observed that he had also seen similar models in Bologna, but by no means so perfect, and in wax.

[Dr. Auzoux's model has just been purchased for the King's College.[1]]

---

[1] In THE LANCET of May 29th, 1909, p. 1551, an excerpt under the heading of "Looking Back" relating to other "anatomical and obstetric machinery" contained also a short reference praising the anatomical machines invented by M. Auzoux, further particulars of which are now given in the current number of THE LANCET selected from the issue of 78 years ago, of the corresponding month and week.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 12, 1910.

Education and the Sex Question.

Eugenics and Galton have become inseparable in our minds, and there can be little doubt of the magnitude of the debt which future communities will owe to Sir Francis Galton for the perseverance with which he has dwelt upon the duty of taking thought for the quality of offspring. As a matter of fact the word which he chose for the title of his new science was previously well established in application either to mere fertility or to the condition of hybrids capable of breeding, but Galton's later employment of it is being sanctioned by usage, and is receiving general assent both in this country and in the United States, where the welfare of future generations is already obtaining even more consideration than among ourselves. But on the practical lines to which we are perpetually calling attention, our Education Department is making the best provision in its power for the promotion of the healthy development both of the minds and of the bodies of the children of our nation; and we are indebted to the more immediate followers of Sir Francis Galton for the publication of the *Eugenics Review* with its contained definition of eugenics as "the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or morally." The *Eugenics Review* is published by the "Eugenics Education Society," which has its home in the Adelphi, and which puts forth a list of vice-presidents and of council in which the names of many persons of eminent rationality occur. The number before us completes the first volume, and contains an interesting article on Eugenics and Pauperism, by Sir Edward Brabrook; on Education in Sex Hygiene, by President G. Stanley Hall; on Venereal Disease, by Mr. J. Ernest Lane; on Eugenic Ideals for Womanhood, by Miss Alice Ravenhill; and on Primitive Eugenics, by Mr. A. E. Crawley. There are also certain editorial notes, in one of which at least the writer has suffered enthusiasm to carry him beyond proper limits. He informs us that a certain Bishop is "well known" as "the most enlightened of the Episcopal Bench." We have no doubt of the enlightenment of the right reverend prelate in question, and have nothing but praise for the part which he has taken in the promotion of physical culture, but the degrees of enlightenment which may be claimed for the several bishops are in reality "well known" to nobody, and we entirely dissent from the propriety of an endeavour to award the palm to any individual of an eminently sagacious, venerable, and distinguished body.

The most important paper in the present number of the *Eugenics Review* is unquestionably that upon Education in Sex-Hygiene by G. Stanley Hall, President of the Clark University, Worcester, U.S.A., which raises the question of how far, and in what manner, children should be instructed in sex questions by parents or teachers. For reasons which we cannot entirely explain, but which are no doubt dependent upon differences in social life or circumstances, or which arise out of the co-education of the sexes, so much more usual in the United States than with us, this question appears to be regarded as a pressing one upon the other side of the Atlantic, and we find strong opinions expressed with regard to it by American medical writers, more especially in a recent work on "Medical Sociology," by Dr. J. P. Warbasse of New York, surgeon to the German Hospital there. We imagine that, with us, it is usual to allow children of both sexes to grow up with very little direct reference to sex subjects, and that, as far as boys are concerned, they learn almost nothing from the great majority of parents and not much from the well-meant endeavours of many school-masters. But little more is done in the same direction in girls' schools by the teachers, or by the ordinary mother with her daughters; and in this country the education of both sexes is much upon the same level in respect of such matters, so that both girls and boys learn more about sexual relations from other young people than from their elders. Natural or even irrepressible instincts lead to the development of an active curiosity on such questions, and both girls and boys, if the subject be tabooed by their parents or by the elders with whom they are on a social equality, will be likely to seek for information from their contemporaries, when the diffusion of knowledge comes from those boys and girls—much more commonly found in the lower classes who have been freed from artificial reticence about matters with which an overcrowded home has rendered them precociously familiar. But regarded purely from sanitary aspects, have we any reason to believe that either premature familiarity or delayed knowledge is calculated to exert any calculable influence, either for good or for evil, upon conduct, and through conduct upon health, in such a manner or to such a degree as would require medical practitioners to take a definite side, and to pronounce authoritatively either in favour of or against what may be described as systematic teaching on sex questions? We greatly doubt whether any definite effects are traceable to the conditions of the many respectable cottage homes in which children of both sexes live and play together absolutely without reticence; and no amount of instruction in sexual matters can prevent growing boys from feeling some interest in their sexual development, as in the development of their muscles. How far such conditions lead to evil, and how far it can be prevented by admonition, are both, we think, exceedingly difficult questions; and those who are as apprehensive of the effects of designed instruction in sexual matters as of complete ignorance with regard to them are not without a show of reason. With regard to girls, it is at least certain that they should be prepared for the occurrence of menstruation; and with regard to girls and boys it is clearly necessary that the necessity for cleanliness be impressed upon them from infancy, but, beyond these two points, we can lay down no general rules. A parent or elder brother or sister might be expected to give under the stimulus of some favourable opportunity, or of some question which admitted of an explanatory reply, information as full as seemed desirable, but how full this should be must, we think, be left to individual discretion. The one thing necessary is that the parents should not shirk the responsibility of warning the children if the particular circumstances seem to demand it, and here the medical profession can be relied upon to give discreet assistance.

Both Mr. LANE in the *Eugenics Review*, and Dr. WARBASSE in some passages of his book, lay much stress upon the dangers of syphilis and gonorrhœa, and draw vivid and only too truthful pictures of the consequences which are likely to follow from neglect of them. We do not think that boys are, as a rule, ignorant of these dangers, although their information may be extremely vague and in many respects inaccurate. As long as opportunities are to be encountered commonly, so long is the combination of curiosity with an impelling instinct likely to induce a considerable proportion of young men to seek personal knowledge; and we do not believe that a more precise knowledge of the risks attendant upon venereal disease would serve in any great degree as a deterrent. The knowledge that such risks exist, although far from being accurate, is at least widely diffused, and opinions differ as to its restraining power. No pains are spared to instruct young soldiers concerning the dangers of illicit intercourse; and the wards of a military hospital furnish a commentary upon the value of the teaching, which would be sadder were it not that at last improvement in the morals of the men can be shown. But his knowledge does not induce the young soldier to avoid the dangers of which he has been warned; it renders him ready or even anxious to submit to treatment. And even the loudest alarmists on these subjects must be compelled to admit that recent years have led to greatly increased certainty and success in the absolutely curative treatment both of syphilis and of gonorrhœa; insomuch that the long list of evils set forth by Mr. LANE and Dr. WARBASSE are now less to be attributed to the infection itself than to neglect of it. Surely the best knowledge on the subject which a boy can possess is that such disease, however serious it may be, is curable if taken in time, and that nothing but neglect need render him a source of danger to a future wife, or to his children yet unborn. Dr. WARBASSE strongly advocates public interference with marriage in the direction of requiring a clean bill of health both from the intending bride and bridegroom before the ceremonial is permitted to proceed. We cannot say, of course, how far such a procedure might commend itself to public opinion in the United States, but in this country we are certainly not ripe for such a proposal; and, speaking generally, we think that the advocates of eugenics will obtain a more favourable hearing, alike from the public and from the medical profession, if they will apply themselves to other aspects of the subject on which they desire to diffuse enlightenment.

The Vaccine Treatment of Periodontal Disease.

DURING the past few years certain diseases of the mouth, and more especially periodontal conditions, have attracted considerable attention, owing to the growing belief that they are the cause of the various constitutional symptoms with which they are frequently associated. The possibility that pyorrhœa alveolaris was the result of a bacterial infection had long been recognised, and in 1906 the use of bacterial vaccines was extended by Mr. K. W. GOADBY to the treatment of this disease. At a recent meeting of the Odontological Section of the Royal Society of Medicine, further papers were given by Mr. GOADBY and by Dr. J. W. H. EYRE and Mr. J. L. PAYNE upon the vaccine treatment of periodontal disease. Constitutional symptoms were present, not only in the severe, advanced cases described by Dr. EYRE and Mr. PAYNE, but also in the early cases referred to by Mr. GOADBY, and in both sets of cases treatment by appropriate vaccines in addition to local treatment was said to have effected either a complete cure or a very marked improvement. The discussion which took place on these papers made it clear, however, that a wide divergence of opinion exists among dental surgeons both as to the nature of the disease implied in the term pyorrhœa alveolaris and as to the value of vaccine treatment. Some define periodontal disease as a chronic progressive destruction of the tooth socket commencing at the gum margin, and accompanied, sometimes in the early stages and invariably in the later stages, by pus formation; they regard the condition as a purely local one due to injury of the tissues by fermentative changes in stagnant material. Others, including Mr. GOADBY, consider that the disease is of bacterial origin and leads to general symptoms almost from the very outset; and apparently they include all acute infections of the gum margin as cases of pyorrhœa. It is generally admitted that advanced periodontal disease, accompanied by pus formation, may lead either to the absorption of toxins from the pockets or to the swallowing of pus which sets up gastritis, and that in these circumstances pyorrhœa may actually cause rheumatic pains, anæmia, and other general symptoms. But those who believe that pyorrhœa is primarily a local disease upon which a bacterial infection may subsequently be grafted do not regard such constitutional conditions as dyspepsia or anæmia as having any relation to the local disease of the mouth, when they occur in patients suffering from early pyorrhœa.

Slight pyorrhœa occurs with extreme frequency, so that it is not surprising that a considerable number of such cases should show some deviation from health; but there is at present no sound evidence that symptoms of general ill-health are met with more often in individuals affected with early pyorrhœa than among those whose mouths are healthy. The uncertainty which still exists as to whether periodontal disease is primarily a local injury of the periodontal tissues, or whether it is from the first a bacterial infection, has not been removed by the results of vaccine treatment. It is evident that purely local treatment should be adequate for a purely local lesion, whereas it might not suffice for the treatment of general symptoms secondary to local disease. Many surgeons maintain that the results of local treatment alone, even in cases of advanced pyorrhœa and in the presence of constitutional symptoms, are quite as good as those effected by the addition of vaccine treatment; and that purely local treatment will cause not only improvement in the condition of the mouth but also disappearance of the general symptoms of ill-health seems undoubted. Up to the present vaccine treatment has always been employed in addition to local treatment, and no observations on the treatment of pyorrhœa by vaccines alone have been recorded. Nor has it been shown by the comparison of a number of cases that the use of vaccines either hastens the cure of periodontal disease or renders it possible to cure cases which are not amenable to local treatment alone. It seems likely that in advanced cases of pyorrhœa accompanied by definite constitutional symptoms the employment of vaccines may quickly raise the resistance of the patient to infection, and thereby enable him to respond more rapidly and more readily to local treatment; and the excellent results yielded by vaccine treatment in such cases support this view. With this exception, there is no general consensus of opinion that the addition of vaccines to the local treatment of periodontal disease appreciably increases the likelihood of a cure; and until dental surgeons come into accordance upon this matter and also upon the pathology of pyorrhœa, and the meaning attached to the term "cure," the value of vaccines for the treatment of periodontal disease must remain *sub judice*.

◆

The License of Quackery.

FROM time to time we comment in THE LANCET upon cases to some of which publicity has already been given in the lay newspapers, and which illustrate the results arising from the practice of medicine and dentistry by unqualified persons. The comments of the medical press and the reports in our contemporaries may not appear to diminish the stream of patients ready to be lured into danger by specious advertisements, but we have reason to know that in the long run publicity of an undesired sort has its influence for the general good. The cases in question are usually divided under the existing and defective law which governs such matters into two classes. There are proceedings of what may be termed a semi-criminal sort where a man who is not upon the Medical or Dental Register pretends in some way that he is duly registered. He is liable to penalties of a limited character for deceiving his patients into believing that they are being attended by a qualified medical practitioner or dentist. The law is apparently intended to this extent to protect the public; it has, however, as a rule, to be set in motion by combinations organised by the medical and dental professions, so that instead of the State employing a solicitor and briefing counsel to prosecute after setting its agents to collect proof of the offence, the Medical Defence Union or the London and Counties Medical Protection Society finds itself in the position which the Treasury ought to occupy. Criminal proceedings of a somewhat different character are taken when a charlatan extracts money from his victims by clumsily framed assertions of his powers, and thereby allows himself to be convicted of obtaining money by false pretences. These latter cases are, however, rare, because the individual victims are slow to complain, and because when they do they find that the law relating to obtaining money by false pretences allows many and wide loopholes for the escape of the accused. It is to be pointed out that this latter example of legal protection has no direct relation to the medical pretensions of the person who may be charged. The victim has to seek for assistance from the police not because his bodily health has been injured or threatened, but only if and because an attempt has been made upon his pocket.

The second class of legal proceeding to which we have often referred is the civil action for damages, brought on the ground of negligence against a person who in treating the plaintiff has inflicted injury upon him. Here the complaint is left to be made by the person injured. He may bring an action at his own risk if he can afford to do so, and if he succeeds in it he may, or may not, secure compensation, according to the extent of the pecuniary resources of the defendant. Examples of this latter form of legal proceeding will be found on another page, the defendants in both instances given being a firm or firms practising what passes as dentistry among a class of patients likely to be attracted by alluring advertisements of different kinds. The cases described, and others of which particulars have recently been published in THE LANCET, convey a fair idea of the terrible pain and suffering to which the working classes are exposed by the absolute refusal of the legislature to intervene on their behalf in the situation. The patient is left by the State to take his chance. If his jaw is broken or if the dragging out of a dozen teeth by an untrained hand causes him serious injury, he may try his fortune in the county court, where, if the defendants happen to be solvent, he may recover damages together with costs sufficient to cover part of his expenditure upon legal assistance. If he loses, so much the worse for him; if he wins, lucky he if he gets the awarded damages. It is often alleged that in asking that the legislature should check and, as far as possible, abolish unqualified medical practice, the medical profession is merely asking for protection for itself. We do not for a moment suggest that the medical profession does not deserve protection from the competition of quacks: we do not admit any doubt that as an act of justice such protection should be accorded to it. We assert, however, that the interest of the public is rightly paramount in the matter, and that consideration for the safety of the men, women, and children who are the victims of the charlatan should supply the impulse and guide the aim of the legislature in effecting any change.

A case is recorded in THE LANCET this week in which a man was sentenced to pay a fine, with the alternative of a short term of imprisonment, for certain offences which he had committed because he imprudently allowed himself, or caused himself, to be mistaken for a medical practitioner. One of his patients died and he played the part to the end, signing what purported to be a certificate of the cause of her death. This was an offence against the law; the fact that the person in question attended a woman who was seriously ill and pretended to prescribe for her would probably have passed unnoticed if she had recovered, and the whole proceeding was only illegal in that the husband was caused to have the impression that his wife was being treated by an "ordinary doctor." It hardly seems necessary to labour the points made after citing such an example. We claim that the public should be protected on public grounds. The section of the public which would be interested in any legislation restricting quackery may not ask for protection or even desire it, but this does not affect the question. Lotteries were not suppressed because gamblers asked to be relieved from temptation to speculate in them. The saner portion of the community saw that it was desirable to protect those who were too weak to protect themselves. Public-houses are not subject to regulation because the people prone to drink in them to excess have asked that their favourite liquors should only be obtainable during certain limited hours and under certain conditions of taxation and licence. Those frequenting public-houses have been protected against themselves. Members of the classes most affected for their own good by sanitary legislation are frequently the most difficult persons upon whom to enforce it, and yet sanitary legislation has made enormous progress upon the advice and under the guidance of the medical profession, and in spite of the fact that that profession has incidentally profited by emoluments arising out of the legislative promotion of sanitation. The position with regard to quackery is analogous.

Annotations.

"Ne quid nimis."

THE BOY SCOUTS.

THE announcement that Lieutenant-General Sir Robert Baden-Powell is about to give up his commission in the army in order to devote more time to the development of the Boy Scout movement, which he initiated in 1908, is not without medical interest. From not only a national point of view, but also from a purely medical or health aspect, it must be generally admitted that General Baden-Powell's scheme of scouting for boys appears to rest on a firm and sound basis, which, if properly handled, will possibly prove of very great benefit to the nation. No normal British boy can fail to be attracted by the movement, and the idea of scouting with its promise of adventure and of heroic exploits by flood and field tends to develop in young growing lads the use of their powers of observation and the love of honour, chivalry, and nature. "Catch the boy and make the man," has been General Baden-Powell's dictum, and we thoroughly agree with him. Even if the scouting taught is elementary and if to the cynical it may appear to have too much of the "make-believe" (without which, we imagine, life would be intolerable), yet it must serve a purpose in that it fosters that admirable love of adventure which has made the British nation the first colonising power in the world. The Boy Scout should not be regarded as merely a youth who wears a picturesque costume and who carries a long pole, he is in reality a unit of a big brotherhood which in the future may well serve its country. The elasticity of the organisation is one of its leading features. The general training has very wide limits. The headquarter staff, while ready to help local branches when asked to do so, does not otherwise interfere, and local officers are practically at liberty to make their own modifications of the official manual, "Scouting for Boys," written by the founder of the movement. Although a little less than two years in existence, the Boy Scouts now number more than 130,000 in this country, and their ranks are swelling every day. Branches have also been formed in the colonies. Passing to the purely medical aspect of the movement, we have no hesitation in supporting what must be an important medical asset to the nation—namely, the cultivation of health and physical development. The outdoor life and manly exercises followed by the Boy Scouts, whether in the open country or our public parks, are practices which keep them in the fresh air. The training of eye and mind to observe and develop their faculties and judgment is bound to be useful. The South African war amongst its many lessons taught our troops, born and reared in cities, that the Boers were their superiors in the craft of observation and in resource. We now know that our late foes learnt much of this craft in their teens, the popular and possibly true example given being that as boys they were, after having been taught to shoot, turned from their father's roof with a rifle and a single cartridge and told not to come back until they had provided a dinner in the shape of a springbok. Something of this spirit may be inculcated by the Boy Scout movement. The physical exercises and drills which the Boy Scouts undergo in their drill-halls should also help in developing their physique—a matter of national importance. Our only comment is that these should be conducted under some regular medical supervision, and parents and others should, we think, without any undue coddling of their boys, take the advice of the family medical practitioner as to the quality and quantity of hard physical training which their offspring are physically fit to undergo. Most public schools nowadays allow the value of this precaution.

THE HONG-KONG UNIVERSITY.

THOSE who are interested in the spread of Western medicine in China will remember that last year a Chinese Emergency Committee was formed at the Mansion House with a view of raising a large fund for the establishment of Western Colleges for the Chinese.[1] At the time that this committee issued its appeal we welcomed news from Hong-Kong, stating that Mr. H. N. Mody, a prominent resident, had offered the funds necessary to build a suitable local University which was to start with the two Faculties of Medicine and Applied Science (Engineering), provided that a sufficient sum for endowment were forthcoming, and we expressed a hope that the scheme would not clash with the efforts of the Emergency Committee. We are glad to say that Mr. Mody's generous gift has now been definitely accepted. At the last meeting of the University Committee held in December, under the chairmanship of Sir Frederick Lugard, Governor of the colony, the adoption of a site recommended by a subcommittee was approved and a recommendation for its enlargement by the inclusion of four acres of hillside was forwarded to the Secretary of State. It was also determined: (*a*) The students should not reside in the main University building, which should be entirely devoted to educational purposes—e.g., to lecture rooms, laboratories, workshops, libraries, &c.; and (*b*) that the buildings to be now erected should be designed to contain sufficient accommodation to give 500 students a full course in arts, medicine, and engineering, and to house from 150 to 180 students. The educational buildings are to be capable of expansion so as to provide room eventually for 1000 students, and the residential quarters are to accommodate 500 students. The following letter from Mr. Mody to the Governor was read in confirmation of his generous gift:—

---

[1] THE LANCET, vol. i., 1909, p. 995.

Victoria Buildings, Hong-Kong. 8.12.09.

DEAR SIR FREDERICK,—In reply to your letter of to-day I have pleasure in confirming my verbal authority to you to inform the committee of the University Fund that I accept the design now submitted by Mr. Bryer, and undertake to erect the buildings and to lay out the ground as shown thereon. As the original plan agreed to by the committee was estimated to cost only $180,000, which was subsequently raised by alterations to $235,000 and now again to $285,000, I trust that this last set of plans will meet with the approval both of yourself and the committee and be adopted as final.—Yours very sincerely,

H. N. MODY.

Sir Frederick J. D. Lugard, K.C.M.G., &c.

The committee unanimously decided to accept Mr. Mody's gift unconditionally. The plans referred to, signed by Mr. Mody and by the Governor, will be deposited with the archives of the University. At the same meeting it was announced that "H.M.'s Government had decided that on the establishment of the University they would provide an annual sum of £300 for scholarships ...... subject only to the provision that the holders are to be British subjects." The Secretary of State, in the despatch conveying this information, added that His Majesty, as a mark of his "personal interest" in the University, had been graciously pleased to direct that the holders should be styled "King Edward VII. Scholars." The committee unanimously recommended that the scholarships should be open to all British subjects. Subsequently the chairman stated that the Endowment Fund now amounted to $1,183,640. Dr. Ho Kai pointed out that in addition to this there is a sum of $32,200 definitely promised from Canton, which could be relied on, together with an additional sum of $3000 from Saigon. In view of the fact that the minimum amount laid down in Resolution 1 for the endowment fund may now be said to have been obtained, and as the designs for the building have now been approved by the committee and by Mr. Mody, it was unanimously agreed that the work should be commenced. It should be added that the success of the scheme has been largely assured by the munificent endowment of £40,000 made by the firms controlled by Messrs. John Swire and Sons, and as this gift was largely due to the personal interest of Mr. J. H. Scott, the chair of engineering is to bear his name. The buildings themselves will form Mr. Mody's lasting monument.

A METHOD OF DESTROYING TSETSE FLIES IN A LOCALITY.

IN the January *Bulletin* of the Sleeping Sickness Bureau a summary is given of the report of the Portuguese Commission and the measures for suppressing sleeping sickness in the island of Principe. In this report a description is submitted of a novel method for reducing the tsetse fly pest in that colony. It appears that M. Maldonado, the manager of one of the estates, had noticed the frequency with which these insects settled on the backs of labourers who were engaged in mowing grass, and who were consequently working in a stooping position. He therefore conceived the idea of making his labourers thus engaged wear on their backs while at work a black cloth coated on its outer surface with a glutinous substance. The glossinæ are known to have a preference for alighting on a black surface; and if this be rendered sticky the fly as soon as it alights is made a prisoner and cannot escape. It is stated that during a period extending over some months, during which a strict record was kept, no fewer than 133,778 tsetse flies were thus trapped and destroyed. As a rule two labourers equipped in this way sufficed to clear off a large proportion of the flies from a plantation in a short space of time. After M. Maldonado had demonstrated the success of his method it was readily adopted with similarly successful results on other estates. During the first few days in which this method of trapping was in use the tsetse flies captured ranged in amount from 1500 to 2000 a day, but in a week the daily number secured fell to 15 or 20; at the same time the comparative absence of the insects about the plantation was very noticeable. The method is obviously more likely to yield good results on an island like Principe, where the local glossinæ cannot be reinforced by others from adjacent districts, as might happen on the mainland. *Apropos* of the tsetse flies, we have received two skeleton maps issued by the honorary managing committee of the London Sleeping Sickness Bureau, the first of which shows the distribution of sleeping sickness and all species of glossina in tropical Africa, and the second that of sleeping sicknesss and glossina palpalis alone. It is admitted by the committee that the information given on the maps is sketchy, because only undoubted records of the occurrence of these flies are charted. It is hoped, however, with the receipt of further trustworthy reports to fill up rapidly the blanks on the maps. Some notes are added on the different species of tsetse flies, as well as on the distribution of sleeping sickness and tsetse flies in Africa. A list is likewise given of the papers from which the data were collected. For the assistance of those likely to send reports on the subject to the Sleeping Sickness Bureau certain points are set out on which information is wanted, as also are the data which should accompany any specimens of tsetse flies that may be forwarded to the committee.

JANUARY AT HOME AND ABROAD.

THE chief feature of the weather of January in this country was its sudden and great changes of temperature. After the earlier half of the month had been generally mild a change occurred which culminated in heavy snow in most of the northern districts and a temperature by the sheltered thermometer such as is very seldom observed in any part of these islands. At West Linton (Peebles) the thermometer descended to 5° below zero, followed by a minimum of 4° below on the succeeding night, while at Buxton the thermometer fell to within 1° of zero. But in spite of the very cold spell the temperature for the whole month diverged little from the normal. The Scilly Isles enjoyed a higher mean temperature than the south and south-west of France and the north of Italy, while its nights were as mild as those at Naples, and only a degree cooler than those at Lisbon. The resorts on the mainland of the south-west and south of England, however, were all considerably cooler than Scilly, and did not compare so well as usual with the shores of the Mediterranean and Biarritz, although most of them were favoured with a more equable temperature. The great difference in the temperature of the day and night at Nice and Palermo is very striking compared with that on the south and south-west coasts of this country. For a temperature both mild and equable none of the southern places could compare with Malta, where the average afternoon gave a maximum of 58° and the average night a minimum no lower than 51°. The latter figure is 12° above the corresponding value at the Nice observatory and 11° above that at Biarritz. In comparing the continental capitals with London it will be seen that the temperature at Paris and in London was almost identical, while London was milder than Brussels and considerably milder than Berlin. Berlin was, however, much milder than usual for the time of year and for the second month was no colder than some places in the English midlands. North

Germany as a whole has really experienced no winter yet, as the word is generally understood in that region. At Berlin last month there were only three days with an afternoon temperature at the freezing-point or below it, and on many of the nights the sheltered thermometer remained some way above 32°. Falls of rain and snow were much more frequent in this country than in the south of Europe; Nice and Palma were fine and dry nearly throughout the month. There was, nevertheless, more sunshine than usual in many parts of the United Kingdom. In London (Westminster), where an average January gives no more than 19 hours, there were 35 hours, while along the south coast, where the weather was more than twice as sunny as in London, there was also a marked excess on the average.

—	Highest temperature.	Lowest temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature for month.	Mean range of temperature.	Number of days with rain.	Total fall in month.
	°	°	°	°	°	°	*	ins.
Scilly	53	37	50	44	46·7	6	21	2·68
Jersey	53	28	48	40	43·9	8	19	4·20
Torquay	56	24	47	37	42·2	10	19	3·88
Sandown, Isle of Wight	53	24	46	37	41·8	9	16	2·74
Weymouth	52	20	46	38	42·1	8	14	2·96
Bournemouth	54	18	45	36	40·7	9	14	3·28
Brighton	50	22	44	37	40·4	7	13	2·72
Bath	54	16	46	34	39·8	12	13	3·23
Buxton	52	1	40	30	35·1	10	20	4·08
Harrogate	53	14	41	32	36·2	9	16	4·10
Manchester	53	14	42	34	38·1	8	15	3·51
Nottingham	53	15	43	32	37·5	11	13	1·89
London	54	21	46	34	39·6	12	12	1·53
Paris	55	23	45	34	39·5	11	11	3·35
Berlin	49	21	40	32	36·0	8	12	1·44
Brussels...	51	23	42	34	38·0	8	17	2·33
Nice	68	30	54	39	46·2	15	3	1·14
Biarritz	57	28	52	40	46·2	12	10	3·59
Florence	57	26	49	38	43·3	11	8	5·59
Rome	59	30	53	41	47·1	12	6	1·82
Naples	60	36	53	44	48·6	9	? 9	? 2·61
Palermo	71	37	60	42	50·9	18	11	4·03
Malta	64	42	58	51	54·7	7	11	4·98
Palma (Majorca) ...	68	41	57	45	51·2	12	2	0·65
Algiers	66	41	60	47	53·9	13	8	5·59
Lisbon	59	39	55	45	50·3	10	8	1·19

* A day with at least 0·04 inch.

THE PATHOLOGY OF ADDISON'S DISEASE.

AT a meeting of the Pathological Section of the Royal Society of Medicine, held on Jan. 18th, Dr. Herbert S. French described a case of extensive yet incomplete fibrocaseous disease of both suprarenal capsules in which symptoms of Addison's disease were not present.[1] In the course of his remarks he stated that the interest of the case lay mainly in the fact that it afforded to some extent a natural experiment upon how much less than the normal amount of suprarenal gland tissue a full-grown human being might have without developing symptoms of Addison's disease. It must be here remembered that cases have been recorded in which after death the suprarenals have been found to be extensively destroyed by tuberculosis or new growth, in which, nevertheless, definite clinical symptoms of Addison's disease had been absent during life. Further, cases have occurred having the clinical characteristics of the disease in which caseation of comparatively small amount was found in the suprarenals after death, perhaps only in one; and, lastly, there have been cases indistinguishable from Addison's disease in which the suprarenal capsules themselves were healthy, although the surrounding sympathetic nerve plexuses and semilunar ganglia were implicated in dense adhesions or in a growth, such as lymphadenoma. In other words, although tuberculous lesions of the suprarenal bodies may give rise to the clinical phenomena of Addison's disease, the exact pathology of that condition is not known. Whether Addison's disease is due to an inadequate supply of adrenalin or whether it is an auto-intoxication due to inadequate excretory or antitoxic activity of the suprarenal bodies has been fully argued. The whole subject has been ably considered by Dr. H. D. Rolleston in Allbutt and Rolleston's "System of Medicine" (Vol. IV., Part 1, p. 395), where the author gives an excellent summary of the present knowledge of the subject. He is of opinion that Addison's disease is due to inadequacy of the chromaffin or adrenalin-secreting cells, which are chiefly situated in the medulla of the gland but are also found in connexion with the sympathetic trunks. He also believes that it is possible that there is a second factor at work—namely, irritation of the sympathetic nerves, which might be due to adhesions and invasion of the pericapsular nerves or ganglia or toxæmic in nature, due either to failure of a hypothetical antitoxic function of the cortex of the adrenals, or to disturbed metabolism resulting from absence of adrenalin. Dr. French's interesting case is one more proof that we have much to learn about Addison's disease.

MOROCCAN SAINTS.

THE Marabouts or Mussulman saints of Morocco seem possessed of many of the attributes of savage medicine men. It is curious indeed to find the Moors, who in Spain became the fathers of mediæval medicine, so retrograde in their original habitat in Northern Africa. The Marabouts, of whom an interesting account has lately been published by Professor Montet of Geneva, are supposed by their superstitious admirers and disciples to possess any number of miraculous powers. Their saintliness, which is often of the most lax and questionable order, confers upon them the power of becoming invisible, shot-proof, ubiquitous, or gaseous and luminous. After death miracles, especially those of healing, are worked at their tombs. Their relics perform cures and resurrect the dead, and the faithful, with a fervour peculiarly oriental, flock to their shrines to pray for health. Barren women and impotent men are especially devoted to this cult. The old or impotent men, presumably with large harems, address their prayers, we are told, to the relics of the holy Mogdoul of Mogador, who, according to Professor Montet, is a deified Scottish highlander, one Macdonald, who came as a renegade to Morocco as lately as 1760. Many of the Marabouts are doubtless epileptics. One such, notorious for his assaults on women, which were reverently screened by his admirers, is described at some length by the Genevan traveller, who quotes from the works of L. S. Chénier, a consul, author of "Recherches Historiques sur les Maures" (1787). This saint prefaced his outrages with convulsive movements. Often idiotic or epileptic themselves, these so-called saints are held to be sovran exorcisers of evil spirits or djinn (pl.). Near the tomb of Sidi Jacoub at Tlemcen there is a niche or small shrine called locally Bît-Djenoûn, the House of the Djinn. The guardian of this shrine informed Professor Montet that the evil spirits repaired thither, and that "the possessed," whom science regards as the epileptic, are wont to resort to the same place in order to be cured. The man possessed passes the night there, taking care to keep his head in the niche. In the morning, owing to the favour of Sidi Jacoub, the evil spirit is found to have departed out of the patient. "Spaniards," added the pious Mussulman guardian devoutly, "sometimes come here to get rid of djinn." This is credible enough, for the cult of tombs and relics is almost as prevalent in Southern Europe as in the East. It is remarkable in a society where women are held in subjection that there are female Marabouts who enjoy high consideration and are even more antinomian, more untrammelled in conduct and morals, than the men. Lalla Fatma, a celebrated Kabyle leader, has been charmingly described by Douttć at the time of her capture by the French in 1857. Despite her extreme *embonpoint* she had a noble countenance. Her dark eyes were rendered expressive by the abundant use of khol, her finger-nails were tipped with henna, and her dress and amulets suggested the picture of Rebecca in "Ivanhoe." Again, Lalla Imma Tifellout, after a youth of extreme asceticism, turned into a species of female ghoul, her amours causing the death of her victims. She, however, died a hermit, and is revered for her miraculous powers by the ferocious Beni Calah, whose great saint she is. The virtue of these barbaric saints resides in the humours of the body. The "baraka," or Divine grace, is transmitted through the saliva. Hence the Marabouts are in the habit of spitting into the mouths of their disciples in order to initiate them. This custom is probably pre-Mahomedan in origin, as is indeed the whole cultus of the Marabouts' tombs and shrines, which traces back to the anthropolatry of the ancient Berbers.

---

[1] THE LANCET, Feb. 5th, 1910, p. 368.

RECENT RESEARCHES ON THE CEREBRAL CIRCULATION.

When in 1874 Dr. Duret of Paris published his researches, long since become classical, on the cerebral circulation, medical knowledge of the topography and functional localisations of the cerebrum was rudimentary in the extreme. Professor Hitzig in Germany and Dr. Ferrier in England were just commencing those investigations which led directly to the discovery of a new domain in neuropathology. It is only since our knowledge of cerebral physiology and pathology has been placed on a scientific basis that we have learned that, as far as the brain is concerned, the nature of a lesion is of less clinical importance than its site. Whatever be the pathology of a given cerebral lesion, the symptoms remain very much the same if the same area be affected. We are learning, further, to think of cerebral symptoms in terms of arterial distributions. The careful and painstaking study, from the clinical and the pathological standpoint alike, of the results of circumscribed arterial disease, will afford more insight into cerebral localisation than that which is to be gained by an investigation of the effects of intracranial tumours, for instance, unless perhaps in the initial stages of the latter. It is pleasant to find, in the January number of *L'Encéphale*, a communication from Dr. Duret himself on recent advances in this connexion that is of considerable interest. Dr. Duret makes the pregnant suggestion that cerebral arteries should not be designated by the areas they supply, but rather by the organs they supply. Thus, instead of describing the various branches of the Sylvian artery as the anterior, middle, and posterior parieta arteries, &c., he suggests they should be known as the artery of the third frontal convolution, the ascending frontal artery, the ascending parietal artery, the artery of the angular gyrus, &c. In this way they are brought into line with the general nomenclature of arteries, such as the thyroid, the lingual, and the mammary arteries. Reference is made to the constant occurrence of certain anastomoses, and to their significance from the point of view of cerebral function. Thus, in the cortical centres for vision, the posterior branch of the anterior cerebral, the third branch of the posterior cerebral, and a twig from the terminal branch of the Sylvian, will always be found to anastomose freely. Another division of the paper deals with the vascular supply of the basal ganglia. Dr. Duret finds himself more or less in agreement with the results obtained by Dr. Ayer of Boston, and published in the *Boston Medical and Surgical Journal* in 1909. From these it would appear that the anterior cerebral artery is of considerable prominence in the nutrition of the head of the caudate nucleus, the globus pallidus or inner part of the lenticular nucleus, the putamen or outer part of the same, the anterior part of the internal capsule, and part of the external capsule. The American author has never found a lenticulo-optic artery, yet according to Dr. Duret he figures one in several of his diagrams. It is curious that no allusion is made to the comprehensive researches of the late Dr. Beevor, work characterised by the thoroughness and attention to detail that was a feature of all his investigations. Dr. Beevor used the method of simultaneous injection with five different coloured fluids of the five main vessels supplying the cerebrum, and the communications presented by him to the Royal Society of London two years ago may be said to have settled these vexed questions of cerebral supply once and for all.

LIGHT, PIGMENTATION, AND NEW GROWTH.

We have received a copy of a paper read at the South African Medical Congress at Durban on August 2nd, 1909, by Dr. Wilfred Watkins-Pitchford, in which he endeavours to develop a theory of the genesis of cancer. He starts with the general statement that no living matter is indifferent to light, and discusses the reactions of vegetable and animal organisms to its rays. He suggests that the development of pigment in the cells of growing embryos originally served the purpose of directing and restraining the fission of the cells, and, further, that pigment is an important factor in maintaining "tissue integrity" and in preventing the invasion of one tissue by another. He seems to regard the presence of pigment as a protection against the effects of illumination, or, as he expresses it, as a means of protecting the tissues from the stimulus of irradiation. He finds that man is peculiar in the paucity of the protective mechanisms he possesses against the effects of light, there being only the pigmentation of his skin and the red colour of his blood. His theory of cancer is, in brief, that irradiation causes the uncontrolled growth of cells which characterises that condition, which is, in effect, "a failure on the part of the more independent cells of the body to inherit the normal tendencies which control their multiplication." He applies this theory to the explanation of the development of cancer in various parts of the body, superficial as well as deep. He states that cancer is most common in the white races, and that the black races enjoy a relative immunity; that cancer is more frequent among those whose occupation or place of residence exposes them more to the effects of light. He even suggests that the increasing incidence of cancer may be possibly related to changes in the texture and colour of the clothing worn at the present day as compared with that formerly in use, which afforded more protection against the effects of light, such as the black broadcloth for the men and the black silk for the women. He states that the clergy as a class enjoy, not only the lowest general death-rate of all the occupations in England and Wales, but also a decidedly low death-rate from cancer, and hints that this may be due to their retention of the custom of wearing black clothes. Dr. Watkins-Pitchford supports his theory chiefly by vague but ingenious speculations and admits that his main propositions are "inductions from observations and not from experiments." It is of interest to note that X rays, which are a form of radiant energy, are now generally admitted to be able to cause carcinoma in skin exposed too long and too often to their effects. The experiments of Dr. W. S. Lazarus-Barlow and his co-workers at the Middlesex Hospital on the relations between radio-activity and cancer are not mentioned by Dr. Watkins-Pitchford.

THE HARMFUL EFFECTS OF ANTIPYRIN ACETANILIDE, AND PHENACETIN.

WE published in THE LANCET of August 14th, 1909, a note on a report[1] prepared by Dr. L. F. Kebler, Dr. F. P. Morgan, and Dr. Philip Ruff, dealing with the harmful effects of acetanilide, antipyrin, and phenacetin. We summarised briefly the results of their investigation of 400 replies received in answer to questions addressed to 925 physicians, showing a total of 814 cases of poisoning due to these drugs, with 28 deaths, and 136 instances of their habitual use. A search of medical literature during the period 1884–1907 showed records of 855 cases of poisoning, 26 deaths, and 33 cases of habitual use. It is noteworthy in regard to the 814 cases of poisoning investigated in the report that 94 cases occurred in children, and that in 377 cases—i.e., in about 46 per cent. of the cases—the drugs were administered without a physician's prescription. We have recently received a copy of a pamphlet by Dr. Uriel S. Boone of St. Louis entitled "Antipyrin, Acetanilide, and Phenacetin: Are they Harmful Remedies? Are they Habit-forming Drugs?" In this pamphlet the conclusions contained in the abovementioned report are aspersed on the basis of the replies obtained by Dr. Boone to a series of 18 questions addressed to "every hospital and sanatorium in the United States." He received replies from over 1100 of them, and on the basis of these he was surprised to find that in these hospitals and sanatoriums there were records of only 31 cases of untoward effect, and no record of a death due to these drugs. Among these 31 cases there was one case of insanity following abuse, 6 cases of large overdosage, 2 being of attempted suicide; 1 case of a child in a weakened state after amputation, 1 of acetanilide given with strychnine, 1 instance of 10 or 12 powders taken during drunkenness, and 1 case of a teaspoonful given to a patient with enteric fever by mistake; 7 cases are reported without details, and in the remaining 17 the symptoms were those of irregular pulse, weak action of the heart, and cyanosis, and were due to overdosage. Dr. Boone next discusses the question as to whether these drugs can lead to habits like those of other drug habits, and he finds that there has never been a case of habit in all those institutions from which he received replies. He is careful, however, to differentiate between habit in the sense of uncontrollable craving and habitual use for the relief of pain. He gives tables showing the replies he received and quotes the actual words of the reports of any cases of untoward effects, as he appears to be apprehensive lest the *bona-fide* character of his inquiry shall be traduced, his object being, as he claims, to arrive at the truth in regard to a matter which has been rather hotly debated. He states that he applied to the Agricultural Department of the United States for permission to examine the reports upon which its conclusions were based, but that his request was refused. He concludes that the denunciation of the coal-tar remedies has been excessive, that given in proper doses they are free of danger except in cases of idiosyncrasy, and that they do not lead to the production of a habit. Dr. Boone's results are sufficiently at variance with the views generally held to need some discussion. In the first place, he only received one reply in regard to antipyrin. In the report of the Department of Agriculture 65 cases of poisoning, 5 deaths, and 7 cases of habitual use were attributed to this drug, while in their study of the 855 cases of poisoning due to the coal-tar analgesics recorded in medical literature no less than 488 with 10 deaths were attributed to antipyrin. Again, his results deal with hospital practice, the other reports not being limited to institutions, in which it is probable that greater care in regard to dosage would be exercised than outside when the drugs are so frequently taken upon the patient's own responsibility. We are disposed to accept the distinction made by Dr. Boone in regard to habit and habitual use, but it is difficult to regard drugs which have been responsible for a considerable number of deaths as harmless, even though none of them may have occurred in the institutions from which Dr. Boone received his replies. The outcome of the whole inquiry would seem to be that harmful results, when they do occur, are largely the result of injudicious or excessive dosage, which, as we pointed out in our reference to the report of the Board of Agriculture, is similar to the conclusion arrived at in 1894 by the therapeutic committee of the British Medical Association under the chairmanship of Dr. D. J. Leech. Dr. Boone is apprehensive lest these remedies shall fall into an unmerited desuetude, while those who point to their dangers usually endeavour to emphasise the necessity for care in regard to their use and to prevent their indiscriminate use by patients. We can only be in sympathy with both these aims.

THROMBOSIS OF THE VEINS OF THE PENIS IN GONORRHŒA.

IN the *Progrès Médical* of Jan. 8th M. F. Jacoulet has reported a case in which occurred a rare complication of gonorrhœa—thrombosis of the dorsal vein of the penis—in a man, aged 22 years. On May 15th, 1908, the fourth day after coitus, an attack of gonorrhœa began. There were acute pain on micturition, an abundant discharge, and general symptoms—fever, rigors, malaise—which obliged him to remain in bed. On the 26th he felt acute pain at the root of the penis, and at the end of micturition, which was always excessively painful, some drops of blood appeared. On the 28th œdema of the penis began at the prepuce and spread up the penis to the root. It was impossible to uncover the glans. The œdema was soft and slightly painful. The skin was of normal colour and there were no inflamed lymphatic vessels or inguinal glands. On the 29th, in the middle line of the dorsum of the penis and in the position of the dorsal vein, appeared an indurated cord which was easily palpated through the œdematous skin, moveable on the deeper parts, and slightly painful. On the lower surface of the penis, where the œdema was less marked, were distended projecting veins, which, however, did not give the sensation of an indurated cord. Treatment consisted in rest in bed, moist warm dressings, and baths for the penis. On the 30th the urethritis was still intense and some drops of blood were passed at the end of micturition. On the 31st there was marked improvement; the discharge was less and the pain was tolerable. The œdema had diminished and was localised to the prepuce, which could not be retracted behind the glans. At the preputial orifice a small superficial lenticular ulcer was found. The indurated cord on the dorsum of the penis persisted. On the following days the improvement persisted, but on June 7th an exacerbation of the urethritis occurred; the discharge increased and the pains reappeared.

---

[1] Bulletin No. 126, Bureau of Chemistry, United States Department of Agriculture.

At the same time the œdema increased and again involved the whole of the penis. At no time was there any adenitis of the inguinal glands. On the 10th there was again improvement; the œdema was disappearing, but the indurated cord persisted and the preputial orifice was still ulcerated. But evidently the œdema was not due to lymphangitis. Thrombosis of the veins of the penis in gonorrhœa was first described by Desruelles in 1836 in his work on venereal diseases. He mentioned both phlebitis of the dorsal vein and phlebitis of the deep veins which might cause gangrene. The condition has received little attention from writers, but Payenneville, in a recent important article on the subject,[1] states that it is common, but is almost always confounded with lymphangitis. In deep thrombosis of the penis the thrombosis of the cavernous veins is accompanied by thrombosis of other veins. Our Berlin correspondent this week cites a case in which obstinate priapism in association with appendicitis was attributed to thrombosis of the deep vein of the penis. In one recorded case the necropsy showed that the cavernous veins were obliterated by clots which extended to the vesical and prostatic plexuses. In another case there were abscess of the prostate and phlebitis of the peri-prostatic plexus, and the thrombosis involved the pubic veins. The enlarged corpora cavernosa contained black pitch-like blood mixed with reddish clots showing purulent striæ. Superficial thrombosis generally runs a benign course. Its treatment is therefore expectant. In deep thrombosis, on the other hand, the treatment recommended is early incision of the corpora cavernosa through both its penile and perineal segments. When gangrene occurs separation of the sloughs should be facilitated. Later a plastic operation may be necessary.

SINCE Dec. 14th, 1909, five further cases of small-pox have occurred in the County of London. It is thought that the disease was contracted in Warsaw by two members of an English music hall company, who, on their return to England, were the means of transmitting infection to three other persons.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies has reported 11 cases of plague with 8 deaths during the week ending Feb. 4th.

---

[1] Annales des Maladies des Organes Génito-Urinaires, No. 8, 1908.

WORTHING HOSPITAL.—Following up the decision of the governors of Worthing Hospital in the middle of December last, that an ophthalmic department should be established at the institution, the hospital management committee has appointed Mr. W. Watson Griffin, of Hove, as ophthalmic surgeon. Mr. Griffin has had charge of the eye department of the Sussex County Hospital at Brighton since 1901. He was formerly in the eye department at the Middlesex Hospital, and clinical assistant at the Royal London Ophthalmic Hospital.

THE LONDON MILK-SUPPLY.—The public health committee reported to the London County Council on Feb. 8th that between Oct. 11th, 1909, and Jan. 29th, 1910, 810 samples of milk delivered at London railway termini had been examined under the provisions of Part IV. of the London County Council General Powers Act, 1907. The samples came from 25 counties and 676 had been examined to date, 73 being found to be tuberculous. Since the Act came into operation the examination of 1930 out of 2531 samples taken had been completed and the percentage shown to be tuberculous was 9·6. The Council's veterinary inspector had visited 184 farms outside London and inspected 4455 cows, of which 74, or 1·7 per cent., were found to be suffering from tuberculosis of the udder. In every case the dairy farmer had undertaken to sell no more milk from the affected animal.

PELLAGRA INVESTIGATION COMMITTEE.

A COMMITTEE, having the following constitution, has been formed in London for the promotion of the investigation of pellagra:—His Excellency the Marquis of San Giuliano, Italian Ambassador; Sir Thomas Clifford Allbutt, K.C.B., F.R.S., Regius professor of physic, University of Cambridge; Mr. E. E. Austen, F.Z.S., assistant in the Department of Zoology, British Museum (Natural History); Fleet-Surgeon P. W. Bassett-Smith, R.N., lecturer on tropical medicine, R.N. Hospital, Haslar; Sir T. Lauder Brunton, LL.D., F.R.S., consulting physician, St. Bartholomew's Hospital, London; Mr. J. Cantlie, lecturer to the London School of Tropical Medicine; Dr. C. W. Daniels, director of the London School of Tropical Medicine; Mr. R. S. Fraser, Member of Council, London Chamber of Commerce; Dr. Clement Godson; Dr. C. F. Harford, principal of Livingstone College, Leyton, honorary secretary, Society of Tropical Medicine; Lieutenant-Colonel Sir William Leishman, professor of pathology, Royal Army Medical College; Dr. R. T. Leiper, helminthologist to the London School of Tropical Medicine; Dr. G. C. Low, lecturer in parasitology, King's College, London; Dr. J. MacLeod, lecturer on dermatology, London School of Tropical Medicine; Sir Patrick Manson, K.C.M.G., F.R.S., medical adviser to the Colonial Office; Dr. F. G. Melandri, physician to the Italian Embassy; Professor E. A. Minchin, F.R.S.; Dr. F. W. Mott, F.R.S., pathologist to the London County Asylums; Professor William Osler, F.R.S., Regius professor of medicine, University of Oxford; Com. Paolo Polenghi, President, Italian Chamber of Commerce, London; Professor Ronald Ross, F.R.S., professor of tropical medicine, University of Liverpool; Dr. L. W. Sambon, F.Z.S., lecturer to the London School of Tropical Medicine; Dr. F. M. Sandwith, lecturer to the London School of Tropical Medicine; Professor W. J. R. Simpson, professor of hygiene, King's College, London; Dr. S. Squire Sprigge, Editor of THE LANCET; Mr. H. S. Wellcome; and Dr. Dawson Williams, Editor of the *British Medical Journal*.

In a preliminary communication setting forth the objects of the Committee the following lucid statement is made of the present position of our knowledge of the disease:—

Epidemiology of Pellagra.

Pellagra is one of the formidable disease-scourges of mankind. Like malaria, it is widely distributed throughout the world, being most prevalent in certain districts of tropical and subtropical countries. Europe, Asia, Africa, America, Australasia, all have their areas of pellagra endemicity, the extent of which, owing to non-recognition of the disease, is in most cases probably far wider than is generally suspected. In certain countries within the Mediterranean region, such as Spain, Italy, Roumania, pellagra is looked upon as a veritable calamity. For Italy a yearly estimate of about 100,000 standing cases is no exaggeration; whilst Roumania, with a population of 5,300,000, is estimated to contain from 40,000 to 50,000 cases.

Like kala-azar and sleeping sickness, pellagra is a deadly endemic disease, presenting a long, cruel course of 3, 10, 15, or more years' duration. It is confined almost exclusively to field labourers. It is characterised by a complexity of nervous, gastric, and cutaneous symptoms. The symptoms make their first appearance during the spring months and recur year after year at the same season, remitting more or less during the winter months. Clinically, the more distinctive features are a peculiar skin eruption, not unlike a severe sunburn, which affects the exposed parts of the body, accompanied by profound melancholia alternating with mania, which often leads to murder or suicide. In the last stages the patient becomes greatly emaciated, paralytic, and completely demented. In women pellagra usually causes abortion; when they do have children, the offspring are sickly and degenerate.

Pellagra is seriously prevalent in many parts of the British Empire and its dependencies. In Egypt it is known to be a veritable scourge. According to Dr. Sandwith the disease is especially common in Lower Egypt, where in certain villages he found as many as 36 per cent. of the inhabitants affected. Dr. Lavinder, however, states that it is more common in Upper Egypt. Dr. Cuthbert Bowen and, more recently, Dr. G. C. Low, have recognised the presence of pellagra in Barbados, West Indies, whilst it has also been reported from South Africa, among the Zulus and Basutos. Dr. Sandwith states that he saw two cases among the coloured lunatics on Robben Island in 1900. The disease is prevalent in parts of India. Dr. U. Ray wrote in 1902 that during a short stay in one of the districts of North Behar he observed several cases. At the Tropical Section of the British Medical Association meeting at Edinburgh Dr. Sandwith showed pictures and photographs of pellagra which were independently recognised by three members from India as representing a disease which they had often seen among out-patients, without being able to give it a name.

Pellagra is regarded as strictly endemic. Everywhere, however, where its occurrence has been noted for any length of time it has shown a marked tendency to slow extension. For instance, in the United States of America a few sporadic cases had been observed from time to time, but since 1906 the disease appears to have rapidly increased, and numerous cases have already been reported from no less than 17 States. This tendency to spread is a fact which must receive very serious attention, especially when we consider that pellagra can thrive just as well in Poland as in the Panama Canal zone, and that when once established in a new locality it remains there.

Theories Regarding the Causation of Pellagra.

Amongst the old theories as to the causation of pellagra we we find the disease ascribed to insolation, leprosy, syphilis, indigestible foods (onions, garlic, salted viands), bad air, bad water, poverty, inanition, &c. At the present day the almost universally accepted theory of its causation is the "maize theory," which ascribes the disease to the use of maize (Zea mais) or Indian corn as an article of food. This theory arose in Italy at the beginning of the nineteenth century at a time when there was a tendency to ascribe a number of diseases to food of one kind or other. Championed first by Thouvenel, Bassi, Marzari, and Fanzago, later by Ballardini, Pari, and Majocchi, and lastly by Lombroso and his school, it has reached us in a bewildering multiplicity of forms. All "zeists" are agreed that maize must be the cause of pellagra, but the morbific action of Indian corn is attributed by some to deficiency in nutritive principles, by others to specific toxic substances contained normally in the grain; others, again, believe that the pathogenic elements are elaborated during decomposition of the grain either before or after ingestion. According to some investigators, the poisons are the product of certain bacteria which attack the maize, others believe that they are elaborated by fungi. The nature of the toxic substances, bacteria, and fungi have varied with the investigator who isolated them; nevertheless, each has been equally satisfied that he has isolated the true causative agent of pellagra, and all claim to have reproduced the disease in man or animals by means of their particular poisons or micro-organisms. Of all the micro-organisms incriminated the most generally accepted are Aspergillus fumigatus, and the common blue mould (Penicillium glaucum), both of which are found everywhere on the most heterogeneous media.

At the Tropical Section of the British Medical Association at the meeting in Leicester in 1905 Dr. L. W. Sambon, criticising this medley of speculation and assertion, first pointed out that pellagra did not seem to be a food disease or due in any way to unsound maize, and suggested that in all probability it was protozoal in origin.[1]

Dr. Sambon's theory has received the support of Sir Patrick Manson, who not only endorses it in the new edition of his book on tropical diseases, but has repeatedly urged the necessity of investigating the disease on account of its prevalence in Egypt, the West Indies, and other tropical areas; while at the Third Pellagra Congress, held in Milan in 1906, Professor Terni also lent his support to Dr. Sambon's views. On Oct. 29th, 1908, a conference was held in Columbia, U.S.A., under the auspices of the State Board of Health of South Carolina, to discuss the problem, in view of the recent recognition of the disease in the Southern United States. Further support was given at this conference to Dr. Sambon's protozoal theory. Professor Babes of Bucharest, Roumania, hitherto a pronounced champion of the maize theory, has also become a supporter of the protozoal theory of Sambon, and, moreover, in a recent joint article, he and others have reported favourably on the treatment of pellagra by atoxyl and arsenious acid combined.

Urgency of Investigation.

Considering the gravity of the disease, the wide extent of its prevalence in British Colonies, Protectorates, and Dependencies, and its tendency to spread, it is our duty to take up the investigation of pellagra without further delay. The sudden spread of the disease in the Southern United States and the prompt action of the United States Government should be both a warning and a lesson to us. No time has been lost by the Americans, who, in this and other similar matters, have shown themselves to be leaders in the practical application of science and knowledge. Already, since 1908, two Conferences have been held in South Carolina, and a Pellagra Congress has been arranged for next June at Peoria, Illinois. Meanwhile, a National Association for the Study and Prevention of Pellagra has been organised under the Presidency of Dr. J. W. Babcock, one of the first to draw attention to the pellagra danger.

Apart from its paramount practical importance with regard to health, the subject of the etiology of pellagra claims investigation in the interests of British science. For over a century the causation of pellagra has been looked upon as solved by the maize theory. On this theory have been based all scientific researches, all preventive measures. As a consequence, instead of investigating the disease in the field, the proximal cause of pellagra has been looked for in samples of spoiled maize and, accordingly, regardless of continued failure, the whole prophylaxis of the endemic has been limited to the confiscation of unsound maize. A new and more plausible theory, based on analogy and fact, having been proposed by workers in Great Britain, this country should secure the credit of effecting the discovery of the veritable cause. Certain it is that this disease has to be reinvestigated in the light of the new ideas on the action of insects in the diffusion of parasites, ideas which have thrown so wonderful a light and, from the standpoint of prevention, so valuable a light on many of the obscure problems of tropical pathology.

Plan of Research.

It is suggested that Dr. Sambon be sent forthwith to a pellagrous area to work out the topographical distribution and epidemiology of the disease. As a working hypothesis Dr. Sambon proposes to endeavour to establish a connexion of the disease with one of the so-called "sand flies" (Simulidæ). A careful study of the distribution, topographical and geographical, as well as seasonal, shows that there is a remarkable concurrence in the areas and seasonal activities of these insects and pellagra. It is unnecessary here to enter into detail; suffice it to say that these concurrences are, to say the least, highly suggestive. If Dr. Sambon finds this hypothesis inapplicable he will be alive to any fact or circumstance which may guide to the true etiology of pellagra. In any case, a study of the smaller blood-sucking flies belonging to the families Simulidæ, Psychodidæ and Chironomidæ, especially in relation to the spread of disease, is very much needed. Our information on these noxious diptera is exceedingly scanty. Dr. Sambon will study the disease in the lower animals as well as in man; he will endeavour to establish in a definite manner whether pellagra can be looked upon as belonging to the group of protozoal diseases, and he will endeavour, helped by much previous experience, to demonstrate the parasite. Important results will be studied with a view to confirmation by other members of the committee, who will either work at the material sent home, or, if necessary, will join Dr. Sambon in the field. Owing to the large amount of work entailed it is proposed to send with Dr. Sambon properly qualified assistants to help him in the examination of patients, in laboratory work, and in the collection and study of insects. It is also suggested that arrangements be made for Dr. Sambon to receive assistance from local medical men and naturalists by associating them as correspondents.

Funds.

It is hoped to raise a fund of £1000 to defray the expenses of travelling, outfit, &c., and, if more is available, to afford adequate pay to such others as the committee may appoint to take part in the investigation, whether on the field or at home. To raise this subscriptions will be necessary. Already the Colonial Office has promised £150 on condition that a further amount of £450 is found, both the London and Liverpool Schools of Tropical Medicine have promised subscriptions, and the President of the Italian Chamber of Commerce and others have contributed to the fund.

---

[1] We hope to publish shortly a paper by Dr. Sambon giving the grounds for this belief.—ED. L.

As we announced last week. at the last meeting of the Pellagra Investigation Committee, after Dr. Sambon had given an account of his views, the following resolutions were adopted:—

1. That the committee, after hearing Dr. Sambon's statement concerning the etiology of pellagra, are of opinion that it is a matter of importance, both on scientific and hygienic grounds, that the hypothesis formulated by Dr. Sambon shall be investigated.

2. That the committee are of opinion that any funds raised to defray the expenses of such investigation will be well spent.

3. That a circular be drawn up for the purpose of making known the objects of the committee in raising the funds necessary for the investigation.

We trust that the modesty of the demand which is made, coupled with the grave importance of the work to be done, will cause the money to come in at once.

MEDICINE AND THE LAW.

Two "Hygienic Institutes" Mulcted in Damages.

AT the Marylebone County Court recently, before Sir William Selfe, Mrs. Smith, the wife of a police constable, recovered £100 as damages against "The London Hygienic Institute, Limited," Baker-street. Mrs. Smith was canvassed at her home on behalf of the firm with a view to ascertaining whether she wanted a set of false teeth, and after the agent's visit had been repeated consented to have a number of teeth taken out with a view to their being replaced by an artificial set at £5 10*s*. The same business-like gentleman with another afterwards called upon her and the two between them extracted 12 of the plaintiff's teeth, with the result that they left her in a state of collapse, to be followed by three weeks' confinement to her bed with a medical man in attendance. It was alleged by her that some time before the above operations were concluded she was in so serious a condition that one of the men sent out for brandy, and that in consequence of her fainting one of them had forced her head between her knees. The plaintiff also stated that the reason why she allowed herself to be treated by the defendants was because she understood that the treatment would be painless. The defendants' evidence was to the effect that the plaintiff neither shrieked nor fainted, that no bending of the head was performed, and that no brandy was sent for, one of the men swearing that the plaintiff thanked him and his companion for what they had done and promised to recommend the "Institute" to her friends. The views of the jury upon these divergent statements of fact may be gathered from the verdict mentioned above, in accordance with which judgment was given, with costs.

On the same day on which his honour Judge Selfe was trying an action in London against the "Hygienic Institute" carrying on its trade in Baker-street, Sheriff Fyfe was disposing of a claim at Glasgow brought by a stationer named Lawson against a "Hygienic Institute," having its address at Elmbank-street in that town. Whether the two "Hygienic Institutes" are branches of the same establishment, or merely have selected the same attractive, if misleading, title, is not a matter of great consequence, but in any case they appear to resemble one another in the practice of dentistry, in the unfortunate results of that practice for their patients and in the view taken in the law courts of their liability when sued for negligence. In the Glasgow Sheriff's Court the findings were to the effect that the defenders, in extracting 17 of Mr. Lawson's teeth (in order that he might be supplied with an artificial set) broke his jaw and much lacerated his mouth, with the result that it would not be possible to fit it with artificial teeth unless a painful surgical operation were first performed. The resemblance between the two cases is completed by the fact that at Glasgow also the sum of £100 was awarded as damages. Actions brought against the "London Hygienic Institute" in respect of the extraction of teeth by unqualified persons will be found described in THE LANCET of Oct. 23rd, 1909, p. 1236, and of Nov. 27th, 1909, p. 1622. In these two instances the business referred to was carried on at an address other than Baker-street. No doubt the business of carrying on dentistry through the agency of paid assistants who have not had to qualify themselves by undergoing a long and expensive training is a profitable one. In the case to which we referred on Nov. 27th, 1909, we quoted the evidence of an assistant who said that he operated on 35 patients a day, which gives some idea of the business done. In these circumstances the financial loss arising out of a few actions for damages is not likely to put a serious check upon the trade. The public is not easily warned or deterred, and it prefers to read and be guided by specious advertisements to studying reports of trials which have a certain monotonous similarity. Its protection by new legislation is what is required, but apparently there is no immediate prospect of this taking place.

Unqualified Dentist: Conviction of Police Court Set Aside in the Irish Divisional Court.

A decision of the King's Bench Division (Dublin), which was given on Jan. 31st, follows the lines laid down in the case of Bellerby *v.* Heyworth and Bowen by the English Court of Appeal in May of last year.[1] A case was stated by one of the metropolitan magistrates at the instance of the defendant, John Byrne, of 36, Talbot-street, Dublin. The complainant, D. L. Rogers, had charged the defendant before the magistrate on May 18th last that he "did on the 26th April last, unlawfully take and use the title or description 'dentist,' implying that said defendant was specially qualified to practise dentistry and registered under the Dentists Act (1878) as a person specially qualified to practise dentistry." The charge also included that he did "take and use the title, addition, or description, namely, Mr. Byrne, the expert adapter of teeth; extractions, 1*s*., by my own special system; painless and bloodless. ......" The magistrate had on that occasion convicted the defendant and fined him £5 and costs, but had at the instance of the latter stated the case for the opinion of the King's Bench as to whether his decision was right in point of law. The evidence which had been before him was that the defendant was not registered under the Dentists Act; that he was not a legally qualified medical practitioner; and that he had placed the advertisement above mentioned outside his premises in a glass case on the day referred to. The magistrate (Mr. D. Mahony) said that he believed the evidence, and found as a fact that "the defendant did operate and practise as a person specially qualified to practise dentistry, and that he took and used the title 'dentist,'" and that he believed that the evidence had brought the defendant under the Act. After the arguments had been heard the court had reserved judgment. It was now decided by the Lord Chief Justice, Mr. Justice Wright, and Mr. Justice Dodd. The two former held that the conviction should be set aside on the technical grounds that the defendant had not gone far enough in his advertisements, &c. Mr. Justice Dodd, in concurring, pointed out that the Act prohibited a person from describing himself as a qualified dentist; the defendant did not advertise himself as such—he had "only held out to the public that he was acting from the experience of his own skill, and not indicating any special qualification." The result announced was that the conviction was set aside, the court holding "that the defendant's conduct did not come within the penal clauses of the Act relied on by the complainant."

A Dangerous Quack.

At the Clerkenwell police court recently, before Mr. Bros, a man named Charles Banks was convicted of offences under the Medical Act and was fined sums amounting to £25, with the alternative of three months' imprisonment. It was proved that the defendant was not upon the Medical Register; that he attended a Mrs. Davison, who was suffering from what was stated to be bronchitis; and that the husband of the patient believed that he was employing a qualified medical practitioner. Mrs. Davison died, and the defendant signed a death certificate which, after some doubt on the part of the registrar, was accepted. The result of this was that the register had to be corrected by statutory declaration. The defendant lived over a cat's-meat shop, accounting for this to a gentleman from the office of the solicitors to the Medical Defence Union by stating that he had to lecture to and coach students residing in the neighbourhood. To the same gentleman, Mr. Tyrrell, he also administered medical advice, making a pretended inquiry into his condition at a public-house, prescribing for him and informing him that he was suffering from consumption and so many other complaints that a very large sheet of paper would be needed if they were all to be written down. For this he charged a fee of 5*s*. He also recommended his supposed patient to try change of air and surroundings, and gave him a certificate to that effect. Mr. Tyrrell, as a matter of fact, enjoys very good health, and it was pointed out that such a certificate might easily be used to deceive and defraud a benefit society or for a kindred purpose. The defendant did not use a name-plate or otherwise indicate his pretensions to medical qualifications in a visible form, but had become known in the neighbourhood where he lived as "Dr." Banks. The Medical Defence Union is to be congratulated upon having brought him to book and on having proved up to the hilt charges which should satisfy every reasonable person of the dangerous possibilities of unfettered quackery.

---

[1] See THE LANCET, May 29th, 1909, p. 1549.

THE HEALTH OF THE ARMY IN 1908.

II.[1]

Sanitation—(continued).

THE prevalence of sore throats in annual epidemic form at certain stations is referred to. Much work is being done in connexion with the disease, "and it is hoped that in due course some remedy may be discovered to reduce the exceptional sickness due to its prevalence." We find the words "in due course" a rather deliberate statement of policy. An account is given of a diphtheria outbreak at the Duke of York's School, Chelsea. There had been a prevalence of sore throats during the two previous years, but in no instance was the diphtheria bacillus found until Oct. 5th, 1908: a child was then found to be infected, and during the next three weeks six other cases occurred, as proved on bacteriological examination. On Oct. 24th a general inoculation with anti-diphtheritic serum was commenced. 535 boys, 38 students, and a few others were thus treated; specimen swabs were taken from every throat, and on examination 49 boys were found to be infected, and acting as carriers; also seven schoolmasters, and some members of their families, gave positive results. The diphtheria cases were removed to the Metropolitan Asylums Board hospital, and the carrier cases were isolated locally and treated with anti-diphtheritic serum. By Oct. 26th the school was free from disease, and no cases were reported subsequently. This outbreak appears to have been dealt with in a most prompt and thorough manner, and the authorities are to be congratulated on the result. This is now the third year in succession in which sore throats and diphtheria have appeared at the school, a fact which justifies the transfer of the boys to new buildings near Dover. The occurrence of throat illness three years in succession, in the first two with undefined, or ill-defined, diphtheritic features, clinically and bacteriologically, is epidemiologically interesting; in the third year the specific diphtheritic nature of the infection has been demonstrated. It is a question that cannot now be answered, What was the exact nature of the throat illness in the two preceding years?

The report states that the procedure as regards disinfection after occurrence of contagious disease has been somewhat modified; instead of disinfection of barrack rooms with sulphurous acid gas or formalin vapour, whitewashing walls, and using fluid disinfectants for bedsteads and woodwork, we learn that, on the recommendation of the Advisory Board, more attention is now paid to the disinfection of personal effects and the immediate surroundings of the individual attacked. It is recognised that infection proceeds largely from personal clothing and bedding; and that effectual vaporisation of a disinfectant is dependent on exact requirements as to the temperature and degree of moisture in the air, conditions not always to be secured in practice. "Vapour disinfection," or, as we should prefer to call it, "aerial disinfection," is now only used as a last resort.

The scales of barrack accommodation have been revised and a slight increase of floor space allowed (60 instead of 57 square feet). Stations abroad are now divided simply into subtropical and tropical, all being included in the former category with an increased allowance of 720 (instead of 650) cubic feet, except six stations, which remain at the same highest scale (1000 cubic feet) as before. The conclusions arrived at by Inspector-General Delorme of the French War Office are quoted with approval. These are, shortly: (1) that disease rarely originates in barracks, either old or new; (2) it is generally introduced from outside; (3) when introduced it generally spreads by overcrowding, irrespective of the age and construction of the buildings; (4) space between sleeping cots is the most important requirement in barrack hygiene; (5) the modern tendency to reduce the cubic space and area of the sleeping room in order to provide dining and recreation rooms is condemned. These conclusions we venture to think thoroughly sound. The principal sanitary improvements that have been, and are now being, undertaken in our barracks are: (1) provision of night urinals in lieu of urine tubs; (2) replacement of earth-closets by water-closets; (3) substitution of pedestal water-closets for trough latrines; (4) provision of hot water for bathrooms, and (5) of sanitary annexes to married quarters; (6) installation of incandescent lighting where gas is in use. All of these changes are to be welcomed; they have long been called for. Improvements are also being effected in several of the sewage disposal works in the Aldershot Command and on Salisbury Plain. Great improvement is noted to have taken place in the sanitary condition of the large training camps throughout the country, and to this is attributed the freedom from infectious disease that they have enjoyed. We are glad to record our conviction from reading this report that, both as regards treatment of the sick in hospital and care of the sound in camps and barracks, matters were a year ago in a thoroughly satisfactory condition—a condition which has surely been maintained or bettered.

The Mediterranean Area.

This includes Gibraltar, Malta, Crete, Cyprus, and Egypt, the climatic and health conditions of these stations being in the main similar. Cyprus shows an increase in the admission-rate compared with 1907; the other four stations all show a reduction. Compared with the quinquennium 1903-07, all show a reduction in admissions, constantly sick, and invaliding. The average strength of the troops in the Command amounted to 15,548.

At Gibraltar there were a slight increase in enteric fever and a perceptible decrease in venereal disease compared with the previous quinquennium. The health of the troops generally was satisfactory. The cases of enteric fever numbered 23, of which 17 occurred in the three months September to November. All were sporadic cases except 5 admitted from casemate barracks within 14 days; the cause of this small outbreak could not, however, be ascertained. Not a single case of Malta fever occurred. Attention is drawn to some defects in the water-supply, which in a fortress of this kind must always be a matter of difficulty. Berkefeld filters are in use for the casemate barracks, the catchment area supplying which is unavoidably exposed to pollution, and they are said to work satisfactorily. A scheme has been prepared for supplying these filters to all barracks.

In Malta the improvement in the health of the troops as compared with the previous quinquennium is striking; this is as might have been expected, but is none the less a matter of congratulation to the medical service. Admissions have fallen from 569·2 to 434·5, and constantly sick from 38·79 to 28·20. This cannot be accounted for by the new rule regarding treatment of slight cases in barracks. The deaths were 2·65 compared to 5·69, and the invalids sent home were 9·12 compared to 38·65. The improvement has been general, but most marked in Malta fever, enteric fever, and pyrexia of uncertain origin. The ratio per 1000 of admissions for Malta fever has been only 0·8, compared with the quinquennial ratio of 39·8; there have been no deaths (compared with 1·09), and the invalids have been 0·5 compared with 20·55. Altogether there were seven cases—five men, one woman, and one child; six out of these seven cases had taken unboiled milk. "The fact that cows in Malta are liable to contract the disease, and that their milk, if consumed unboiled, is as dangerous as goat's milk, has been pointed out to all ranks." Six cases of enteric fever occurred, three of them being due to a paratyphoid organism; in the previous year, 12 out of 15 enteric cases were attributed to a similar bacillus. The cause does not seem to have been traced with certainty, but the eating of unwashed, or partially washed, vegetables is thought to have been the most probable mode of infection, Maltese vegetable gardens being generally watered with cesspool matter. The danger was notified in general orders, and it is mentioned that there have been much fewer cases since. Pyrexia of uncertain origin caused 303 admissions; blood examinations were made in all cases; enteric, paratyphoid, and Malta fever were excluded. It is thought that infection may be conveyed by some species of sandfly, and reference is made to the similar disease in Herzegovina which has been proved to be spread by Phlebotomus Papatasii; a special officer has been deputed to investigate the matter. There were 12 cases of tubercle of the lung, 11 of them occurring in men living in casemate barracks. This is suggestive, and we think would be a reason for vacating such quarters; their adequate ventilation must be almost impossible. Considerable advance has been made in sanitation. The civil drainage has been considerably, and the military drainage slightly, extended during the year, and the flushing arrangements much improved; there are still many dry-earth seats to be replaced by water-closets, and another pressing need is "the substitution of up-to-date flushing urinals for the present unspeakable night urine tubs." The provision of 500,000 gallons of sea water daily for flushing purposes down the civil government main sewers has been of great benefit; the drinking water-supplies have also been improved, and the risk of scarcity of good water in dry seasons reduced to a minimum.

---

[1] No. I. was published in THE LANCET of Jan. 29th, 1910, p. 322.

In the Crete garrison the health of the troops has been good throughout 1908.

In Egypt improvement has been distinct, though slight, and has been evident in the more serious diseases, such as enteric, Malta fever, dysentery, and malaria. There were 19 cases of enteric (3·6 per 1000, compared with 6·4 for the preceding five years). The reduction is attributed partly to the abolition of the dry-earth system, cresol solution being used in the pans and for scrubbing the floors, seats, buckets, and urinals, according to the present practice in India. The result is an entire absence of fæcal odour and of flies. The practice of enteric, or rather anti-enteric, inoculation has been carried out with excellent results in the Coldstream Guards and Inniskilling Dragoons. Only two cases occurred in the former regiment and none at all in the latter during the last 14 months of their stay in the country. Venereal disease also showed a decrease.

South Africa.

In the South African Command the average strength was 14,075. The admission ratio was 359·3 and the deaths 3·55, showing a marked improvement on the quinquennial ratios of 565·7 and 7·44 per 1000. The invaliding ratio was also very greatly reduced, being 6·32 as compared with 22·15. The report alludes to the 1908 figures as being "almost three and a half times less than" the quinquennial average. This is a clumsy and faulty expression; what is meant is that the invaliding is "little more than a quarter of" what it had been in the previous period. The improvement in health was manifest in all the stations throughout the colony. Wynberg shows the highest admission rate, 526·6, mainly due, as in past years, to the prevalence of venereal disease. The mortality ratio, 3·55, is a marked improvement on the quinquennial average of 7·44, and is the lowest recorded since the war. There were 130 cases of enteric fever (9·2 per 1000), yielding a death-rate of 0·78 per 1000. Though this is a great improvement on the previous quinquennium (25·7 admissions and 2·8 deaths) there does not seem to be any rapid diminution in the prevalence of this disease; in 1907 the admission ratio was 10·0, and in 1906 9·3. The report states that, "as regards the year 1907, the comparison is favourable, but not to such an extent as might be expected." We can hardly regard the position as satisfactory (considering the figure for 1906), but no doubt the question of enteric prevalence and prevention is a very difficult one to deal with. The percentage of mortality to attack is low, 8·5, so that possibly slighter cases are now diagnosed as enteric than in former years. A large amount of laboratory work is being done in the endeavour to clear up the ill-defined types of fever that are met with; it has to be acknowledged, however, that a close examination of the records of every case of enteric admitted during the year fails to elucidate the precise manner in which the disease was contracted. The sanitary officer of Cape Colony district, referring to an outbreak at Middelburg, remarks that "the distribution of cases and the intervals between them give rise to a strong suspicion that the infection was handed on from one case to another through the agency of the latrines." It is to be noted that the dry earth system is still in use at Bloemfontein, Pietermaritzburg, Middelburg, Maitland musketry camp, and at the signalling school and Quagga musketry camp at Pretoria —Pretoria, Middelburg, and Bloemfontein are the three stations where the enteric incidence was highest. Although not suggested in the report, it appears to us that there may be a connexion between these two facts. An outbreak of scarlet fever occurred at Bloemfontein; the source of infection was traced to a bundle of past-worn blankets returned to store and then distributed as a cold weather issue. Dysentery continues to decrease, the admission-rate being 1·7, compared with the quinquennial average of 11·1 per 1000. Malaria also shows a decrease, 7·3 compared with 13·4 admissions per 1000; almost all the cases are recurrent. Pneumonia has hitherto been a serious disease in South Africa, the quinquennial death-rate having been 0·85 per 1000 (higher than for any other disease except enteric); this year the admissions have been only 2·1 and the death-rate 0·14 per 1000. Tonsillitis is very prevalent. The admissions have been actually more numerous than those under any other heading except local injuries—namely, 38·8 per 1000, as well as 5·8 for sore throat, but this figure is considerably less than the quinquennial average (47·8).

In regard to sanitation in this command much has been done during the year, and no doubt much remains to be done. It is stated that "the water-supplies at the various stations have been reported as satisfactory" (p. 71); and immediately afterwards that "the practice of sterilising the drinking water by boiling is carried out at all stations"; probably therefore what is meant is that the supplies are *not* satisfactory until they are boiled. No bacterial contamination of importance has been found, nor has any disease prevalence been considered to be due to the water-supply. We notice that the pendulum has swung back again in regard to clothing: "Khaki drill came into general use in the command on April 1st; ...... being washable gives it a distinct advantage over khaki serge as regards cleanliness"; it does not seem long since the "service dress" of khaki serge was introduced as universally applicable, hygienic, comfortable, &c. "Our little systems have their day"—now khaki drill is worn again.

India.

The average strength of the European troops serving in India was 66,522, and of this large force the health statistics are, on the whole, satisfactory. The ratios for admission to hospital (836·2) and for deaths (9·11) are slightly higher than in 1907, but well below those for the preceding quinquennium (878·6 and 10·88). The invaliding ratio has been much lower, 15·67, compared with 28·04. The year 1908 was marked by a great prevalence of malaria, for which the rates for admission (244·6), constantly sick (8·35), and death (0·51) have exceeded the quinquennial average. It was also a cholera year, there having been 43 cases and 35 deaths.

There were rather more cases of enteric fever (14·6 per 1000) than in the previous year, but fewer than the quinquennial average (16·8); the death-rate was also lower (2·79) than that for the five-year period (3·28). The stations that had the highest admission rate were Jubbulpore (34·6), Rawal Pindi (31·9), Peshawar (31·3), and Multan (30·8 per 1000). On the other hand, some stations that have had a very bad reputation for enteric were comparatively free, such as Ambala (8·3), Agra (9·8), Lucknow (14·3), Quetta (17·9), Mhow (4·1), Poona (9·8), and Kirkee (10·1). Much attention has been paid to the "carrier" problem, the view being taken that such men are among the most frequent sources of infection. A connexion between enteric prevalence in August and September and the great increase of flies at that time was apparently established at Poona and Kirkee; also at Secunderabad. Transmission through clothing was illustrated at Kirkee. An officer died from enteric fever; two months later his clothes (which had not been disinfected) were sold by auction. Three sergeants who bought clothes were attacked 16, 29, and 31 days later.

Ten cases occurred at Ahmednagar in two companies of the Worcestershire Regiment, and the circumstances of this outbreak are very instructive. "There had been no cases among European troops in the station for four months. The two companies had recently moved into the artillery lines, the latrine accommodation in which was admittedly insufficient for the increased number of men, and the regimental conservancy establishment was not equal to the increased work. As a result removal of the excreta was not properly carried out, and the latrines became fouled; while flies, apparently bred in the city filth trenches some 1900 yards distant, swarmed in the latrines. The use of a disinfectant solution in the latrine pans, which had been in force for more than a year, but which had not received the sanction of Government, was discontinued the month before the outbreak, and the dry earth method re-introduced. The first case was admitted two days after arrival from Belgaum, the second two days later. The third case was ill in barracks for 7 or 8 days before reporting sick." Precautionary measures were then taken. The outbreak was confined entirely to these lines and ceased 23 days after the commencement, with the exception of one case, which was admitted three weeks later. We congratulate the authorities on the promptitude with which this outbreak, once it had started, was taken in hand; but with regard to the circumstances that brought it about: (1) *How* was it that the latrine accommodation was allowed to be insufficient? (2) *Why* was the conservancy establishment not brought up to the number necessary for the work? (3) *Who* was responsible for discontinuing the use of disinfectant solution, or for not using it when it was obvious that the latrines were in need of special care and supervision? (4) Was any action taken to prevent a repetition of such an occurrence?

Energetic measures are being adopted to deal with the danger from carrier cases: a depôt has been established at Naini Tal where convalescents from four divisions—about one-third of the convalescents from all India—are received, and isolated from other troops. An expert officer, provided with a laboratory, carries out bacteriological investigations of urine, fæces, &c., and the excreta are sterilised before being disposed of. 310 convalescents were received here from the beginning of April to the end of the year. It has been found that the admissions for enteric fever from all the stations which sent convalescents to Naini Tal show a reduction of 9 per cent. on the figures for 1907; while the remaining stations show an increase of 26·6 per cent. A similar depôt for Southern India has been established at Wellington. Several important preventive measures have been adopted. The use of alkaline cresol solution for latrine pans instead of dry earth is now universal (every rule has its exceptions, *teste* Ahmednagar); it is not only a superficial disinfectant, but also a deterrent to flies. Systematic efforts are made to reduce their number in cantonments by getting rid of their breeding places in collections of filth, litter, and rubbish. And a note of cheerfulness is apparent in the statement that at Mhow "the breeding of flies in the vicinity of barracks was prevented by the prompt removal of such breeding material as the excreta of animals by flying sweepers. The cavalry regiment, which at one time spent as much as 60 rupees per month on fly papers, was able to discontinue their use after the introduction of this system." At this station (Mhow) the improvement was extraordinary, the enteric admission-rate having fallen from 22·3 per 1000 in 1907 to 4·09 in 1908. Lastly, anti-typhoid inoculation was carried out during the year, and the report says: "Speaking generally, it may be said that the attack-rate in inoculated men is reduced to rather less than one-half, and the case-mortality to about two-thirds, of the rates in the uninoculated."

As already mentioned, 1908 was a bad year for malaria, the admission-rate (244·6) having been higher than in any year since 1903, and the death-rate (0·51), the highest since 1902. The fever was worst at Meerut (1055 per 1000 admissions), Peshawar (675), Lahore (538), and Sialkot (527). At all these places there was a great proportionate increase in the rainfall. At Rawal Pindi there are an enormous increase in the rainfall and a slight rise in malaria, and at Calcutta a large increase in rainfall with a reduction in malaria; at Quetta, Bombay, Bareilly, and Cawnpore an increase in malaria with a diminution of rainfall. This relationship is a matter of great importance and still requires to be worked out in connexion with modern prophylaxis. Apparently no cut-and-dried system of anti-mosquito measures will suffice, but each station requires its own plan of campaign. Public funds will have to be largely drawn upon for the purpose, and we have no doubt that they will be forthcoming. Mosquito curtains are now provided at a few particularly malarious stations. Unfortunately, they interfere with the use of the punkah, and many men will not use them. Prophylactic doses of quinine were given in 53 out of 58 stations in the plains during the fever season, 10 or 15 grains on two consecutive days weekly; the results were not by any means so favourable as might have been hoped for. Larvicidal measures have been continued, but it is difficult even with expenditure on a considerable scale to rid certain places of mosquitoes. Fumigation of barrack rooms was tried at Peshawar and Ambala. The results all round of malaria prophylaxis in India are so far, it must be confessed, disappointing. Although 1908 was more malarious (with an admission-rate of 244·6) than any year since 1903, it is not to be supposed that it was a bad year compared with former times; between 1871 and 1900 there were only three years when the admissions fell below 300 per 1000, and in one year the rate was as high as 734 per 1000. Besides malarial fever there has been an increase in "pyrexia of uncertain origin," formerly called simple continued fever, most marked at Peshawar, and no doubt partly of malarial nature.

Venereal diseases showed a further reduction in 1908, the admission ratio for all forms being 69·8, compared with 162·3 for the previous quinquennium; the improvement is noticeable in all forms of these affections. It is attributed to the personal influence exercised by commanding officers, the spread of temperance, the more thorough treatment by checking relapses, and to the fact that a man loses proficiency pay when found to be suffering from these complaints.

Smaller Stations.

With regard to the group of smaller stations, scattered in their distribution, a remarkable decrease in sickness is noticeable in Bermuda. There has also been improvement all round in Ceylon, South China, and the Straits Settlements, but in Jamaica, West Africa, and Mauritius the health generally has not been so good.

The general impression to be derived from a study of this report on the health of the army for 1908 is one of satisfaction with the methods employed and the results attained. It should be added that the report itself is admirably arranged and the masses of facts and figures are set forth with a minimum of typographical error.

TUBERCULOSIS IN BRIGHTON.—The Brighton town council on Feb. 3rd agreed to the recommendation of its medical officer of health, Dr. Duncan Forbes, that during an experimental period of six months patients suffering from tuberculosis of bones and joints be treated at the sanatorium on the same conditions as those on which patients suffering from pulmonary phthisis are now admitted. Dr. Forbes has estimated that the probable expense of opening for a period of six months a ward for 12 patients would be £140.

HOSPITAL ECONOMIES.—The recently published annual report of the Kent and Canterbury Hospital describes various changes in the working of the charity which have been instituted since last year. For some time the finances have been causing uneasiness to the management and considerable encroachments upon capital have been made. Through the generosity of the President, Lord Northbourne, it was made possible to call in the services of an expert to advise if and how matters could be improved. For this purpose was engaged Mr. Godfrey H. Hamilton, secretary of the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, who in 1907 secured the Speyer prize for the best essay on hospital management. The recommendations made by Mr. Hamilton include the closing of two wards, which it is to be presumed were superfluous, and the throwing open of contracts to a wider field. He also had advocated small payments by patients, concerning the advisibility of which there must be doubts. It will, however, be necessary to experience a full year's working before the effect of the alterations can be estimated.

THE LANCET RELIEF FUND.

Almoners.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., M.D. Lond.), the President of the Royal College of Surgeons of England (Mr. HENRY T. BUTLIN, D.C.L., LL.D.), the President of the General Medical Council (Sir DONALD MACALISTER, K.C.B., M.D. Cantab., LL.D., D.C.L., F.R.C.P. Lond.), and the EDITOR of THE LANCET (S. SQUIRE SPRIGGE, Esq., M.D. Cantab.), with Sir JOHN TWEEDY, F.R.C.S., as Honorary Auditor.

Scope of the Fund.

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

Chronic Cases Ineligible.

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

> "We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be benefited permanently thereby.

Twenty-first Annual Report of the Almoners,

For the year ending December 31, 1909.

IN presenting their Twenty-first Annual Report, the Almoners have to record that the balance in hand on Dec. 31st, 1908, was £267 1*s.* 2*d.*, to which on Jan. 1st, 1909, the Proprietors of THE LANCET added the sum of £300, making a total sum of £567 1*s.* 2*d.* available for grants during the year 1909.

The number of applications for assistance received by the Almoners during the year was 27, of which number 4 were rejected by the Secretary as quite outside the scope of the Fund; 2 were declined by the Almoners after due consideration; 7 application forms were not returned—doubtless owing to the applicants realising that their cases were not of a nature qualifying them to receive assistance from the Fund; and 14 applicants were relieved by gifts or loan of money ranging from £10 to £25. The relief of these 14 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £235. The total amount voted by the Almoners since the commencement of the Fund is £6354 6*s.* 3*d.*

As in past years, the Almoners have received expressions of gratitude for the assistance which they have afforded to applicants—in some urgent cases the relief being given within a few hours of the application being received. Thus the timely help of the Fund has enabled more than one applicant to keep his practice together when pressing claims threatened to destroy his home and his means of livelihood; and the widow and the orphan have also been helped at the moment of their greatest need.

Mr. Henry T. Butlin, D.C.L., LL.D., having succeeded Sir Henry Morris as President of the Royal College of Surgeons of England in July last, thereupon became an Almoner of the Fund, and kindly consented to act as such. The Almoners desire to record their warm appreciation of the valuable services rendered to the Fund by Sir Henry Morris during the period of his Almonership, and to congratulate him upon the honour of a baronetcy conferred upon him by His Majesty.

It is with profound regret that the Almoners have to record the death, in March last, of their colleague, Mr. Thomas Wakley, Editor of THE LANCET, who, with his father, the late Thomas Wakley, founded the Fund in 1889. Father and son took a keen interest in the Fund, and thereby in the struggles of the poorer members of the profession, and it is a source of gratification to the present Almoners to know that the sympathetic work of father and son is to be carried on by the present Proprietors of THE LANCET—all members of the Wakley family. To fill the vacancy created by the death of Mr. Wakley, the present Editor of THE LANCET (Dr. Squire Sprigge) has been appointed an Almoner.

The Almoners have also to record with regret the death of the Honorary Auditor, Sir Thomas Smith, Bart., K.C.V.O., F.R.C.S. Eng., who succeeded the late Sir Henry Pitman in his office, and whose interest in the Fund was none the less sincere and valuable because his tenure of the post was, alas, so brief.

In conclusion, the Almoners would point out that they will at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund, but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides*, as well as of the suitability, of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications.

(Signed)

R. DOUGLAS POWELL. HENRY T. BUTLIN.
DONALD MACALISTER. S. SQUIRE SPRIGGE.

Feb. 7th, 1910.

THE LANCET RELIEF FUND.

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1909.

DR.	£	s.	d.
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1909	267	1	2
,, Proprietors of THE LANCET, Jan. 1st, 1909 ...	300	0	0
	£567	1	2

CR.	£	s.	d.	£	s.	d.
By Loan:—						
Case No. 825				25	0	0
By Gifts:—						
Case No. 807 (voted 1908) ...	15	0	0			
,, 810 (,, ,,) ...	15	0	0			
,, 808	20	0	0			
,, 812	10	0	0			
,, 816	15	0	0			
,, 817	10	0	0			
,, 823	10	0	0			
,, 824	15	0	0			
,, 826	10	0	0			
,, 827	10	0	0			
,, 830	15	0	0			
,, 832	20	0	0			
,, 834	10	0	0			
,, 836	25	0	0			
,, 837	10	0	0			
				210	0	0
Balance at Bank, Dec. 31, 1909 ...				332	1	2
				£567	1	2

We find by the Banker's Book that the actual Balance on Jan 1st, 1909, to the credit of the Fund was £267 1*s.* 2*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1909. The balance at the Bank on Dec. 31st, 1909, was the sum of £322 1*s.* 2*d.*

We have examined this statement and compared it with the Vouchers and Bank Account, and find same correct.

Jan. 31st, 1910.

SLADE, LEWIS, and SLADE, Chartered Accountants.

INTERNATIONAL MEDICAL CONGRESS, 1913.

Election of General Committee.

Dr. F. W. Pavy presided on Feb. 7th over a meeting, attended by many of the leading members of the medical profession, which was held at the Royal Society of Medicine. The meeting was convened for the purpose of electing a General Committee for the International Medical Congress to take place in 1913 in London, and to discharge other business in connexion with that Congress. Dr. Pavy explained that the National Committee for Great Britain had dissolved and had formed itself into the nucleus of a General Committee to take its place, and the first thing the meeting would have to do would be to sanction the enlargement of that General Committee.

Mr. D'Arcy Power then read out a list of more than 350 names of men proposed for the committee, and these were duly elected after being proposed from the chair. The names were a very representative list, certain obvious omissions being explained by the fact that the gentlemen in question, being already members of the old National Committee, formed the nucleus in question of the General Committee.

Dr. Pavy submitted to the meeting the name of Sir Richard Douglas Powell, President of the Royal College of Physicians of London, for the post of chairman of the General Committee.

This was carried with acclamation, and Sir R. Douglas Powell was inducted into the chair by Dr. Pavy, after which a hearty vote of thanks was accorded to Dr. Pavy for his exertions in the past years as chairman of the National Committee, in which vote the services of the honorary secretaries were included.

Sir R. Douglas Powell then announced that the next business was the choice of a President, a treasurer, and a secretary-general for the International Congress in 1913. He pointed out that the appointment of gentlemen to these posts was a responsible task, and that great discrimination must be shown in the election.

Mr. A. Pearce Gould suggested that the wisest course for the General Committee to adopt would be to elect a small committee to inquire into and to study the question, with instructions to report to the General Committee at an early date, nominating candidates for the different posts. This report would be circulated before the next meeting of the General Committee so that the election could then be made.

Professor W. Osler seconded the proposal, and pointed out the advisability of putting so important a matter into the hands of a carefully selected committee.

Mr. Butlin supported the proposal.

Sir Havelock Charles thought that the meeting as constituted might well proceed to the election of a President, but a motion to that effect met with no support.

Sir R. Douglas Powell, in reply to a question, said that it was presumed that it would be left to the discretion of the committee to nominate one or more candidates for each post.

Mr. Pearce Gould's proposal was now put as a motion and carried, and the following are the names of the committee appointed :—The President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the Regius Professor of Medicine of Oxford, the Regius Professor of Physic of Cambridge, Sir William Church, Sir Thomas Barlow, Sir William Allchin, Dr. Pavy, Dr. Norman Moore, Dr. S. J. Sharkey, Dr. Percy Kidd, Sir W. Watson Cheyne, Mr. R. J. Godlee, Mr. C. T. Dent, Mr. G. H. Makins, Mr. Pearce Gould, Sir W. Macewen, Sir Charles Ball, Sir William Whitla, Sir Malcolm Morris, Mr. D'Arcy Power, Mr. Charters J. Symonds, Surgeon-General A. M. Branfoot, Dr. A. Newsholme, Principal Medical Officer of the Local Government Board, the Director-General of the Army Medical Department, the Director-General of the Medical Department of the Admiralty, Sir Shirley Murphy, Sir John Tweedy, Dr. G. A. Gibson, and Dr. G. Newman, Principal Medical Officer of the Board of Education.

The business of the meeting was concluded with a vote of thanks to the chairman.

BRITISH MEDICAL BENEVOLENT FUND.

At the January meeting 16 cases were considered by the committee, and grants amounting to £155 made to 15 of the applicants. Appended is an abstract of the cases relieved :—

M.D. Durh., aged 58 years. Is incapacitated by hemiplegia and dependent on a sister, whose income is very small. Used to be a man of considerable means, but owing to a series of misfortunes over which he had no control is now practically penniless. Voted £10 in two instalments.

M.B.Cantab., aged 41 years. Used to practise in London, but was obliged to give up owing to a long illness. Is now sufficiently recovered to do locum-tenency work, but finds great difficulty in obtaining engagements at this time of year. No income and wife a chronic invalid. Voted £10, of which half was subscribed by another society anxious to help the applicant.

L.S.A., aged 70 years. Has been quite incapacitated for the last three or four years and is dependent on a small allowance from a local medical benefit society and slight help from relations. Voted £12.

Daughter, aged 53 years, of late M.R.C.S., L.S.A. Only certain income about £10 a year, and endeavours to support herself by taking boarders, but was unable last year to cover her unavoidable expenses. Voted £10.

Widow, aged 33 years, of M.B., M.Ch. Glasg. Only income about £20 a year, and asks for a little help towards school fees for her only child, a boy, aged 9, who is a candidate for Epsom College. Is endeavouring to obtain a post as housekeeper or companion. Voted £10.

Daughter, aged 32 years, of late M R.C.S. Eng., L.R.C.P. Edin. Used to support herself as a shorthand typist, but about five years ago developed phthisis, and has since been unable to work. Dependent on her mother, an Epsom pensioner, and a sister who is a clerk. Voted £10 in two instalments.

Daughter, aged 38 years, of late M.R.C.S., L.S.A. Is a chronic invalid, and only able to help her mother, whose income is insufficient for the support of both. Relieved once, £10. Voted £10 in two instalments.

Widow, aged 60 years, of M.R.C.S. No income and dependent on children, who can ill afford to help. Relieved six times, £70. Voted £12 in 12 instalments.

Daughter, aged 72 years, of late M.R.C.S., L.S.A. Income less than £20 a year ; earns a few shillings occasionally by needlework. Relieved ten times, £101. Voted £12 in 12 instalments.

Daughter, aged 58 years, of late M.R.C.S., L.S.A. Was a matron at a large school for several years, and now endeavours to support herself by sewing. Eyesight failing and health indifferent. Relieved three times, £36. Voted £12 in 12 instalments.

Widow, aged 52 years, of M.R.C.S., L.S.A. Income very small, but with the help of this Fund has been enabled to keep a small home and bring up her family. One boy still at school, having won a scholarship. Relieved 14 times, £162. Voted £12 in 12 instalments.

Widow, aged 65 years, of late L.F.P.S. Glasg. Husband's savings exhausted by a long illness ending in death about 18 months ago; endeavours to support herself by taking boarders. Relieved twice, £10. Voted £12 in 12 instalments.

Widow, aged 36 years, of M.R.C.S. Eng., L.R.C.P. Edin. Asks for help to send a daughter to Canada as a mother's help. Relieved once, £10. Voted £5.

Widow, aged 58 years, of L.R.C.P., L.R.C.S. Irel. Unprovided for at husband's death a few years ago and dependent on friends and the help of this Fund. Relieved five times, £47. Voted £6 in six instalments.

Daughter, aged 55 years, of late M.R.C.S. Since father's death several years ago has supported herself by a small school, but has lost several pupils owing to competition and removals. Relieved three times, £43. Voted £12 in 12 instalments.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

The Medical Treatment of London School Children.—The London County Council has extended for a further period of three months the agreement with the Victoria Jubilee Institute of Nurses for the treatment of school children suffering from infected ears. The scheme, which was referred to in The Lancet of Feb. 13th, 1909, was put into force in Hackney, Shoreditch, and Bethnal Green on Oct. 1st, 1909, and the Education Committee stated that a further three months' trial would be necessary before its merits could be definitely decided.

A Radium Spa in Cornwall.—A scheme is on foot to raise capital for the purpose of establishing a health resort near St. Ives in Cornwall that shall be replete with the appliances and fittings of a modern balneotherapeutic institution. The idea has arisen out of the fact that it has been found that the radio-activity of the large volumes of water in the Trenwith mines and in the springs also ranks, according to Sir William Ramsay, K.C.B., F.R.S., "with the most radio-active known." Negotiations are already in progress, it is stated, to secure land in the immediate neighbourhood of St. Ives for the building of hotels and bathing establishments. The venture will be watched with interest, not only from a medical point of view, but also in regard to its effect upon the peculiar insular ideas which a large section of the public holds concerning the uniqueness and superiority of health resorts abroad.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The County of Durham.—Dr. T. Eustace Hill thinks that the official estimate of the population—843,770—undoubtedly too low, and he points out that if the excess of births over deaths be alone considered the population of the county in mid-1908 would reach 875,109. The fact that there was a notable increase in the birth-rate is indeed good news in face of the steady decline in this rate which is taking place in so many districts. The death-rate, based on the official estimates, was 17·5 per 1000, which shows an increase of 0·5 on that of the previous year. There was, unfortunately, a large increase in the infantile mortality rate, which reached 151 per 1000 births, the excess being caused largely by the diarrhœa mortality which occurred in the third and fourth quarters and which is ascribed to the high temperature experienced in September. The infant mortality was much lower in the boroughs than in other parts of the county, and the rates in the several districts ranged from 241 per 1000 births in Willington to 44 in Stanhope. In connexion with this important subject we see that one of the medical officers of health objects strongly to the adoption of the Notification of Births Act, and he thinks that the official inspection which follows notification would be resented by the independent people of the district, a resentment in which, he adds, they would have his sympathy. This is certainly a difficult attitude for a public official to adopt, though we can fully understand the objections of practitioners to the Act. There was only one case of small-pox notified in the county in 1908, but Dr. Hill draws attention to the fact that the rapid growth of "conscientious objection" is bringing about a very dangerous condition of affairs, and that when small-pox occurs there cannot fail to be many innocent sufferers for whose treatment in the isolation hospitals the existing accommodation will be found to be utterly inadequate. As regards the control of diphtheria, it is encouraging to find greater use being made year by year of bacteriological examination, and in one of the Durham districts swabs are systematically taken from the throats of all convalescents. One medical officer of health regards the schools as the breeding-ground of diphtheria, and he thinks that the schoolmasters are too eager to have the children back to school. Enteric fever was very prevalent in Durham during 1908, especially in certain districts, and several of the medical officers of health are inclined to ascribe some of the increase to the consumption of polluted shellfish gathered in the Tees estuary. Certain of the small-pox hospitals in the county are being used, in the absence of small-pox, as sanatoriums for pulmonary tuberculosis, and it looks as if these institutions may be increasingly thus employed. The work of the medical inspection of school children in this county is carried out under the supervision of the county medical officer of health with the aid of three whole-time assistant medical officers and three nurses. The question of housing is one of special importance in the county of Durham with its large mining population, and several of the district reports deal with the subject. But Dr. Hill observes that there is still a very large number of houses occupied by the industrial classes which are inadequate for the families which they have to accommodate, and he draws attention to the objectionable old pit cottage which contains one living-room and perhaps a small back kitchen on the ground floor with a low attic which has no fireplace and which is approached by a step-ladder. These attics are very frequently insufficiently lighted and ventilated, and their condition in hot weather is little short of appalling. Apparently several of the sanitary authorities are reluctant to deal with these hovels under the Housing Acts, and when they do take action it is found that they do not always receive adequate support from the magistrates. There is the further difficulty that in most of the populous places the supply of houses does not meet the demand. Dr. Hill evidently hopes that the new Housing Act will afford him some relief, and we earnestly hope that he will not be disappointed. In the Sunderland rural district some 50 houses have been erected under Part III. of the Housing Act of 1890, and we trust that Dr. Hill will in his future reports tell us what his experience as regards these cottages has been.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8420 births and 5436 deaths were registered during the week ending Feb. 5th. The annual rate of mortality in these towns, which had been equal to 14·8 and 16·3 per 1000 in the two preceding weeks, further rose to 17·0 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these towns averaged 15·6 per 1000, and the mean rate in London during the same period was equal to 15·2. The lowest annual rates of mortality recorded in the 76 towns last week were 6·0 in East Ham, 8·0 in King's Norton, 9·1 in Willesden, and 10·6 in Bournemouth; the rates in the other towns ranged upwards, however, to 21·4 in Stockton-on-Tees, 22·3 in Liverpool, and 23·7 in Barrow-on-Furness and in Swansea. In London the recorded death-rate last week was equal to 17·2 per 1000. The 5436 deaths registered in the 76 towns last week showed a further increase of 223 upon the numbers in recent weeks, and included 354 which were referred to the principal epidemic diseases, against 278 and 361 in the two preceding weeks; of these 354 deaths, 157 resulted from whooping-cough, 67 from diphtheria, 48 from measles, 38 from diarrhœa, 30 from scarlet fever, and 14 from "fever" (principally enteric), but not one from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases was equal to 1·1 per 1000, against 0·9 and 1·1 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, East Ham, Gateshead, Middlesbrough, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·3 in Barrow-in-Furness, 3·9 in Newport (Mon.), 5·3 in Hastings, and 5·7 in West Hartlepool. The fatal cases of whooping-cough, which had steadily increased in the four preceding weeks from 77 to 165, slightly declined last week to 157; they caused annual death-rates, however, equal to 2·3 in Hastings, 2·5 in Barrow-in-Furness, 2·8 in Burton-on-Trent, 3·8 in West Hartlepool, and 3·9 in Newport (Mon.). The 67 deaths referred to diphtheria showed a further increase upon recent weekly numbers, and included 17 in London and its suburban districts, 7 in Manchester and Salford, 4 in Portsmouth, 4 in Leeds, and 3 in West Hartlepool. The fatal cases of measles, which had declined in the three preceding weeks from 61 to 52, further fell last week to 48; the highest annual rates from this disease last week were 1·5 in West Bromwich, 1·6 in Swansea, and 3·0 in Hastings. The 38 deaths attributed to diarrhœa were fewer by two than those in the previous week. The 30 fatal cases of scarlet fever showed a decline of 6 from the number in the previous week, but caused proportional high rates in Burnley, Stockport, St. Helens, and Coventry. Only 14 deaths in the 76 towns last week were referred to "fever," a lower number than in any recent week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had declined in the 16 preceding weeks from 2819 to 1993, had further fallen to 1937 on Saturday last; 213 new cases of this disease were admitted to these hospitals last week, against 204 and 193 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 2 small-pox cases on Saturday last. Of the 1607 deaths registered in London last week 392 were referred to pneumonia and other diseases of the respiratory system, against 285, 291, and 322 in the three preceding weeks; these 392 deaths were, however, 70 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 49, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, West Ham, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 45 other smaller towns; the 49 uncertified causes of death in the 76 towns last week included 11 in Liverpool, 7 in Birmingham, and 3 each in Manchester, Sheffield, and St. Helens.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 926 births and 744 deaths were registered during the week ending Feb. 5th. The annual rate of mortality in these towns, which had been equal to 16·7, 15·5, and 19·1 per 1000 in the three preceding weeks, further rose to 20·5 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these towns averaged 18·4 per 1000, and exceeded by 2·8 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 15·4 and 17·4 in Perth and Aberdeen, to 26·4 in Dundee and 29·8 in Greenock. The 744 deaths from all causes in the eight towns last week showed a further increase of 51 on the numbers returned in recent weeks, and included 100 which were referred to the principal epidemic diseases, against 77 and 99 in the two preceding weeks. These 100 deaths were equal to an annual rate of 2·8 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 1·1 per 1000. The 100 deaths from these epidemic diseases in the Scotch towns last week included 46 from measles, 16 from diarrhœa, 14 from diphtheria, 11 from scarlet fever, 9 from whooping-cough, and 4 from "fever," but not one from small-pox. The fatal cases of measles in the eight towns, which had been 37, 46, and 54 in the three preceding weeks, declined again last week to 46, and included 37 in Glasgow, 6 in Edinburgh, and 2 in Greenock. The 16 deaths attributed to diarrhœa were within one of the number in the previous week; 8 occurred in Glasgow, 4 in Edinburgh, and 3 in Dundee. The deaths referred to diphtheria, which had been 8 and 12 in the two previous weeks, further rose last week to 14, of which 8 were recorded in Glasgow, and 2 each in Edinburgh, Dundee, and Aberdeen. The 11 fatal cases of scarlet fever also showed an increase upon the numbers in recent weeks, and included 7 in Glasgow and 3 in Edinburgh. Of the 9 deaths from whooping-cough, 5 were recorded in Glasgow and 2 in Leith. The 4 deaths referred to "fever" corresponded with the number in each of the two preceding weeks; 3 were certified as enteric, including 2 in Glasgow, and 1 as cerebro-spinal meningitis in Edinburgh. The deaths in the eight towns last week referred to diseases of the respiratory system, which had been 101 and 123 in the two preceding weeks further rose last week to 150, and exceeded by 19 the number returned in the corresponding week of last year. The causes of 26, or 3·5 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 694 births and 552 deaths were registered during the week ending Feb. 5th. The mean annual rate of mortality in these towns, which had been equal to 19·1 and 21·1 per 1000 in the two preceding weeks, further rose to 25·0 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these Irish towns averaged 21·5 per 1000, whereas the mean rate during the same period did not exceed 15·6 in the 76 largest English towns and 18·4 in the eight principal Scotch towns. The annual death-rate last week was equal to 29·8 in Dublin, 22·0 in Belfast, 31·5 in Cork, 14·4 in Londonderry, 27·3 in Limerick, and 21·4 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 21·0 per 1000. The 552 deaths from all causes in the 22 town districts last week showed a further increase of 85 upon the numbers returned in the two previous weeks, and included 34 which were referred to the principal epidemic diseases, against 29 and 30 in the two preceding weeks; these 34 deaths were equal to an annual rate of 1·5 per 1000; in the 76 English towns the mean rate from the same diseases last week was 1·1 per 1000, while in the eight Scotch towns it was equal to 2·8. The 34 deaths from these diseases in the Irish towns last week included 25 from whooping-cough, 7 from diarrhœa, and 2 from diphtheria, but not one from measles, scarlet fever, "fever," or small-pox. The fatal cases of whooping-cough, which had been 18 and 21 in the two preceding weeks, further rose to 25 last week, and included 19 in Belfast, 2 in Dublin, and 2 in Newtownards. Of the 7 deaths attributed to diarrhœa, 4 occurred in Dublin, 2 in Belfast, and 1 in Cork. Both the fatal cases of diphtheria were recorded in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 107 and 131 in the two preceding weeks, further rose to 140 last week. The causes of 32, or 5·8 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent., and in the eight principal Scotch towns it was equal to 3·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet:—Oswald Mills, Leslie Miles Morris, Alexander Kenneth Smith-Shand, Norman Howard Mummery, John Fullarton, William Norman Lyndon Cherry, and Thomas William Myles (dated Feb. 8th, 1910).

The following appointments are notified: Fleet-Surgeons: E. C. Cridland to the *Illustrious*, on recommissioning; J. Menary to the *Magnificent*, on recommissioning, and to the *Bulwark*, on becoming flagship. Staff-Surgeons: H. L. Norris, lent to Royal Naval College, Osborne; J. Martin to the *Magnificent*, on recommissioning, and to the *Bulwark* on becoming flagship; H. W. B. Shewell to the *Arrogant;* E. F. Ellis to the *Wildfire*, and G. M. Eastment to the *Pembroke*, additional, for disposal. Surgeons: W. Hutcheson to the *Redbreast*, additional, and on recommissioning; W. G. Edwards to the *Black Prince;* and G. C. Cross to the *Argyll*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Jan. 28th, 1910): Edgar T. Inkson, V.C., Percy H. Collingwood, Charles J. O'Gorman, D.S.O., Robert S. H. Fuhr, D.S.O., Harold P. W. Barrow, and David Harvey.

Lieutenant-Colonel John R. Yourdi is placed on retired pay (dated Feb. 6th, 1910).

The undermentioned Lieutenants, from the seconded list, are restored to the establishment: Eustace M. Parsons-Smith (dated Jan. 30th, 1910); and William H. O'Riordan (dated Jan. 31st, 1910).

Captain John G. Berne retires, receiving a gratuity.

Surgeon-General W. W. Kenny, C.B., has arrived from South Africa and taken over his appointment as Principal Medical Officer, Northern Command. Lieutenant-Colonel A. R. Aldridge, from Simla, has been appointed Instructor, School of Army Sanitation, Aldershot. Major J. D. Ferguson, D.S.O., from Aldershot, is appointed a Recruiting Medical Officer, London District. Major C. Dalton, from Aden, is appointed Medical Inspector of Recruits, Irish Command (temporarily). Major B. J. Inniss, from Meerut, has been posted to the Eastern Command. Major C. B. Martin is appointed Registrar and Secretary to the Royal Victoria Hospital, Netley, vice Major O. L. Robinson. Major H. I. Pocock, from Kailana, is appointed to command the Station Hospital, Shahjehanpur. Captain W. B. Fry, who has been carrying out research work at the Royal Army Medical College at Millbank in connexion with the Sleeping Sickness Commission, is about to proceed to Khartoum.

INDIAN MEDICAL SERVICE.

Colonel R. D. Murray, Bengal, is permitted to retire from the service from March 29th next. Colonel W. A. Quayle, principal medical officer, Aden Brigade, is granted 60 days' privilege leave in India. Captain W. H. Dickinson has been appointed Professor of Chemistry at the Grant Medical College, vice Lieutenant-Colonel T. D. Collis Barry, retired. Lieutenant R. H. Bott has been appointed specialist in advanced operative surgery, 4th (Quetta) Division; Lieutenant V. B. Green-Armytage, specialist in midwifery and diseases of women and children, Burma Division, and Lieutenant T. D. Murison, specialist in mental diseases, Northern Army, India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List.—George Ernest Shand to be Lieutenant (on probation) (dated Jan. 20th, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—Surgeon-Major John W. Nicholson, from the 5th Battalion, The Lincolnshire Regiment, to be Major, with precedence as from Jan. 28th, 1909 (dated Dec. 24th, 1909). Surgeon-Captain John M. Duncan, from the 5th Battalion, The Lincolnshire Regiment, to be Captain, with precedence as from July 4th, 1903 (dated Dec. 24th, 1909). Harold Linton Heslop, to be Lieutenant (dated Jan. 11th, 1910).

INDIAN MEDICAL SERVICE STUDY-LEAVE.

Regulations regarding the grant of study-leave to officers of the Indian Medical Service are published in the *Gazette of India* of Jan. 7th. The following are among the important rules. Extra furlough for the purpose of study may be granted to officers of the Indian Medical Service on the recommendation of the Director-General of the Indian Medical Service. The period of such study-leave will be calculated in the case of an officer under military-leave rules at the rate of one month for each year of pension service, and in the case of an officer under civil-leave rules at the rate of one month for each year of active service as defined in the Civil Service Regulations, up to a total in either case of 12 months in all during an officer's service. Study-leave may be taken at any time, but will not be granted more than twice in the course of an officer's service. This restriction does not apply to an officer who has part of his furlough converted into his study-leave under Rule 8. The minimum period of study which will render an officer eligible for study-leave will be two months.

THE TERRITORIAL FORCE NURSING SERVICE.

At a meeting of the Executive Committee of the Territorial Force Nursing Service, City and County of London Branches, held at the Mansion House recently, it was decided to invite H.R.H. the Princess Royal to become president of the association. The Duke of Fife is the Lord Lieutenant of the County of London and Her Royal Highness presented the prizes at the Territorial sports held at the Stadium last year. The Executive Committee includes amongst its members the Lady Mayoress, the Countess of Denbigh, the Hon. Mrs. Adam, the Hon. Mrs. Charles Tufton, Lady Dimsdale, Lady Ellis, Lady Barlow, Lady Truscott, Lady Mackinnon, Lady Beachcroft, and Mrs. Kinlock.

THE RED CROSS SOCIETY.

A City of London Branch of the Red Cross Society is about to be formed under the auspices of the Lady Mayoress. Sir Frederick Treves will explain the objects of the society at a meeting the date of which will shortly be announced.

A meeting was held at the Clifton Ladies' Club last week under the auspices of the Bristol Branch of the Red Cross Society. There was a good attendance to hear Sir James R. Andrew Clark, Bart., C.B., give an address on the *raison d'être* of the voluntary aid detachment, how to raise it, and what its object is.

INDIAN MEDICAL SERVICE EXAMINATION.

In our announcement of the result of the examination held in January for commissions in the Indian Medical Service the first two candidates were placed in the wrong order, Dr. E. G. Kennedy being credited with 100 less marks than he actually obtained. The first names should have read as follows:—

	Marks.
Edward Galwey Kennedy, M.B., B.Ch., B.A.O. R.U.I., Queen's College, Cork	3629
Robert Forrester Douglas MacGregor, M.B., Ch.B. Edin., Edinburgh University, Coombe Hall, Dublin, West London Hospital	3532

OSBORNE NAVAL COLLEGE.

The serious epidemic of influenza at this institution will probably lead to its temporary closing.

Correspondence.

"Audi alteram partem."

THE STATE REGISTRATION OF NURSES.

To the Editor of THE LANCET.

SIR,—So far as I remember Mr. Sydney Holland's speech at the meeting of the Cottage Benefit Nursing Association his main contention was that registration would not ensure the provision of only good nurses. Surely no one ever said that it would; but the important point to bear in mind is that our chief trouble is not with nurses who become unfit but with nurses who never have been fit. Now, registration will ensure the nurse having had a sufficient training, and having at the end of her training been able to pass a qualifying examination (as the scope and character of this examination has not yet been fixed Mr. Holland had no right to call it "absurdly easy"), of having been of good and suitable character at the time of registering, and it will, moreover, provide afterwards supervision and control. Mr. Holland said that under the Registration Bill a nurse could not be removed "unless convicted of a serious offence ...... she might become flighty or flirty or might drink. Fancy a woman going about hall-marked by the State who took drugs or was dotty." Now this is exactly what could not happen under the Bill, for by Clause 10 the nurses' council has power "to decide upon the suspension or removal from the register of the name of any trained nurse for any breach of the rules and regulations ...... or for conduct disgraceful in a professional respect."

The same arguments were brought forward when the registration of midwives was proposed, and one need only read the reports of the meetings of the Midwives Board to see how efficient the Act can be in the control of registered midwives. But how do matters stand now if a nurse is "flighty or flirty, drinks, takes drugs, or is dotty"? No one can correct or control her or stop her nursing. After much bitter experience the public may make work impossible for her in one place, but she can easily start in another until bitter experience and calamity again find her out. If at present a nurse well known to the doctor or the patient cannot be found, and this is not infrequently the case, one has to take a stranger more or less on trust, and she may have had three years' training in a good hospital, three months in a workhouse, or no technical training at all, may be of good or bad character, temperate or intemperate. State registration would not prevent the unregistered from practising as nurses, but the very fact of its existence would make the public realise that a uniform does not make a nurse and so make them more careful to inquire about her, for there would be no bar to further inquiries any more than there is now.

Reading Mr. Holland's speech one would think that the only necessary qualification for registration was the passing of an absurdly easy examination and a good character, but the speaker should have known that in the proposed scheme a certain definite period of training in a recognised institution is essential, and, moreover, that after registration the nurse will have to report herself every year. All the arguments that have been brought forward against this reform might equally well have been used in the case of medical men; examination does not make a physician, neither does registration ensure a continuance of his suitability, his character, or his efficiency, but it does place him under the control of a powerful disciplinary body, the General Medical Council.

If, in the public interest, this is necessary in the case of medical men, surely it is now required for nurses, as, considering the importance nowadays of their work, both to doctor and to patient, it is essential that they should possess without doubt certain technical knowledge and skill. So far I have considered the question only from the public point of view, but looked at from the nurses' side there is an important point to be remembered—at present the well-trained and qualified nurse has, except personal experience, no means of making herself distinct from the untrained and unqualified pretender, the charlatan, and the adventuress.

I am, Sir, yours faithfully,

Bradford-on-Avon, Feb. 1st, 1910. CHAS. E. S. FLEMMING.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—I am glad that Mr. Sinclair White has raised the question of the use of clamps in gastro-enterostomy. I have never used them myself, but I believe that their use is almost universal. I consider their use is objectionable in two ways: first, on account of the risk of subsequent hæmorrhage; and secondly, because any application of a clamp, however temporary it may be, must damage the vitality of the stomach and jejunal walls at the point where the anastomosis is to take place.

The supposed uses of clamps are (1) to prevent the escape of gastric contents; (2) to facilitate the holding of the parts together while suturing; and (3) to prevent hæmorrhage. Gastric contents are not infective and only cause trouble if they are allowed to enter the peritoneal cavity and are retained in it; there is no danger of this in a gastro-enterostomy, without clamps, provided the abdominal opening is small, because it is completely plugged with the stomach, transverse colon, and jejunum, which have been brought out of the wound; all that can happen is that gastric contents flow over the stomach and jejunum, which produces no trouble if the parts are well washed with normal saline solution before replacing them. I have not found that the healing of the abdominal wound has been interfered with. To holds the parts in apposition while suturing, in my last 150 cases I have used guides which are passed as Lembert's stitches; these guides when held firmly apart produce a ridge which facilitates the passage of the Lembert suture, and enables me to insert a continuous suture very tightly without causing contraction of the opening.

With regard to hæmorrhage, I have had little trouble. No point requires ligature on the duodenum, and only three or four vessels in the stomach will require to be ligatured. The short time occupied in ligaturing these vessels is amply repaid by the knowledge that reactionary bleeding will not occur. I am sure that Mr. R. W. Murray need have no hesitation in dispensing with the use of clamps, and if he once gives them up, I do not think that he will ever return to their use.

I am, Sir, yours faithfully,

London, W., Feb. 7th, 1910. L. A. BIDWELL.

To the Editor of THE LANCET.

SIR,—We must all be much obliged to Mr. Sinclair White for calling attention to a grave source of danger in this operation. It would be interesting if be would tell us what clamps were used in the case he has recorded. Roosevelt's clamp, for instance, has always appeared to me a dangerously powerful weapon for the purpose for which it was designed. I have had the rachet of a pair of Carwardine's twin clamps lengthened, so as to use them with very light pressure, and Doyen's light forceps would serve the same object. Thus I have avoided using clamps with a view to hæmostasis, although Mr. Moynihan[1] advises tightening the clamps if there be oozing.

Time is often of great value, and if by placing clamps lightly time can be saved without the risk of their acting as tourniquets they may still prove valuable. I shall, however, certainly take Mr. Sinclair White's advice the next time I perform this operation and do it without using clamps.

I am, Sir, yours faithfully,

Exeter, Feb. 7th, 1910. RUSSELL COOMBE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 22nd Mr. Sinclair White relates the story of a man who died from gastric hæmorrhage following gastro-enterostomy, and in your current issue a similar accident, though with a more happy ending, is recorded by Mr. R. W. Murray, who at the same time invites others to publish their experiences of this complication. Both surgeons attribute the accident to the use of clamps, and this certainly seems to be the case in the two instances recorded. Mr. Sinclair White advocates the ligation of bleeding vessels in the submucosa before suturing, and Mr. Murray agrees with him in favouring the operation without clamps so that all spouting vessels may be evident. Mr. Murray does not state on which lip of the stoma he found the bleeding points, but as a rule it is the inferior lip of the incision in the stomach (that nearer the greater curvature) which bleeds, for the cut vessels are those running upwards from the gastro-epiploic artery. In performing posterior gastro-enterostomy this lip is sutured last. If clamps are used and the return half of the inner or hæmostatic suture is passed so as to *evert* the mucous edges (as recommended by Mr. Moynihan) any unsecured vessels at once become apparent on releasing the clamps, and may be controlled with an extra stitch before completing the serous suture.

This eversion of the vascular cut edge of the stomach is, I think, an important difference between the clamp and no-clamp operations; for those who prefer the latter Mr. Rutherford Morison has adapted a useful stitch designed to *invert* the edges.[1] In two cases I have employed fine catgut for this inner suture, and my experience of post-operative hæmorrhage is limited to the second of these, a gentleman on whom I performed gastro-enterostomy for duodenal ulcer nearly two years ago. On the day following operation about a pint of blood was vomited and the next day a quantity of altered blood was passed in the stools. This I attributed to the rapid absorption of the catgut and have since reverted to the use of thread without meeting with a return of the mishap.

I have no personal experience of the operation without clamps, nor have I had the privilege of seeing the work of your correspondents, but from what I have observed in Continental clinics it has seemed to me that the operation without clamps is less simple and clean—even in the hands of dexterous surgeons—than the operation with their aid. I do not pretend to say that one method of operation is better than another, but I do believe that the use of clamps *need* not be followed by this grave complication.

I am, Sir, yours faithfully,

Hull, Feb. 6th, 1910. HAROLD UPCOTT.

THE ACTIONS OF PITUITARY EXTRACTS.

To the Editor of THE LANCET.

SIR,—Your leading article in your issue of Feb. 5th on the Action of Pituitary Extracts based on Dr. A. Delille's monograph is sure to be much appreciated at the present time. I would like, however, to make some demur to the somewhat surprising recommendation of Dr. Delille that an extract of the *whole* gland should be used. This advice is quite contrary to what would be expected from a consideration of all published reports of recent laboratory work that have come under my notice, and experiments I have been making myself during the past few weeks lead me strongly to the conclusion that the course suggested by him is not the one best calculated to bring out the fullest information as to the clinical value—whatever it may prove to be—of this interesting body. It seems to me most desirable that physicians or surgeons wishing to test the value of pituitary extracts should not confuse results by using the whole gland, but should deliberately test, in suitable cases, the effects produced by the use of extracts of either the anterior or the posterior lobe, so that the results obtained may be accurately ascribed to whichever part of the pituitary is responsible; if subsequently it should be found that increased benefit followed the administration of the whole gland, then, of course, it should be used. My own experiments have been quite simple and for the moment have been confined mainly to noting the effect produced on the blood pressure of anæsthetised rabbits with cut vagi. In order to avoid error I have personally removed the pituitary body from the heads of sheep and oxen and then carefully and cleanly separated the posterior from the anterior lobe and had 1 per cent. sterile extracts made from each. One cubic centimetre of the extract from the anterior lobe, injected intravenously, invariably gave either no result or a slight fall of blood pressure, whereas the effect produced by a corresponding dose of the posterior lobe has always been most notable—a prolonged and striking rise of blood pressure invariably following the injection. I believe that the results I have indicated agree with what all experimenters have found to be the case, and, if that be so, it does seem regrettable that medical men should—for not very strong reasons—be advised to use the whole gland rather than attempt to get more precise scientific knowledge of the subject by using one or the other lobe in order to determine the clinical effects that may be expected from the exhibition of either. I am, Sir, yours faithfully,

---

[1] Abdominal Operations, second edition, 1906, p. 179.

[1] Brit. Med. Jour., July 10th, 1909, p. 70.

WILLIAM MARTIN, M.D. Durh.

Newcastle-upon-Tyne, Feb. 5th, 1910.

LATE TRAUMATIC SUBDURAL HÆMORRHAGE OR TRAUMATIC LATE APOPLEXY.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 6th, 1909, I was extremely interested in the two articles that appeared under the above heading, as the case (the history of which is given below) was treated in the hospital under my charge, and the assailant had received a sentence of either two or three years' rigorous imprisonment for the first offence of causing grievous hurt. As you will see from the notes, five months after apparent recovery the patient was readmitted to hospital and died there; and according to the law in India the whole case was re-tried, and my evidence in the Lower Court recorded before your publication of the above date reached me. Previous to giving my evidence I searched all available literature for something bearing on the case but with a total want of success. The only thing I could find recorded was that somewhat similar symptoms occurred in certain slow-growing brain tumours, but even in these cases the pathology was obscure. Fortunately, I had the advantage of reading the articles in THE LANCET of Nov. 6th, 1909, before giving evidence before the High Court. The following are the notes of the case:—

Ah Yaik, Chinaman, well-nourished, strong man, age 24, admitted Dec. 22nd, 1908. Said to have been struck on head with a heavy stick. A contused wound on front of head 1″ × ¼″. An extensive contusion on right side of head, in temporal region, about 4″ in diameter. Patient semi-unconscious, with slow, irregular pulse of 45 per minute; no paralysis; pupils equal. Trephined and found depressed fracture. Bone elevated and one loose piece removed. There was rupture of the middle meningeal artery and the dura mater was badly torn and the brain injured. Clot and brain matter were removed and artery tied. Later on a small hernia occurred, but eventually the protruding brain matter granulated up, and man left hospital cured on 2/2/09. As a matter of fact, though the wound was healed, it was only just so, and patient should have remained much longer in hospital, but it was impossible to keep him. To all appearance he was quite well when he left and had no physical signs of ill-health.

On 8/8/09 he was readmitted complaining of inability to walk, the history given being that since leaving hospital he had up to 10 days prior to readmission been in good health and carrying on his occupation as a carpenter. He was fully conscious and spoke intelligently about his condition, his only complaint being that he could neither stand nor walk. Sitting on the side of the bed he could flex thighs on body, but could not with the thighs flexed extend the legs; both knee-jerks were absent; there was no ankle clonus and Babinski's reflex was not present. He could move his legs fairly freely in bed. His hand grips were weak, the right more so than the left. Muscles flabby, but no visible signs of atrophy; electrical reactions not tested. Appearance a little dull; hands and feet looked puffy, but there was no œdema. Pupils normal. Sensation to pain dulled and delayed, and below the knees sense of touch appeared to be absent, but it was difficult to make sure. His symptoms rapidly increased in severity and he began to complain of pins and needles in legs and feet. This latter form of pain became very severe. The calf muscles became tender to pressure, but no rigidity occurred. Up to 25/8/09 he was fairly bright, but on that morning he looked stupid and heavy, and on being asked to sit up he did so, but allowed his chin to sink on to his breast. On the evening of the same day I was sent for, as patient had suddenly collapsed. On arrival at hospital he had been brought round with stimulants, &c., but was looking very badly. The skin over the old trephine hole was being forced outwards by pressure from within and was pulsating violently, and appeared almost bursting from the tension. He was put on table and the old flap of skin turned down once more. The old brain scar was adherent to its under surface but nothing else was found. A sinus forceps was passed in one or two directions for some distance into brain without result, so a dressing was applied and patient put back to bed. He recovered full consciousness but died the same night, 9.50 P.M., complaining for some time before of tightness in the chest over the heart region.

A post-mortem examination was made, at which the dura mater was adherent by its edges round the margin of trephine hole, the brain in this situation being uncovered by dura mater. On opening the latter membrane the vessels of the brain were highly engorged and blood flowed in a stream over the right side of the brain, and the same condition was present on the left side. It appeared to be due to free venous oozing; longitudinal sinus was empty. The vessels of base were also engorged, as were those of the cerebellum but to lesser extent. The whole of the base of skull (inside dura mater) was full of dark liquid blood. Behind the junction of the fissures of Rolando and Sylvius the brain was lacerated to a depth of about ½″. The fissure of Rolando was markedly open as compared with the opposite side.

Personally, I have never before met with such a case, and was extremely worried as to what evidence I could give in court. The history of ten days' illness before readmission cannot be absolutely relied on, as such a patient would only come to hospital when incapacitated from carrying on his daily work; but even allowing something for this, the lapse of eight months seems to be an almost record time for symptoms resulting in death to have followed the original injury.

Since writing the above another case has come to hospital with an almost similar history of being beaten with a heavy stick. He complained of dimness of sight, fever, giddiness, had four slight abrasions on right side of face, and two abrasions of left side of neck, all very trifling, and the assault took place three days before admission. While in hospital his chief symptom was persistent headache, but he appeared to be going on well, until suddenly and without warning on the fifth night after admission he got a convulsive seizure with twitching and convulsions in all his limbs, and died within three hours. On post-mortem examination there was no injury to the bone, but the brain was in the same condition as the previous case—viz., acute inflammatory œdema. There was evidence of subarachnoid hæmorrhage, and a clot was found in the third ventricle. I have not yet been called to give evidence in this case. Both the above cases appear to be on a par with the cases given in your issue of Nov. 6th, 1909, and both from a surgical and medico-legal point of view appear to be of extreme interest.

I am, Sir, yours faithfully,

Bassein, Burma, Dec. 14th, 1909. P. DEE, Major, I.M.S.

ENTERIC FEVER IN INFANCY.

To the Editor of THE LANCET.

SIR,—The case recorded by Dr. Alice Oberdorfer in THE LANCET of Jan. 29th affords ample material for thoughtful study, and in connexion with it the following brief notes may be of interest.

A female child, aged 11 months, came under medical treatment for a somewhat indefinite illness, the exact significance of which was not apparent. She had been out of sorts for ten days or so and was disinclined for food. The bowels tended to be loose, and occasionally the alvine discharges were markedly diarrhœic. On coming under medical supervision it was found that the child had a temperature which varied between 101° and 104° F. After ten days' treatment no progress had been made, and as the mother was much worried by the child's fretfulness at night she was sent into hospital for observation. Very little could be made out. The temperature was high, and there was generally a difference of two or three degrees between the morning and evening temperatures. There was no diarrhœa; indeed, the bowels tended to be constipated. The child was very cross and fretful and cried a good deal. It was difficult to say whether or not she was suffering pain, but the impression one got was that the cry was due to temper, not to pain. The abdomen was slightly tympanitic on percussion. Palpation was most unsatisfactory, as the child always cried when this was attempted, with the result that the abdominal muscles were more or less rigid. After making allowance for this, it seemed probable that the abdomen did not possess that elasticity and "doughy" feel met with in the healthy child. The child took all the food that was given to her and was not sick. There was no rash on the abdomen or elsewhere. The heart, lungs, and urinary system were healthy. The child had thus merely a high temperature, the cause of which was obscure. After having observed the case for two or three days a specimen of blood was sent for the Widal test which was reported positive. The result occasioned some surprise and so a second specimen was sent, but the reaction was again reported as positive. I made careful inquiries as to the nature of the reaction and I was informed that the reaction was neither doubtful nor delayed, but that "clumping" took place at once and all the evidence pointed to a typical positive reaction.

We are thus confronted with the problem whether a diagnosis of typhoid fever should be made on the evidence of Widal's test. Clinically the various points were not such as to justify a diagnosis of typhoid fever, and even with a positive Widal reaction the clinical evidence is very weak. It is generally admitted that typhoid fever, although very rarely met with in infants under one year of age, is not unknown. It is also a well-known fact that in infants and young children typhoid fever never runs the typical course which one associates with adult life. In view of the above case one is inclined to make the suggestion that in children who run a temperature, any definite cause for which cannot be found, and who suffer from vague abdominal symptoms, the Widal test should be carried out. A provisional diagnosis might thus be made, and by adopting suitable precautions secondary cases of typhoid fever might be prevented. So far as I know there were no cases of enteric fever that could be traced as being secondary to this possible case of enteric fever in an infant. This does not, however, prove that it could not have been enteric fever.

I am, Sir, yours faithfully,

Edinburgh, Jan. 31st, 1910. J. ALLAN, M.D. Edin., D.P.H.

THE FLOODS IN PARIS.

(FROM OUR OWN CORRESPONDENT.)

THE Academy of Medicine did not meet last week owing to the interruption of the electric light and the heating arrangements, but the consulting committee of hygiene of the department of the Seine has held a meeting. The municipal laboratory has been consulted, and the Prefect of the Seine has issued a notice, which has been placarded in all parts of the city, ordaining that as the floods recede from the inundated premises the proprietors shall within 24 hours of the subsidence of the water take measures to bring their premises into a sanitary state and to prevent infection. The owners of house property will have to satisfy the architect of the streets department of the arrondissement as to the execution of the work, and must carry out all the instructions which they may receive with respect to the sanitary state and the structural security of the premises. The prefect of police, who by the law of 1902 has charge of the hygiene of the *banlieue*, has made a similar order for the disinfection of the other inundated localities of the department of the Seine. For several days water-carts filled with disinfectants have arrived on the scene accompanied by a staff of workmen. The men and the materials are immediately sent to various points on the margin of the area fouled by the floods, and the streets have been thoroughly sprinkled with disinfectants, in accordance with the information which I gave your readers last week. The architect of the streets department is undertaking the cleansing and disinfection of the courtyards and ground-floors of houses. These proceedings are received by the people with hearty goodwill. The disinfectants are applied by hand sprinklers as well as by water-carts.

(FROM A SPECIAL CORRESPONDENT.)

FROM a financial point of view the cost to Paris of the recent floods will be enormous, but they have elicited a manifestation of what has been termed "obsidional solidarity" which proves once more that in the presence of public calamity all private dissensions can be forgotten, and which has shown the Parisians at their very best. From a medical point of view the flood would seem to have caused great inconvenience but relatively little harm. It became necessary, as you have heard, to evacuate the Boucicaut Hospital, which was entirely swamped, and the patients were transferred to Laennec, Necker, and elsewhere. From the Ivry asylum for the aged the 2000 occupants were removed to Bicêtre and the Salpêtrière. Those of Alfortville and Gennevilliers were also transferred to other establishments. The Charité in the Rue Jacob, which, like many of the adjoining streets, and particularly the Rue Visconti, was changed into a canal, had its basements flooded, but no further damage was done. At the Salpêtrière the laundry, which supplies also the St. Louis and Lariboisière, and which turns out daily 25,000 kilogrammes of washing, was entirely disorganised. The Hôtel-Dieu being on the Ile St. Louis was naturally greatly exposed, and the director, M. Coq, very courteously took me round and related what had occurred in his hospital. Here, again, the water came from underneath, and in the night of the 27th the kitchens and cellars were swamped, a gang of *sauveteurs* being hastily requisitioned to remove material and stores. A provisional kitchen still in use at the time of my visit had been erected in the upper court under a tent. In the lower one, which was flooded, the service was effected by boats. As elsewhere, the steam-heating apparatus being under water, it became necessary to adopt other means for warming the hospital, and 25 stoves were purchased immediately for the wards. At St. Antoine the same trouble occurred as at the Hôtel-Dieu about heating, and 3000 francs were spent upon stoves. Beyond these slight inconveniences the patients did not suffer, their only privation being a shortage of milk, of which the supply from the flooded country was reduced to about a quarter of the usual quantity. In prevision of possible illness 1000 extra beds were prepared for the reception of patients in the Paris hospitals, but so far there has been no increase over the ordinary morbidity. Those rescued from the flooded districts have only been received in the hospitals when really ill, and there has been no necessity for transforming them into refuges. The charity and philanthropy of all classes have been remarkable; not only has money been contributed unstintingly, but sympathy, kindness, and hospitality have been universal.

At the Bureau d'Hygiène and Préfecture de Police further details have been obtained concerning the sanitary outlook. A great many exaggerated statements have been made in the press about the main drainage, which was said to have been burst open in several places and to have discharged pestilential contents in the soil, basements, and cellars, and in this way to have infected the water-supply. According to my information, only one rupture has occurred. The main drain, it may be said, is an arched tunnel, in the upper part of which run the gas and water pipes, receiving in its course the discharge pipes from the houses, and the rainwater from the streets. After the flood had attained a certain height, the pressure from the inside of the drain, full to overflowing, prevented complete discharge of household sewage, which in some cases gave rise to offensive smells but nothing further. The integrity of the drains has been shown by the fact that no interference has taken place in Paris itself with the gas- or water-supply. M. Bienvenu affirms that in the one exception alluded to, that of the Place du Havre, the rupture of the main drain rather than infiltration was the immediate cause of the inundation. This was not caused, it is said, by any fault in the drains, but by their weakening in consequence of the adjacent borings of the Nord-Sud-Métropolitain. The flush water of the Bièvre, which made its entrance at the Boulevard St. Germain, was conveyed by this channel under the Seine to the central station in the vicinity of the Gare St. Lazare, where, breaking through the recent masonry, it flooded the other tunnels.

Concerning the probability of an epidemic, which is anticipated by some alarmists, it is the opinion of the sanitary authorities that an outbreak of any grave sort is out of the question. Concerning typhoid fever, Paris, it should be said, is supplied with two kinds of water, the first drinkable from the Vanne, the Dhuys, and other springs; the second taken from the Seine, and always more or less contaminated bacterially, which is only substituted for the former in times of extreme drought, when notice is always given to consumers. It is admitted that the overflow of the Seine may possibly have contaminated the purer supply, but this risk can be attenuated by boiling the water, and the importance of this precaution is fully recognised by the population. Besides this prophylactic measure the completest disinfection is being carried out of all buildings that have been submerged, and the streets are now being treated by cresyl, chloride of lime, or carbolic acid wherever disinfection is necessary. With commendable despatch the work of preventive sanitation began as the water began to drop. Every spot that has been touched by the flood will be overhauled completely, and whatever money is required will be spent for this purpose.

With the exception of interference with public services not yet entirely reorganised, such as the Metropolitan Railway, electric lighting, the telephone, and of course the river traffic, Paris is rapidly recovering its usual aspect. The Place du Havre, so recently a swamp, is guarded by the military while I write, and what with the total cessation of traffic and business, the yawning chasms in the road, the absence of light in the evening, the approach to the Gare St. Lazare presented a truly sinister picture to my eye. The surface water had disappeared, but the ground was still saturated with damp and the air was chilly with moisture: "It reminds one," said a man who was watching the picket preparing their "*popote*," "of the siege," and this was exactly the impression that it gave. This impression was heightened by the open-air kitchens in improvised *baraques* and tents, in the vicinity of which large crowds of hungry applicants waited their turn under the eye of the police. It has been noted that the temper and psychology of the population have all along been excellent, the predominant note having been resigned cheerfulness. There has been no serious shortage of food, and although some fear was felt at the height of the flood, any distress or hardship in the inundated districts has been due to the difficulty of revictualling those who refused obstinately to leave their home. It was only natural that the criminal classes should seek to take advantage of the situation and attempt to pillage deserted tenements, but thanks to the sailors, who are universal favourites, and to the vigilance of the police, the Apaches have not been particularly successful. When caught, moreover, they have been shot, hanged, drowned, with the alacrity of Western America.

As epilogue to the national disaster, numerous schemes for the prevention of its recurrence are on foot. Paris, the reader may be reminded, is built on the convexity of a loop of the Seine, and the recent subsidences in its honeycombed soil, even before the inundations, have shown the danger of future infiltrations. One of the remedies suggested is the construction of an underground canal to follow the chord of the arc of the river. If this were done, exceptional risings of the Seine at Paris would, it is said, be averted, the irrigation of the land along the watercourse would greatly increase its fertility, and the cost of the work once for all would be less than that of the recent catastrophe. It has also been proposed (but this is an old idea) to make an open canal, and other plans more or less Utopian, but which will have no immediate interest, will no doubt be suggested.

The practical conclusion from a medical point of view is. however, that there is little danger of an epidemic. I repeat the deliberate opinion of our sanitarians in saying this, upon which it follows that foreigners can come to Paris as usual without risk.

Paris, Feb. 3rd.

⁂ We hear that owing to a renewed rising of the river, and consequent re-flooding of certain districts, the work of systematic disinfection has been necessarily suspended in places.—ED. L.

THE DRAINAGE OF ALEXANDRIA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE scheme for the thorough draining of Alexandria has now been adopted by the Municipal Commission of that town and accepted by the Egyptian Government. It is the work of Mr. D. E. Lloyd-Davies, M.Inst.C.E., chief engineer of the municipality of Alexandria, and it required nearly two years to prepare. I venture to express an opinion on so complex and important a scheme without studying the details on the spot, because the author has very courteously sent me elaborate and full reports of his proposals, accompanied by estimates, maps, and charts. From these documents I can describe, if I cannot criticise, his plans.

A drainage scheme is not merely a matter of hydraulics and of engineering. The sociology of the locality, as well as its topography, has to be studied. We must know a great deal about the habits and customs of the people before a wise decision can be taken in regard to the most practical system of drainage. In Egypt this phase of the problem is particularly difficult, because there are not only so many races and peoples living there, but, under the Capitulations, these people are governed by different laws and can only be prosecuted through their respective Consulates.[1] How far this somewhat chaotic state of affairs is modified by the fact that—unlike, for instance, Cairo—the great port of Alexandria has a municipality would be a very interesting subject of study. In Egypt some towns are governed by an elected municipality, while for other towns the local authority is appointed by the central government. This, then, is a good opportunity of ascertaining from actual practice which of the two systems gives the best results. Obviously the successful application of a system of drainage depends on the character and capacity of the local authority that has to attend daily to the details of its application. To judge such questions it is necessary to be on the spot, and to be there for some considerable time. But the character and habits of the population constitute an equally important factor, and we have at Alexandria a high-class and a low-class European residential population belonging to various nationalities. Some of these Europeans are able to appreciate the advantages of good sanitation and others are utterly ignorant and indifferent. Then there is the native Egyptian population, and it seemed to me they could be more easily managed, because they are a very docile people and the whole of their religious education teaches the most scrupulous personal cleanliness. Nevertheless, when I was in Cairo fears were expressed to me by several Europeans that the native Egyptians would not make the proper use of sanitary accommodation if the houses in the native quarters were connected with public sewers. Mr. Lloyd-Davies in his report confirms my view that such fears were ungrounded, and this, not as a matter of opinion, but as the result of practical experience. In describing his drainage scheme he says:—

> There appears to be a general idea that the house connexions—that is, the drain conveying the sewage from the house to the sewer in the street—should be of a different design in Egypt from that generally adopted for Europe. I have now had over two years' experience with connexions in this country, and during that time some 477 connexions have been made to the existing sewerage system, of which 75 per cent. are to native households. Most of these have been constructed on European lines, and I have received no complaints as to the way they work. In fact, the Egyptian house drains ought to work even better than the European, for the reason that the natives observe customs of cleanliness each day which do not exist everywhere in Europe, and they prefer for toilet purposes to use water when it is at their disposal rather than any other method.

This valuable experience has been acquired at Alexandria because, though there is no general system of drainage for the entire town, some sewers have been built from time to time. Several of these sewers are only fit for surface drainage or rain water; nevertheless, a certain number of private houses were connected with them. Thus the experience mentioned above has been acquired. Now it is proposed to apply in the low-lying districts the separate system. The rain water will be drained off to the nearest natural outfall by large sewers. The sewage proper will flow from the houses into small drain-pipes and reach, by gravitation, the nearest pump. Nine such pumps will be placed in the lowest-lying centres, and from these points the sewage will be raised to a higher level and into an ordinary gravitation sewer. The motive power for the pumps will be electricity, and the fuel employed crude petroleum. As Egypt is nearer to the oil than to the coal-fields, petroleum is considered the cheapest fuel. The greater part of the town, however, can be drained by gravitation, and here no pumping will be necessary. Consequently, the separate system will not be applied in these districts. Rain, waste, and sewage water will all descend into the same sewers, and flow together to the general outfall, relieved only by a few storm overflows.

In planning these sewers many complications arise. First, there is the fact that in some parts of Alexandria the population does not exceed 25 persons per hectare, while in other neighbourhoods it amounts to 758 persons per hectare. Then it does not suffice to provide for the actual population, but allowance must be made for the probable increase. Again, in providing for the rainfall it is not the amount of rain per day but the maximum storm downfall occurring in the space of only a few minutes which causes the greatest difficulty. Nor is this all: of even greater importance is the nature of the ground which receives the rain. If it falls on a roof, on asphalt, or any other sort of watertight surface, then the entire volume of the water will at once flow into the sewer, which must be large enough to hold it. But if the ground is for the most part utilised as gardens surrounding villas, then the water will sink into the earth and only a small portion will reach the sewer. In regard to this problem, Mr. Lloyd-Davies made some experiments at Birmingham. There he found that in a quarter consisting of block-buildings with paved courtyards and streets, 90 per cent. of the rain that fell reached the sewer. In a suburban district partially built upon, and where the houses were surrounded by gardens, only 17 per cent. of the rain found its way to the sewers. If sewers are laid on this latter basis, then, when building operations extend in the suburbs, they will be no longer big enough. On the other hand, if in view of an increase of population the sewers are made too large, then they do not receive enough water to clear them out, and a sewer that is not self-cleansing soon becomes a nuisance. Experiments of this sort were made at Alexandria and they showed that the amount of rain reaching the sewers varied from 30 to 90 per cent. according to the permeability of the ground on which it fell. It was only after these experiments had been concluded, the nature of the rainfall ascertained, and all the levels carefully noted, that the size of the sewers could be determined. So far as possible the tendency has been to adopt the smallest practical size, for the double reason that the smaller the sewer the cheaper the sewer and the more easy it is to make it self-cleansing.

---

[1] THE LANCET, June 19th, 1909, p. 1784.

Perhaps the most difficult of all problems was to find a suitable outfall for the sewage. There is at Alexandria no desert near at hand, as there is in the case of Cairo, where no one lives and where experiments in sewage farms can be made without fear of creating a nuisance. On the other hand, there is the sea, but it is an almost tideless sea, and there was good reason to fear that the sewage would cling to the shore, spoil the bathing, and corrupt the atmosphere. Experiments showed that from the promontory of Selsileh corks and other objects used as tests were thrown up on the bathing place at Chatby and Ibrahimieh. Therefore it was necessary to go to the end of the promontory that reaches the farthest out into the sea, and bring the main collector down to the shore between the forts of Kaied Bey, the ancient Pharos, and El Adda. Even this was not safe, but fortunately it was found that by going out into the sea about a quarter of a mile deep water was reached, and here there were more flow and movement. In these deeper waters it is thought the sewage will be sufficiently diluted to be purified. Here the slight tide determines a current that runs some two miles eastwards and then backwards in a western direction towards the open sea. Tidal movement, of course, is calculated to assist the oxidation of the organic matters besides diluting the sewage. By carrying the sewer outfall 800 metres out to sea the deepest part of the submarine valley would be reached. Here the sewage before it floats up to the surface must travel upwards 19 metres, and it is calculated that this would dilute the sewage by 16 times its volume. Before it could reach the nearest shallows near the shore it would undergo a further dilution of from five to ten times its volume. Finally, if it should prove in practice that these theories in regard to purification by dilution with the sea water do not give the good results anticipated, it would be possible to treat the sewage before letting it flow into the Mediterranean. Between the forts Kaied Bey and Adda, where the main collector reaches the sea, the water is so shallow that it would be an easy matter to reclaim some of the land. Here then, and without disturbing any existing property, a large site just by the outfall could be created, where filtering beds or any other method of purification could be applied to the crude sewage before it is allowed to mix with the sea water.

Thus we are now promised that Alexandria as well as Cairo is to have a complete system of drainage. For some 15 to 20 years projects have been brought forward, and there has been a great deal of talk. Now at last it seems as if the people of Alexandria are about to pass from words to action. Incalculable benefit will result. Alexandria has a very high death-rate, and all experience points to the sure result of good drainage. This invariably means a reduction in the sick-rate and in the death-rate, so that the cost is amply refunded by the improved vitality of the population. It is to be hoped that no further time will be lost, but that the scheme now accepted will at once be applied.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Health of Liverpool: Death-rate Comparisons; Three Cases of Small-pox.

THE mortality in Liverpool last week was 18·2 per 1000, against 19·3 per 1000 for the corresponding period of last year. There were 805 cases of infectious disease in the city hospitals, including 3 cases of small-pox, 566 of scarlatina, 20 of typhoid fever, 21 of measles, and 39 of diphtheria. The health statistics for the city during 1909 are very satisfactory. The death-rate for 1909 of 18·3 per 1000 was slightly below that of 1908, and compares very favourably with that of 24·8 per 1000 in 1895, the first year of "Greater Liverpool." If the rate of 1895 had prevailed last year 4900 more persons would have died. The death-rates for phthisis and for infectious diseases were the lowest on record.

Liverpool Royal Infirmary.

The annual meeting of the trustees was held in the board room of the infirmary on Feb. 2nd under the presidency of Sir William H. Tate, Bart. Mr. Ralph Brocklebank, the chairman of the general committee, said the effect of the political situation had been looked upon with some apprehension. Happily, so far, their means for maintenance had suffered in no material way. Notwithstanding increased demands upon all for national purposes he was confident that those who could afford it would continue to maintain the voluntary system, and so avoid the misfortune of the hospitals coming on the rates. At the same time help towards a building on the part of the municipalities seemed legitimate, and the committee was looking forward to a contribution of £5000 from the corporation at no distant date. Alluding to the new out-patient department, Mr. Brocklebank said that everything had been done to make the building as perfect as possible and to ensure economical working. Touching on the ex-Lord Mayor's scheme for a council of voluntary aid to prevent imposition and overlapping, he thought it was a step in the right direction calculated to give increased confidence to the public, while financially and in management each institution would maintain its independence. Mr. Brocklebank paid a warm tribute to the medical and surgical staff. The nursing staff had increased from 83 in 1899 to 98 last year, though the number of patients had remained the same; that showed the greater attention which was now being given to each patient. Thanks were also due to the permanent officials who so loyally helped the committee for the general welfare. Mr. Brocklebank proposed a vote of thanks to Sir William Tate for his services during the year as president and for his handsome donation of £500, remarking that they were grateful to him for many benefactions. The treasurer, in seconding, said that Sir William Tate had also contributed 1000 guineas towards the out-patient department building fund. Sir William Tate responded, and moved the election of the Earl of Sefton as President for the ensuing year. Mr. George Warren seconded and the resolution was carried with acclamation.

Crippled Children of Liverpool: Medical and Surgical Relief.

The valuable operations conducted in Liverpool by the Invalid Children's Association attracted to the Town-hall a numerous company of ladies and gentlemen at the second annual meeting of the association. The Lord Mayor presided and proposed the adoption of the report and statement of accounts. His lordship spoke of the need for such an organisation as the Invalid Children's Association, and said that as a member of the city council he had had some experience of its work. The education committee gave instruction in the special schools to children who were physically or mentally defective, and they also fed them. They could only do that, however, whilst the children were of school age, and the law would not allow them to spend any more public money upon them. The committee had found that these children required more care than they themselves could give, and it was here that the work of the association came in. He strongly commended so noble a charity to the sympathetic support of the Liverpool public. During the year 1909 532 new children had been reported to the association, making a total of 1196 now claiming and receiving care. The association spared no pains to secure thorough and effective treatment for each child brought under its care, at the same time stimulating the parents to coöperate, so that the relief granted to the child might in no wise tend to undermine the family independence. During the last year 750 cases had been dealt with by the case committee, 210 children had been supplied with surgical apparatus, 104 spinal carriages had been lent out, while 246 children had been sent away for periods varying from 1 to 12 months, according to medical advice. Of these 170 had been sent to the West Kirby Convalescent Home, the remainder to the Children's Rest, the Children's Country Hospital at Heswall, the Freshfield Sanatorium for Children, Blundellsands Cottage Home for Children, the Eaton House

Convalescent Home, and boarding-out cottages at West Kirby. The Bishop of Liverpool, Mr. J. G. Legge, the director of education in Liverpool, and others warmly eulogised the work which the association is doing to alleviate suffering among children in Liverpool.

Liverpool School of Tropical Medicine.

The secretary of the school has received a communication from the Compagnie des Chemins de Fer du Congo Superieur aux Grands Lacs Africains at Brussels that their council of administration, desiring to coöperate with the most useful work which the School of Medicine is carrying on, has decided to allot to it a new subsidy of 5000 francs, which was enclosed in a cheque.

Feb. 8th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

Railway Travelling and Infectious Disease.

AT the last meeting of the West of England and South Wales Branch of the Society of Medical Officers of Health Dr. J. Howard-Jones drew attention to the probable connexion between railway travelling and outbreaks of infectious disease the source of which it seemed impossible to trace. Our railway systems, in his opinion, were fruitful means of the transference of infectious diseases from one town to another. He gave instances which had come to his knowledge recently showing that fresh outbreaks could be started in a town, and also that railway travellers were only imperfectly protected from contact with infectious disease. These included the removal of a child who was suffering from scarlet fever by train from a distant health resort to Newport, the medical attendant and the local sanitary authority acquiescing, but no special arrangements being made with the railway company. Another instance was that of a child with measles who was removed by train from another health resort, and in this case also the idea of making special arrangements for the protection of the travelling public was apparently not entertained by anyone. Two instances of children travelling while in the acute stage of whooping-cough were cited, and one of a sailor who went by train to Newport direct from a vessel in a British port on which two outbreaks of small-pox had occurred during the last voyage. The man was ill on arriving at Newport on a Saturday evening and early the following Monday was admitted to the small-pox hospital with a well-developed rash. There can be little doubt that he must have been a source of danger to those with whom he had come in contact from the time he had left his ship. Similar instances were given which had come to the knowledge of other members of the society, including one referred to by Dr. W. G. Savage, that of a man who was found on arrival by train at Cardiff from the north of England to be suffering from plague. There appear to be some difficulties in dealing with railway passengers who are found to be suffering from non-notifiable diseases, but Dr. D. S. Davies stated that he had obtained a conviction before the Bristol justices against a person who had wilfully exposed a child in a public place while it was suffering from measles.

Increased Pauperism in Bridgend.

The great increase which has taken place in recent years in the amount of outdoor pauperism in the Bridgend and Cowbridge union was referred to at the last meeting of the board of guardians by Mr. H. R. Williams, the Poor-law inspector of the Local Government Board for Wales and Monmouthshire. There has been an increase in this form of relief amounting to more than £4000 in four years, although there has been no particular slackness of employment in the district. In his last annual report to the Local Government Board Mr. Williams referred to the evil results of insufficient inquiry and to the need for thorough investigation into all cases for relief. He considered that the closest inquiry and investigation were necessary if the undeserving cases were to be successfully winnowed out. In Newport there is a revisory outdoor relief committee which deals with all outdoor relief cases. In addition to the general investigation which is made by the relieving officer in whose district the applicant for relief resides, a special inquiry is made by another officer. Mr. Williams points out that this strict surveillance, in addition to checking fraudulent applicants, has benefited some deserving cases through increased grants and has had a good effect in increasing the number of those whose relatives would rather contribute directly towards their maintenance than be compelled to do so through the board of guardians.

Health of Cardiff.

The preliminary vital statistics which the medical officer of health, Dr. E. Walford, has reported to the Cardiff health committee show that in 1909 the birth-rate of the city was the same as that which the Registrar-General has recorded for the 76 great towns—25·7 per 1000. The death-rate from all causes was the lowest yet recorded in Cardiff—namely, 13 per 1000, compared with 14·7 in the great towns and with 14·5 in the whole of England and Wales. The rate of infantile mortality in Cardiff was equally satisfactory. It was 103 per 1000 births, compared with 118 in the great towns and with 109 in the whole country. The zymotic death-rate, which was 1·42 in the great towns and 1·12 in England and Wales, was only 0·87 in Cardiff, a rate lower than has yet been recorded.

Brecknockshire Public Health.

At the last meeting of the Brecknock county council a committee was appointed to report to the council on the question of appointing a medical officer of health for the county as now required by the Housing, Town Planning, &c., Act. Mr. D. V. Rees, medical officer of health of the borough of Brecknock, has been acting without salary as county medical officer of health, and Mr. T. P. Thomas, one of the three medical officers of health of the Brecknock rural district, has recently been appointed for six months as school medical officer for the county. The medical inspection of school children in the county has been carried out by local practitioners on varying terms. At the same meeting the difficulties attending the administration of the Midwives Act were discussed. The area of the county is 475,000 acres, or very nearly that of Surrey, and the population is about 65,000, or about one-thirtieth of the population of Surrey. Amongst such a scattered population it has been found almost impossible to induce qualified midwives to take up work in the county owing to the inadequacy of the remuneration where this is dependent solely upon fees. The county council decided to petition Parliament to amend the Midwives Act in such a manner as to make it obligatory upon a midwife to attend any case within her district to which she is called; to enable the local authority to pay a midwife a reasonable salary, and to collect all fees payable for the midwife's services. The counties of Brecknock and Radnor already supply very large populations with water: Radnor to Birmingham, and Brecknock to Cardiff, Swansea, Merthyr Tydvil, and Aberdare. In the next session of Parliament powers will be sought to obtain still further supplies from the latter county for the districts of Mountain Ash in Glamorgan, and Abertillery, Abercarn, and Risca in Monmouthshire.

Feb. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow Parish Council and Phthisis Cases.

THE Glasgow parish council has been, and is still, experiencing some difficulty in coming to a definite arrangement with the corporation of Glasgow as to their relative degrees of responsibility in dealing with cases of phthisis occurring in the city. The position of the parish council is that all patients suffering from phthisis who are unfit to provide for themselves on account of their condition have to be taken in and cared for by the parish council, and not only that, but provision has generally also to be made for their wives and children. On the other hand, it is outside the powers of the council to give treatment or do anything to prevent the development of the disease in a man who, though suffering from phthisis, is yet fit for work and able to earn his living. The result is that the parish council has to stand by while the disease is in its rudimentary and curable stage, but when the disease is in its advanced and practically incurable stage then the parish council is expected to make every provision. The parish council thinks that in the early stages it is the duty of the corporation to take active steps, and with a view to compelling it to do so the matter was put before the Local Government Board to get its opinion before instituting legal proceedings against the corporation. The Board has now communicated with the parish council and advised it not to take the matter into court, although prepared to support it in any other endeavour to secure more satisfactory arrangements for dealing with phthisical cases in Glasgow. It is to be hoped that in view of the modified attitude of the corporation in adopting compulsory notification of phthisis, and arranging for district tuberculosis dispensaries, some of the burden may be lifted off the shoulders of the parish council. An interesting report has been issued to show the number and the cost of patients chargeable to the parish on Nov. 15th last. This shows that in Stobhill Hospital there were 210 phthisical patients, costing 9*s.* 4*d.* per head per week; in the Eastern Hospital 16, at a weekly cost per head of 16*s.* 4*d.*; in Oakbank Hospital 15, at 18*s.* 8*d.* per week; and in Barnhill 27, at 4*s.* 8*d.*; the total annual cost of the patients being £6831 1*s.* 4*d.* The wives and children on the outdoor roll whose husbands or parents were in hospital numbered 119, at a cost of £13 16*s.* 6*d.* per week, or £718 18*s.* per annum, and there were also five males on the outdoor roll in receipt of £85 16*s.* per annum. Including dependants the average cost per head was about 7*s.* 6*d.* per week, while excluding dependants it amounted to about 9*s.* 9*d.* per week.

Royal Hospital for Sick Children, Glasgow.

At the annual meeting of subscribers to the Sick Children's Hospital the report submitted showed that the number of cases treated during the year was 1012, as compared with 1078 in 1908. There were 152 deaths, the percentage of deaths to the total number discharged being 15·72, but excluding 47 children who were so ill when admitted that they died within 48 hours the percentage was reduced to 10·79. The attendances at the dispensary were 51,594, as against 50,776 in the previous year. The ordinary income for the year was £7387 12*s.* 3*d.*, and the ordinary expenditure £7627 14*s.* 2*d.* With regard to the new hospital the rebuilding fund now amounts to nearly £94,000, and the directors are appealing for donations to make up the balance of £26,000, which it is estimated will be required to carry out the project. The plans for the new hospital provide for the ultimate erecting of a 300-cot hospital on the excellent site purchased by the directors amounting to fully 10 acres.

The Diphtheria Outbreak in Keith.

The investigations of Dr. R. S. Turner, medical officer of the burgh, on the recent epidemic of diphtheria in Keith showed the following facts: (1) the occurrence of 24 cases of diphtheria in 11 houses, all of which were supplied with milk from the same dairy; (2) no cases notified from houses not supplied by that dairy; (3) four days after the last milk from that dairy was supplied the epidemic ceased; (4) the illness of a milker who milked the cows in the dairy three times a day for some time before the supply was stopped; (5) that this milker was found to be suffering from nasal diphtheria; and (6) that no diphtheritic infection had been traced to the cows.

Sidlaw Sanatorium: Assistance from the Town Council.

The directors of the Dundee Royal Infirmary had the question of the sanatorium again under discussion on Feb. 3rd. The meeting decided to communicate with the town council on the question of the corporation giving assistance to the institution. The letter pointed out that the directors hoped to work the institution with 40 beds at a cost of about £2500. Towards this amount they could themselves account for £1950, which left a deficit of £550. The directors asked the council to assist in meeting this shortage and suggested that the corporation's help would best take the shape of a guarantee extending over the period covered by Mr. Caird's gift of a minimum of seven patients at 30*s.* per week, the patients to be recommended from the Municipal Dispensary, and to be approved by the medical officer to be appointed by the infirmary directors, and also to be under the control and subject to the rules of the directors during treatment. The directors of the infirmary earnestly recommend the proposal to the favourable consideration of the town council in the belief that by agreeing to such a scheme they would earn the approval of the community, who would regret the abandonment of the good work which had been going on for the past ten years at the sanatorium or its diversion to other purposes.

Death of Dr. William Skinner, Ballindalloch.

Dr. William Skinner, Ballindalloch, who was injured on Jan. 21st by being thrown out of his trap, died on Jan. 31st at his residence, Pitchalsh, near Blacksbout. The deceased gentleman was a native of Portmahomack and had a large practice in the district between Grantown and Aberlour. He was of a most genial nature and was highly respected by a wide circle of friends, by whom much sorrow is expressed at his sudden death. He leaves a widow and five children. His brother, Mr. John Skinner, is general inspector of fisheries at Edinburgh. Many people came from long distances to attend the funeral, which took place in Inveravon churchyard on Feb. 3rd, and was one of the largest ever witnessed in the district.

Forres Leanchoil Hospital.

The annual general meeting of the governors of the Forres Leanchoil Hospital was held on Jan. 29th. The annual report was read, showing an increase of funds over last year of £715 10*s.*, mainly caused by the legacy of £1000 left by the late Mr. John Munro, Elgin. 108 patients were treated during the year.

Aberdeen Royal Infirmary: Annual Report.

The annual report of the Aberdeen Royal Infirmary for 1909 has just been issued. 3165 in-patients were treated during the year and the average number of days in hospital of each patient was 26. Operations on in-patients amounted to 1795. The death-rate was about 7·7 per cent. of the cases treated. 16,796 out-patients received advice and treatment during the year. The ordinary income was £11,635 3*s.* 7*d.* and the ordinary expenditure £12,948 15*s.* 9*d.*, leaving a deficit of £1313 12*s.* 2*d.* The extraordinary income, however, reduces this to £489 8*s.* 11*d.* Voluntary contributions from patients amount to £238 9*s.*

Aberdeen Police Surgeonship.

Five applications were received for the surgeonship to the Aberdeen police, rendered vacant by the resignation of Professor Matthew Hay. The following short list was recommended by the watching committee to the council: Dr. A. T. G. Beveridge, Dr. A. R. Laing, and Dr. D. Rennet.

Aberdeen Trades Council and Medical Appointment.

At a meeting of the executive of the Aberdeen trades council held on Feb. 2nd it was agreed to recommend that the standing orders of the council be suspended at the next meeting in order that the following resolution might be submitted:—

> That this council, as representative of the workers of the city, hereby enters its emphatic protest against the action of the school board with regard to the salary agreed to be paid the medical inspector, holding that such a sum is extravagant and ought to be condemned by the ratepayers.

Feb. 8th.

IRELAND.

(From our own Correspondents.)

Workmen's Compensation: Recorder's High Compliment to Dublin Medical Experts.

There were several cases of claims for injuries—including one which resulted in death—before the Recorder of Dublin last week. The widow of a workman sought compensation for the death of her husband, who had been struck on the head by the shaft of a van. He had continued at work for about five months when he developed serious brain trouble which brought about his death. When the deceased became unable to work, his wife claimed for compensation in the Recorder's court, and the award was made that his employers should pay 14*s.* a week. The man was alive at that time; his death took place on Oct. 20th of last year. Dr. J. Byrne Coleman and Mr. S. M. Thompson gave evidence on behalf of the applicant similar to that which had been given at the former hearing of the case, and Dr. G. Burbidge White gave evidence for the employers. The details of the medical evidence were very intricate, and gave scope to ample display of the peculiar skill of the legal advocate as well as of that of the clinical attendant. His lordship, in delivering judgment, said that it was not necessary to have an assessor in view of the evidence that had been given. He awarded the widow £110 compensation, the respondents to pay the medical fees in connexion with the case. His subsequent remarks, in summarising the general impression which had been made upon him by the various claims, closed with a very high compliment to the integrity, as well as the acumen, of the medical experts of Dublin, of whom he has had a very large and varied experience during his prolonged and extensive practice at the Bar.

Tillystown Drainage.

A sworn inquiry has just been held in the board room of the Loughlinstown workhouse by the chief engineering inspector of the Local Government Board to decide whether or not a system of sewerage from Tillystown was required, and whether the provision of such scheme was within the resources of the council; and also whether, in those general circumstances, the sanitary authority ought to be empowered to approach Parliament in order to obtain compulsory powers for the acquisition of the lands necessary for the purpose of providing a system of sewerage for the locality in question. Also, the inquiry discussed the matter of an application for sanction of a loan of £2000, which would be requisite for the complete carrying out of the scheme in question. An objection had been raised *pro formâ* by the railway company; another came from a resident with reference to the effect of the proposed scheme on bathing; and other objections were made to the place which had been selected for the outflow. The clerk of the council testified that the attention of that body had been repeatedly called to the necessity for a proper drainage system; some who had communicated with them on the subject had expressed their fears of an epidemic being produced by the existing conditions. The local medical officer of health testified that the present drainage of Tillystown village was a very serious menace to the public health. The engineer described the scheme, which included a sewer of 2290 yards in length with purification tanks, the estimated cost being £2105 11*s.* 6*d.* The solicitor to the railway company pointed out that their line would be affected in three places by the scheme, and they were, accordingly, anxious to be protected, but they would not object to a properly constructed drainage system. The result of the inquiry was satisfactory, and the scheme will, it is believed, meet with no further opposition.

Scarlet Fever in Belfast.

Belfast is at present suffering from a widespread epidemic of scarlet fever. Fortunately the type of the disease is mild, but many adults are being attacked, probably owing to the disease not having been very prevalent of late. For the five weeks between Dec. 19th, 1909, and Jan. 22nd, 1910, there were 87 cases notified, as compared with 28 in the corresponding period of 1908–09. The outbreak in Belfast is attributed largely to the excessive number of cases in the surrounding districts from which the infection has been introduced. For instance, at Lisburn, a town seven miles from Belfast, there is an epidemic, and on Feb. 1st Dr. C. J. Clibborn, medical inspector to the Local Government Board, attended the board of guardians by invitation to suggest what should be done. He advised isolation and disinfection, and the non-attendance of children at the schools from any house where the disease prevailed, and that the scholars affected should not be taken back without a medical certificate. At the monthly meeting of the Belfast corporation, held on Feb. 1st, it was reported that the death-rate from all causes had risen to 20·9, that from zymotic diseases was 0·6, and that from chest affections 8·7. The increase in the zymotic death-rate (which amounted to 70 deaths, most being due to whooping-cough) accounted also for the increase in the general death-rate. It is interesting to contrast the two leading cities in Ireland, Dublin and Belfast, as regards infectious disease, as has been done in a recently published table for the weeks ending Jan. 8th to 29th (a period of four weeks). In both cities the total number of notifications were about the same, 194 in Dublin and 193 in Belfast. In Dublin 23 cases of scarlet fever were reported, in Belfast 79; in Dublin 24 cases of enteric fever, in Belfast only 4; in Dublin 16 cases of diphtheria, in Belfast 7; in Dublin 46 cases of erysipelas, in Belfast 23.

The Belfast Hospital for Sick Children.

At the annual meeting of this well-known Belfast charity, held on Feb. 3rd, it was reported that during 1909 there were 648 intern patients, of whom 285 were medical and 350 surgical, and 13 ear and eye cases. In the out-patient department 2514 new medical cases and 1745 new surgical cases attended, as well as 819 ear and eye cases, and 133 dental cases. 344 operations were performed among the intern and 528 among the extern patients. Financially, there had been a saving in the outlay, as the average expenditure on in-patients per day was 1*s.* 11½*d.*, as against 2*s.* 5*d.* the previous year, and the average cost per bed was £52 10*s.* 2*d.*, as against £55 1*s.* 3*d.*

Newtownards Nursing Society.

At the annual meeting of this society the Marchioness of Londonderry, President of the association, who occupied the chair, delivered an interesting address on the work of the society for the past year, in which she referred to the great loss the society and the town of Newtownards had sustained in the sad death, through an accident, of Dr. Thomas McIlroy. Lady Hermione Blackwood, a trained nurse, gave a very valuable lecture on the subject of district nursing. Very hearty votes of thanks were subsequently passed to her and to Lady Londonderry.

Feb. 8th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

German Surgical Congress, Berlin, 1910.

THE Thirty-ninth Congress of the German Surgical Society will be held in Berlin from March 30th to April 2nd, 1910, in the Langenbeckhaus, Ziegelstrasse, 10/11, Berlin, N. Tickets of membership and other particulars may be obtained from Herr Melzer at this address. Dr. A. Bier is the President for this year, and he requests that announcements of any intended addresses and demonstrations, together with a short abstract of their contents, should be sent to his address Berlin, N.W., 24, Lessingstrasse, I., not later than Feb. 16th. Preparations, apparatus, and instruments intended for exhibition are to be sent, together with an account of their use or purpose, to Herr Melzer. They will be accommodated according to space at disposal and order of application. If there are sufficient participators an excursion free of cost will be made on March 28th to Hohenlychen (Uckermark) to inspect institutions there for tuberculous children and other institutions. This excursion will be made by the invitation of the Red Cross Society, and applications to join it should be made as soon as possible to the Bureau des Volksheilstättenvereins vom Roten Kreuz, Charlottenburg, Berlinerstrasse, 137. The annual dinner will take place on March 31st at 5.30 P.M. at the Savoy Hotel (Friedrichstrasse, 103), Berlin. Tickets for this are obtainable from Herr Melzer.

Centenary of the Hufeland Medical Society.

The Hufeland Medical Society celebrated its hundredth anniversary on Feb. 1st by a special meeting and a dinner on the following day. This eldest of the Berlin medical societies was founded in 1810 by Dr. Hufeland, who was physician to the Royal family and had a very large practice. He was also the author of a number of medical works, of which his "Makrobiotik" is the best known. When the society was founded by him it had only 18 members who used to meet by turns in each other's houses, and the proceedings consisted chiefly in the reporting of remarkable cases which had occurred in the practice of the members. In course of time the number of members became larger and a library and a meeting-room were provided, but the principal subject used to be reports and practical demonstrations. Other medical societies were subsequently founded, among which the Berlin Medical Society soon obtained a prominent position as a centre of modern scientific research, but the Hufeland Society continued to be a meeting-place for those who cultivated the practical side of medicine. Later on in the "eighties" of the past century the amalgamation of the Hufeland Society with the Gesellschaft für Heilkunde and with the Balneological Society increased its somewhat depleted membership, and this upward movement made further progress when it combined with the Demonstrations-Gesellschaft. Since that time the Hufeland Society has risen to a new and more active life, especially under the presidency of young and energetic men such as Professor Goldscheider and Professor von Hansemann. The society has control of a fund of about 30,000 marks (£1500), a bequest of the late Professor Alvarenga, a Portuguese physician who divided his great wealth among Portuguese and foreign medical societies, the interest of the capital being destined for prizes for scientific work. At the special meeting held on Feb. 1st Professor von Hansemann gave a history of the society and announced that it has elected a number of celebrated German and foreign medical men to be honorary members, the number including Lord Lister. Professor Strauss read a paper on Dr. Hufeland as a Physician, and Professor Brieger on Dr. Hufeland as a Balneologist. The meeting was attended by representatives of the local authorities, the University, and other medical societies, as well as by descendants of the founder of the society.

Priapism Complicating Appendicitis.

Dr. Rosenthal of the Jewish Hospital in Breslau, writing to the *Berliner Klinische Wochenschrift*, reports a case of priapism caused by acute appendicitis. The patient was a man 42 years of age who, 16 days previously to his admission into the above hospital, was suddenly seized with colic in the right abdominal region. An examination made by his medical attendant showed that there were muscular tension and a circumscribed pain in the above region. On the fourth day after a fright erection of the penis suddenly appeared in an extreme degree without sexual desire, but accompanied by slight urinary troubles. Therapeutic measures such as venesection, narcotics, and prolonged bathing proved useless, and the patient was therefore on the twelfth day conveyed to the hospital where a tumour was found in the ileocæcal region. The penis was in a state of extreme erection, having a circumference of 11 centimetres; the distension was, however, confined to the corpora cavernosa. Urine was passed freely but rather frequently. On rectal examination a circumscribed swelling was found near the anterior wall of the rectum. The blood contained an increased number of leucocytes. The patient's temperature was 37·9° C. His condition gradually became better, the erection decreased, and the swelling in the pelvis disappeared. Puncture of the right corpus cavernosum gave exit to blood-stained serum containing detritus, blood pigment, broken-down erythrocytes, and some bacteria coli. Dr. Rosenthal considered that the priapism was caused in this case by thrombosis of the vena profunda penis. The presence of bacterium coli in the distended penis proved that the thrombosis took its origin from the intestines and was caused by the appendicitis.

Feb. 7th.

Medical News.

ROYAL SOCIETY OF MEDICINE.—A special general meeting of the Fellows was held at 20, Hanover-square, London, on Feb. 2nd, with Sir William Church, the President, in the chair. The President put from the chair a resolution that the action of the Council of the society in granting an 80 years' lease of 20, Hanover-square, was approved and confirmed by the meeting. The Council had acquired a site at the corner of Wimpole-street and Henrietta-street, which provides ample space for the present and future needs of the society. To erect on this site a suitable building worthy of the society and capable of bearing comparison with similar institutions in other countries a gift of at least £30,000 was required in addition to what the society could provide by other means. Sir Victor Horsley raised the question whether it was absolutely necessary for the Council to be fortified with the proposed resolution, and Sir John Broadbent asked if provision would be made for the repayment of the society's debentures. Mr. Pearce Gould having said that the repayment had been duly provided for, the resolution was then put to the meeting from the chair and carried. The President then proposed the following resolution:—

> That the resolution of the Council altering the by-laws so as to provide that women shall be eligible for the Fellowship of the society be, and is, hereby confirmed.

After a short discussion this was voted for by ballot, and the requisite two-thirds majority necessary for its passing was secured with three votes over. This concluded the meeting.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—At the quarterly examination in Practical Pharmacy held on Jan. 13th, the following candidates were approved:—

David Forbes Borrie, Edinburgh University; Samuel Caplan, St. Mary's Hospital; Reginald Charles Clifford, St. Bartholomew's Hospital; Gerald Cock, Charing Cross Hospital; Jean Crétin, St. Bartholomew's Hospital; John Edgar Davies, Guy's Hospital; John Phillip Henry Davies, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Alfred Evan Lewis Devonald, Cork and St. George's Hospital; Henry William Doll, Guy's Hospital and private study; Evan Percy Edwards, Cambridge and Liverpool Universities; Sidney Ernest Elphick, St. Mary's Hospital; Lennard Game, King's College Hospital; Frank Cane Godding, Guy's Hospital; Harold Harvey, Birmingham University; Arthur Stanley Heale, London Hospital; James Frank Hoare, University College Hospital; Jordan Constantine John, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Albert Lamb, Manchester University; Edward Macmahon Mahon, Guy's Hospital; Henry Wingate Maltby, St. Bartholomew's Hospital; Walter Edgar Masters, London Hospital; Constance Anderson Mortlock-Brown, Royal Free Hospital; Kenneth Montague Nelson, St. Mary's Hospital; William Linnell Partridge, Guy's Hospital; Edward Crosby Peers, Guy's Hospital; Roy Bingley Pullin, St. Bartholomew's Hospital; Cecil Arthur Robinson, St. Mary's Hospital; Archibald Frank Salsbury, Guy's Hospital; Francis Donaldson Saner, B.A. Cantab., Cambridge University and Guy's Hospital; Simon Simons, University College, Cardiff, and private study; Reginald Samuel Sherard Statham, Bristol University; Dudley Macaulay Stone, St. Bartholomew's Hospital; Evelyn Alexander Sutton, Charing Cross Hospital; Donald Sargenson Twigg, Sheffield University; Cyril Underwood Whitney, Westminster Hospital; Owen Elias Williams, Guy's Hospital; Matthew Mai Woods, Cambridge University and St. George's Hospital; and Arthur Kendall Scott Wyborn, Middlesex Hospital.

THE LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—A lecture on the Æsthetics of Anæsthetics will be delivered by Dr. Frederic W. Hewitt, M.V.O., consulting anæsthetist to the hospital, on Friday, Feb. 25th, at 3 P.M. The lecture will be delivered in the clinical theatre of the hospital. All students of the University are free to attend. Members of the profession will be admitted on presentation of their address cards.

LITERARY INTELLIGENCE. — Messrs. J. and A. Churchill are about to publish "The Malaria Fevers, Hæmoglobinuric Fever, and the Blood Protozoa of Man," by Captain Charles F. Craig, Medical Corps U.S. Army.—The St. Catherine Press, Limited, of 8, York Buildings, Adelphi, W.C., are about to publish a new volume by Dr. T. N. Kelynack, illustrated and provided with maps, concerning the health and sports stations in Norway and Sweden suited to the requirements of English health and holiday seekers.

EDITH PECHEY PHIPSON POST-GRADUATE SCHOLARSHIP.—The above scholarship, of value £40, will be awarded at the end of March, 1910. It is intended for the assistance of medical women in any sort of post-graduate study, whether medical, surgical, pathological, or scientific. The scholarship will be awarded to the most deserving applicant, preferably to a woman coming from India or going to work in India. Applications for the year 1910 will be laid before the subcommittee of the Pechey Phipson Memorial Fund, and should be addressed to the honorary secretary of the fund, Mrs. E. M. Slater, 33, Chepstow Villas, London, W.

THE MEDICAL INSPECTION OF LONDON SCHOOL CHILDREN.—With regard to the recent proposal to appoint an additional medical officer in the education service of the London County Council, the Education Committee has decided to dispense with one of the present quarter-time posts remunerated at the rate of £150 a year and to appoint its holder, Dr. F. C. Shrubsall, to the new post at a commencing salary of £500, rising by annual increments of £50 to £700 a year. Dr. Shrubsall will continue to do certain work for which £190 per annum has been paid hitherto, so that the extra expenditure involved by the appointment will be only £340 a year.

CEREBRO-SPINAL MENINGITIS IN LONDON.—The London County Council on Feb. 8th decided to enforce the Act requiring the notification of epidemic cerebro-spinal meningitis in the County of London for a further period of twelve months. The Public Health Committee stated that considerable attention had been given to this disease in the principal cities of Europe and America during recent years, and it was important that the continuity of statistical information for the study of the malady should be preserved. Since the notification of cerebro-spinal fever had been compulsory in London 317 cases had been notified, and detailed information, which might at any time become of importance, had been obtained.

His Majesty the King has granted permission to Dr. George Ogilvie to accept and wear the Insignia of Knight of the Royal Order of Our Lady of the Conceição de Villa Viçosa, conferred on him by the King of Portugal.

The Notification of Pulmonary Tuberculosis.—The Keynsham (Somerset) district council, at its meeting held on Feb. 1st, decided to adopt the voluntary notification of pulmonary phthisis.

Mr. Godfrey Lowe, M.R.C.S. Eng., L.R.C.P. Lond., was re-elected honorary secretary of the Lincolnshire Automobile Club for the fifth successive year at the annual general meeting of the club held on Feb. 4th.

The London Association of Accountants has elected Mr. Charles Stevenson of Manchester as President for the current year. Mr. Stevenson, who is the son of a medical man, has conducted the Manchester Medical Agency for many years.

The Battersea "Brown Dog" Drinking Fountain.—The highways committee of the Battersea borough council has recommended "that steps be taken with a view to the removal of the fountain and its return to the donors." The Council has accepted the recommendation.

The annual meeting of the After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane will be held in the library of the Royal College of Physicians of London on Feb. 16th at 9 P.M., under the chairmanship of the President of the College. The secretary of the association is Mr. H. Thornhill Roxby, Church House, Dean's-yard, Westminster, S.W.

Deaths of Eminent Foreign Medical Men.—The death of the following eminent foreign medical man is announced:—Dr. G. A. Y. van der Sande, surgeon in the Dutch Navy. He published many researches on anthropological subjects based on his experiences in New Guinea, for which he was given an honorary Ph.D. by the University of Utrecht. He was 46 years of age.

The British Association for the Advancement of Science.—The meeting of the British Association for the Advancement of Science will take place this year at Sheffield on August 31st. The President is the Rev. Professor T. G. Bonney, D.Sc., LL.D., F.R.S., who is president of the Geological Society. The presidents of the various sections are also announced.

The Incorporated Institute of Hygiene.—A public meeting on "The Promotion of Hygiene and Preservation of Health," convened by the Incorporated Institute of Hygiene, will be held on Monday, Feb. 14th, at 4 P.M., at the Royal United Service Institution, Whitehall. Sir William Bennett, K.C.V.O., will preside, and several addresses will be delivered. Cards of invitation may be had from the secretary of the institute.

The Care of the Feeble-minded.—A meeting for the consideration of the question of the care and control of the feeble-minded was held at Taunton on Feb. 2nd under the presidency of the mayor. There was a large gathering and Dr. G. H. Savage gave an interesting address. At the close a resolution was passed urging the need of immediate legislation on the lines recommended in the report of the Royal Commission on the Care and Control of the Feeble-minded.

Plymouth Ear and Throat Hospital.—The annual meeting of the friends of the Plymouth Ear and Throat Hospital was held on Feb. 3rd under the presidency of the Mayor. The medical report stated that during 1909 1013 patients had been treated. The financial statement showed a small favourable balance. After some discussion the meeting resolved to adopt the suggestion of the committee and to proceed with a scheme for the rebuilding of the institution. The first section of the undertaking is estimated to cost about £1000.

East Cornwall Hospital, Bodmin. — On Feb. 3rd Viscount Clifden laid the foundation-stone of the new building of the East Cornwall Hospital, Bodmin, in the presence of a large gathering. The estimated cost of the building is £3000, £2500 of which have been already received as a legacy from the late Miss Cole of Lostwithiel.

Clifton Dispensary.—The annual meeting of the subscribers of the Clifton Dispensary was held on Feb. 1st. The ninety-seventh annual report stated that during 1909 2327 patients had been treated, including 74 midwifery cases. The financial statement showed that a small unfavourable balance remained at the close of the year.

Chinese Pork.—The re-exportation of more than 5000 carcasses of pigs from China which recently arrived at Greenwich has been ordered by Dr. Herbert Williams, medical officer of the Port of London, on the ground that their backbones had been removed. Pigs' intestines intended for the manufacture of sausage skins and showing evidences of swine fever were included in the same cargo. The Local Government Board has upheld Dr. Williams's action.

The Extension of Leicester Infirmary.—The new nursing home attached to the Leicester Infirmary was opened by Mrs. Fielding-Johnson on Feb. 8th. This completes the building scheme which has been carried out under the auspices of Sir Edward Ward, the chairman of the infirmary board, who has raised £100,000 for the purpose. The buildings, which comprise four storeys, contain 31 bedrooms, and in furnishing and equipping the home the convenience and comfort of the nurses have been the guiding principle. Entirely shut off from the main building is a small isolation block for the purpose of dealing with cases of infection which may occur among the nurses. The total cost of the nursing home has been £22,500.

A Fire-Extinguishing Exhibition.—A remarkable exhibition of fire extinguishing was given last week on the desert "island site" in Kingsway, by Messrs. H. M. Read, Limited, of Finsbury Pavement, with the apparatus which they have produced under the name of X.L.C.R. Many different types of conflagration were kindled, and the operator was successful in extinguishing all of them. The most striking demonstrations were afforded by a wooden flooring covered in burning petrol, which was extinguished in little more than a minute, and by a small lake of tar covered with petroleum, which was allowed to blaze until a column of flame and black smoke reaching as high as the tall buildings in the neighbourhood drove the spectators to a discreet distance. The ease with which this considerable fire was subdued was astonishing. The chief feature of the X.L.C.R. Extinguisher, which depends for its action upon a chemical spray, is the readiness with which it can be applied, and it should certainly be successful in checking any domestic fire if used at a fairly early stage.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Ash, Edwin L., M.D., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Pathologist to the London Temperance Hospital.

Boulter, William Ernest, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Queen Victoria Jubilee Convalescent Home, Durdham Down, Bristol.

Brooks, S. J., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Eyam District of the county of Derby.

Clark, Donald, M.B., Ch.B. Glasg., has been appointed Assistant Medical Inspector of Schools and School-children to the Committee on Secondary Education, County of Lanark.

Cockey, Edmund Percival, M.D. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Frome (Somerset) Volunteer Fire Brigade.

Drapes, Thomas Lambert, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Chepstow (Mon.) Urban and Port Districts.

Grieves, James Percy, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Sixth District (Portishead) of the Long Ashton (Somerset) Union.

Harvey, Frank Melville, M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the French Hospital.

Jones, Charles Albert, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Penarth (Glamorganshire) Urban District.

Legat, Robert Eddowes, M.B., C.M. Edin., has been appointed Public Vaccinator for the Mangotsfield District by the Warmby (Gloucestershire) Board of Guardians.

Littledale, H. E., M.D., B.S. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Charing District of the county of Kent.

Moore, S. G., M.D. Vict., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the West Huddersfield District of the county of York.

Page, John Basil, M.B. Lond., has been appointed Honorary Medical Officer to the West Cornwall Infirmary and Dispensary, Penzance.

Thomas, Robert Stanley, M.D., M.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Exmouth (Devon) Dispensary.

Thornton, George Lestock, M.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Exmouth (Devon) Dispensary.

Waters, Captain Walter James, L.R.C.P., M.R.C.S., R.A.M.C., has taken over tho duties of Officer In Medical Chargo of Troops at Crownhill, Plymouth.

Watson, J. N., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wootton Bassett District of the county of Wilts.

Woodwark, Arthur Stanley, M.D., B.S. Lond., has been appointed an additional Physician for Out-Patients at the Royal Waterloo Hospital for Children and Women.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Bolingbroke Hospital, Wandsworth Common, S.W.—Ophthalmic Surgeon.

Bradford Royal Infirmary.—House Physician and Two House Surgeons, all unmarried. Salary in each case £100 per annum, with board, residence, and washing.

Brighton, Royal Alexandra Hospital for Sick Children.—Honorary Skiagraphist. Also House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

Brighton, Sussex County Hospital.—Second House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

Bristol Royal Infirmary.—Two House Physicians and One House Surgeon (salary each £100 per annum); One Obstetric and Ophthalmic House Surgeon and One Throat, Nose, and Ear House Surgeon (salary each £75 per annum); and One Casualty Officer (salary £50 per annum); with apartments, board, and laundry. Also Honorary Assistant Dental Surgeon. Also Honorary Dental Anæsthetist.

Buenos Ayres, British Hospital.—Senior Resident Medical Officer. Also Assistant Resident Medical Officer, both unmarried. Salaries £250 and £200 per annum respectively, with board, lodging, &c.

Cambridge, Addenbrooke's Hospital.—House Physician. Salary £60 per annum, with board, residence, and laundry.

Cancer Hospital, Fulham-road, S.W.—Medical Officer in Charge of the Electrical Department. Salary £26 5s. per annum.

Canterbury, Kent and Canterbury Hospital.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

Cape of Good Hope, Grey Hospital, King Williams Town.—Resident House Surgeon, unmarried. Salary at rate of £250 per annum, with quarters and one ration.

Central London Throat and Ear Hospital, Gray's Inn-road.—Registrar.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Pathologist. Salary 100 guineas per annum.

Dorchester, Dorset County Hospital.—House Surgeon, unmarried. Salary £100 per annum.

Dr. Barnardo's Homes: Her Majesty's Hospital, Stepney Causeway, London, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

Eastern Dispensary, Lemau-street, E.—Physician-Accoucheur. Salary £25.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Assistant Surgeon, Ophthalmic Surgeon, and Surgeon.

Evelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.—House Physician. Salary at rato of £60 per annum, with board, residence, and washing.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

Harrogate Infirmary.—House Surgeon. Salary £75 per annum, with board, lodging, and laundry.

Kettering and District General Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Two Resident Medical Officers. Salary, senior £100, and junior £65 per annum, with board, washing, and apartments. Also Honorary Ophthalmic Surgeon.

Leicester Infirmary.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

Macclesfield General Infirmary.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £60 per annum respectively, with board and residence.

Manchester, County Asylum, Prestwich.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

Mansfield, Sherwood Forest Sanatorium for Consumptives.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

New Hospital for Women, Euston-road, N.W.—Clinical Assistant (female).

Newport and Monmouthshire Hospital.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

Northampton, County Borough of.—Assistant Medical Officer of Health. Salary £250 per annum.

Northampton General Hospital.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, and washing.

Prince of Wales's General Hospital, Tottenham, N.—Senior House Physician. Salary at rate of £75 per annum, with residence, board, and laundry.

Rotherham Hospital.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal London Ophthalmic Hospital, City-road, E.C.—Assistant Surgeon.

Royal National Orthopædic Hospital, Great Portland-street, W.—Surgical Registrar. Salary £105 per annum. Also Honorary Anæsthetist.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer (unmarried), for six months. Salary at rate of £80 per annum, all found.

Sheffield University.—Junior Demonstrator in Pathology. Salary £150 per annum.

Shrewsbury, Borough of.—Medical Officer of Health. Salary £500 per annum, inclusive.

Southampton, Free Eye Hospital.—House Surgeon. Salary £100 a year, with board and residence.

Swansea General and Eye Hospital.—House Surgeon. Salary £75 per annum.

Toxteth Park Workhouse and Infirmary.—Assistant Resident Medical Officer. Salary £100 per annum, with board, washing, and apartments.

West End Hospital for Diseases of the Nervous System, &c., 73, Welbeck-street, W.—In-Patients' Physician.

West Ham Infirmary, Whipp's Cross-road, Leytonstone, N.E.—Third Assistant Medical Officer. Salary £120 por annum.

West London Hospital, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Rostrevor, in the county of Down.

Births, Marriages, and Deaths.

BIRTHS.

Furnivall.—On Jan. 31st, at Wenlock-terrace, York, the wife of Captain C. H. Furnivall, R A.M.C., of a daughter.

Mackintosh.—On Feb. 3rd, at Corner House, Platt's-lane, Hampstead, N.W., the wife of J. Stewart Mackintosh, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

Milne.—On Feb. 6th, at Middleton, Lancs, the wife of John Milne, M.B., of a son.

MARRIAGES.

Ballance—Barrett.—On Feb. 2nd, at Princes-street Congregational Church, Norwich, Hamilton Ashley Ballance, M.S., F.R.C.S., to Ruth, youngest daughter of the Rev. Dr. George Slatyer and Mrs. Barrett.

Grieve—Corlett.—On Feb. 1st, at the Church of St. John, Roundhay, Leeds, John Caldwell Grieve, M.B., Ch.B., to Jessie, daughter of the late Rev. John Corlett and Mrs. Corlett.

McKendrick—Wylie.—On Feb. 3rd, at St. Paul's, Onslow square, South Kensington, Captain A. G. McKendrick, I.M.S., to Mildred Macleod, younger daughter of Major-General H. Wylie, C.S.I., of Hilltop, Farnham Common, Bucks.

DEATHS.

Borradaile.—On Feb. 5th, Major A. L. Borradaile, R.A.M.C., retired, aged 45 years.

Crompton.—On Jan. 29th, at Nelson House, Manchester, Harold J. Crompton, M.D., D.P.H., Resident Medical Officer, Prestwich County Asylum, aged 37 years.

Dickson.—On Feb. 1st, at Stainland, Yorkshire, Avery Wynn Dickson, M.R.C.S., L.R.C.P., aged 35 years.

Evans.—On Feb. 6th, at Cartref, Dovercourt, Samuel Evans, L.R.C.P. Lond., &c., of Harwich and Dovercourt, aged 63 years.

Forster.—On Feb. 3rd, suddenly, at Karonga, Nyasaland, British East Africa, Arthur Frost Forster, M.R.C.S., M.R.C.P. Lond.

Garrard.—On Jan. 28th, at the Manor House, Thrybergh, William Arthur Garrard, M.R.C.S., aged 59 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HOSPITAL GAZETTES.

The students' journals for January are largely occupied, as is usual, with an account of Christmas festivities, and judging from the sprightly tone of most of them the annual days of misrule at the London hospitals seem to have passed off as merrily as is their wont. In *Guy's Hospital Gazette* (Jan. 22nd) Dr. G. Newton Pitt writes concerning tetanus and gives a valuable tabular analysis of the 45 cases of that disease treated at Guy's during the last 20 years. Of these, 11 (or 25 per cent.) recovered, 5 under serum treatment, 4 under surgical treatment without serum, and 2 under simple medical treatment. Out of the 34 fatal cases 19 were treated with serum and the others without. Of the total number 21 per cent. of cases treated with serum recovered, and 28·5 of cases treated without serum recovered. Dr. Pitt considers that there is strong evidence in favour of the prophylactic local injection of serum in the treatment of very dirty wounds or gunshot wounds.——The most interesting contribution to the *London Hospital Gazette* comes from one of the hospital's most distinguished members, Grenfell of Labrador, concerning whose work as medical officer, missioner, and administrator of that desolate coast a volume has recently been published. From the present communication we quote the following passage:—

> "Our practice extends from Natasquhan in Canadian Labrador to Cape Chidley in Hudson Bay Straits, and from Bonne Bay on the West Coast of Newfoundland to Cape John on the Atlantic side, a distance of about thirteen hundred miles. I cover most of that region in this boat once a year, and a good part of it more than once. My colleagues do the same over their sections of coast in summer, and with dog trains and sledges in winter, though we are just commencing the use of reindeer, a herd of which we imported from Lapland two years ago, and which now number about six hundred head. To cover more efficiently our coast, and to afford ports within reach of fishermen in distress, we have four small hospitals about two hundred miles apart, and several nursing stations also where 'the nurse is the only doctor for a hundred miles.' Our patients come in every possible way and from every impossible distance, and every medical officer has a motor boat, that he may more efficiently cover his district. Three hospitals and the Mission ship have also now Marconi wireless stations, so that we can cover considerable distances from sea. All the last week the air has been thick with messages from Commander Peary to the New York papers, and we can hear everything going on with our wireless. We have not only his story, but all his other messages as well. Never gossip over the wireless is an excellent rule, for you can't tell who is going to overhear. Every now and then the operator comes in and tells me some amusing piece of news that some one has set going from a power station perhaps a couple of hundred miles away. Our cases range over the whole gamut of surgery and medicine; and as our surgical clinic is derived from the whole of Newfoundland, patients coming even from the capital, we have had to double the size of our southern hospital, which now holds twenty-eight beds. The work, however, is by no means all remedial. Prophylaxis forms a large part of it; and as poverty and consequent bad feeding caused a large part of our troubles, we started to try to improve the earning capacity of the people and induce a cash system of trade instead of a credit system, or truck system, which enslaved all the trappers and fishermen alike. We now have a series of nine coöperative stores, the shares all owned locally by the fishermen. In addition, to increase the wage-earning capacity and steady up the uncertain returns from the harvest of the sea, a number of industries have been started at various points, where our people are engaged in weaving, schooner building, lumber milling, and various other similar efforts."

——In the *Middlesex Hospital Journal* (January) Mr. Charles B. Goulden writes upon the Treatment of Lachrymal Obstruction, and Mr. N. Bishop Harman in praise of games in a paper which closes with the following happy reference to St. Paul's Epistle to Timothy:—

> "He uses the language of the games, and writes his own epitaph in the terms of the victorious athlete: 'I have fought the good fight, I have finished my course, I have kept the faith. ......' An Englishman, in the blunt terseness of his speech, would have said, with no less sentiment and no less truth, 'Timothy, my boy, I've played the game!'"

——To *St. Bartholomew's Hospital Journal* (January) Surgeon W. Perceval Yetts, R.N., contributes some notes on Chinese Medicine, and Dr. M. H. Gordon a paper on the Fixation of Complement Reaction.——The editor of the *St. Mary's Hospital Gazette* (January) is to be congratulated upon his impressionistic sketch of an evening at his Medical Society at which Sir Almroth Wright delivered himself of his views upon the Medical Aspects of Woman's Suffrage, and was answered by Mr. G. B. Shaw. The style of part of this report would not disgrace the annals of Toby M.P. himself.——In *St. Thomas's Hospital Gazette* (January) Major E. C. Freeman beats the recruiting drum of the R.A.M.C.'s Territorial Branch, and we trust his appeal will meet with a worthy response. Mr. J. A. Jennings reproduces the following items, amongst others, from an ancient minute-book of the hospital, the service of which seems to have been an exciting occupation in the seventeenth century.

> "May 29, 1620.—Row with Mr. Todd, the Minister of St. Thomas's, who declined to give in to Governors.
> Tenants not to pay him tithe."
>
> "March 22, 1626?—Mr. Todd, Minister of St. Thomas's, to be turned out by hook or crook."
>
> "April 23, 1632.—Poor to be buried at least 2ft. deep in new Churchyard, as they were buried so shallow that the inhabitants round objected to the smell."
>
> "July 9, 1639.—Mr. Madey, Hospitaller in prison by order of Privy Council."
>
> "July 20, 1660.—Salary of Surgeons reduced to £30 each."
>
> "Aug. 1, 1684.—Patients refusing medicine to be expelled."
>
> "July 7, 1691.—All the Surgeons turned out and the following elected:—Samuel Smith, Simon Ridout, and William Coatsworth."

THE WATKINS SWITCH AND ELECTRIC CURRENT CONTROLLER.

It is a matter of frequent comment that one important drawback to electric lighting is that the light must always be full on; by existing arrangements it cannot be turned down in the way that gas can by moving the tap. By means of the Watkins switch, however, the electric light can be controlled in the same way as gas and thus an important economy may be realised. By its use lamps can be lowered through seven degrees of illumination, reducing the current on each "stop" until on the lowest one a saving of current amounting to 80 per cent. is effected. The inside of the switch is fitted with a series of frames filled with rods of a special composition laid side by side and held together by screws. The rods vary in length, thickness, shape, and density according to the voltage and controlling capacity of the switch. The "dolly" of the switch is connected with a rocking lever which carries at the inner end spring pistons and a wheel which slides over contacts connected with the frames which retard the current instead of dissipating it by heat in the ordinary resistance wires. The switch has seven stops, enabling the user to obtain a corresponding number of degrees of illumination or power. The switch is available for either the alternating or direct current. A little reflection will show the advantages of this arrangement. It saves, for example, the filament, and especially the delicate metallic filament, from the shock, which is often fatal, of a full current suddenly being turned on. In the case of a hospital ward or the sick-room lights can be reduced to a comfortable point and all glare eliminated, besides which current is saved. In addition to regulating the current for lamps a similar control can be exercised over such appliances as surgical instruments, radiators, fans, and so on. The apparatus is ingenious in its design and appears to us to possess all the advantages which its patentees and manufacturers (Messrs. Adams and Co., of 109, Victoria-street, London, S.W.) claim for it.

HOME-MADE BREAD.

To the Editor of The Lancet.

Sir,—If your correspondent, Mr. Maurice F. Key, will make the following slight alterations in his methods when bread-making, the result, he will find, is a well aerated bread. The flour should be *dry* and not cold. The best plan is to put it into the earthenware basin and leave in front of the fire for half an hour. It must *not* be *hot*, just warm. For 7 pounds of white flour at least 3 ounces of German yeast should be used, and this should be mixed with lukewarm, not cold, water. An hour in a "brisk" oven is the usual time, unless the loaves are large.

A pleasant change from the square loaf, baked in tins, is to place the dough into long jam pots and bake in these; this produces a long thin loaf like a sandwich loaf, with an excellent top crust.

Here in the North every family make their own bread and bake their own pies, &c. I can quite understand the health of the family has improved. When in practice in the South my great trouble was how to obtain eatable bread. The same applies to Scotland.

I am, Sir, yours faithfully,

Durham, Feb. 5th, 1910. J. D. Leigh, M.D.

THE FINE ART SOCIETY.

Art is not, as a rule, concerned with sanitary procedures, and even the most advanced realist from over the Channel would hardly find æsthetic pleasure in their pictorial representation. But in the present exhibition at the Fine Art Society, New Bond-street, Mr. Frank Dean shows two impressive pictures of perhaps the oldest of sanitary rites, namely, the disposal of the dead by burning. They are included in a series of water-colours of Northern and Central India, most of which are full of the light and colour of the East. In strong contrast are the drawings showing the onset of the rains, and especially the pair to which we have alluded, the "Burning Ghats by Night," a weird and solemn scene beneath the deep amethyst-blue of the tropic night, of which the artist has given us the full glamour. But when we consider that the frequently imperfectly incinerated remains of the dead are thrown into the sacred river in which, as another picture shows us, large crowds perform their ceremonial ablutions, the custom becomes less pleasing of contemplation. The medical visitor, however, does not go to picture galleries to recall the business of sanitation but rather to seek relief from it, and this he will find in many other of Mr. Dean's drawings, especially the admirable series showing the play of light and shade on the sand plains. If he prefers scenes with which he is more familiar the beautiful series of water-colours of English and Italian gardens which Mr. G. S. Elgood, R.I., is showing in the neighbouring room will surely afford him artistic refreshment of an unusually delightful order. Mr. Elgood is possessed of an exquisite colour-sense as well as a delicate facility of execution, and he is equally at home in depicting the formal pleasaunce or the midsummer riot of an old cottage garden.

◆

A. F. H.—It must be understood that the medical man is to be absolutely his own professional master. If all the details of practice, scientific and professional, remain in his hands there should be no objection.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

Tuesday.

Pathological Section (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at 8.30 p.m.

Papers:

Dr. H. R. Dean: A Note on Some of the Factors concerned in Serum Diagnosis of Syphilis.

Mr. E. Groves: A Case of Spontaneous Fracture arising from a Condition of Osteitis of Obscure Nature.

Mr. S. G. Shattock and Mr. L. S. Dudgeon: Experiments in Grafting Fœtal Cartilage.

Thursday.

Dermatological Section (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 p.m.

Clinical Cases

Friday.

Electro-therapeutical Section (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 p.m.

Papers:

Dr. Thurstan Holland: Points in the Diagnosis of Ureteral Calculi.

Dr. Howard Humphris: The Static Wave Current and Other Forms of Static Electricity.

Tuesday (Feb. 22nd).

Medical Section (Hon. Secretaries—A. M. Gossage, A. F. Voelcker): at 5.30 p.m.

Discussion:

On Pericarditis with Effusion as Determined by Operation or Post-mortem Examination (opened by Dr. Samuel West).

Fellows and others wishing to take part in the discussion are requested to send in their names to the Hon. Secretaries as soon as possible.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

Monday.—8.30 p.m., Dr. A. H. N. Lewers: A Case of Pan-hysterectomy for Carcinoma of the Body of the Uterus, in which an Infiltrated Portion of the Bladder was Removed.—Dr. V. Bonney: Treatment of Uterine Hæmorrhage.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

Thursday.—8.30 p.m., Mr. G. French: Some Points in Middle Ear Suppuration, its Sequelæ and Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Monday, Wednesday, and Friday.—5 p.m., Prof. A. Keith: The Anatomy of the Negro and Negroid Races.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. G. Pernet: Clinique (Skin). 5.15 p.m., Lecture:—Dr. E. C. Bousfield: Recent Developments in Serum Diagnosis.

Tuesday.—4 p.m., Dr. N. Pitt: Clinique (Medical). 5.15 p.m., Lecture:—Mr. A. H. Tubby: Lateral Curvature of the Spine (continued).

Wednesday.—4 p.m., Mr. A. H. Tubby: Clinique (Surgical). 5.15 p.m., Lecture:—Dr. G. Carpenter: Heart Disease in Children.

Thursday.—4 p.m., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 p.m., Lecture—Dr. C. Riviere: Conditions which Simulate Phthisis in Children.

Friday.—4 p.m., Dr. W. H. Kelson: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Lecture:—Dr. Robinson: Gynæcology.

Tuesday.—10 a.m., Dr. Moullin: Gynæcological Operations. 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Mr. Pardoe: Clinical.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 p.m., Operations. Dr. Robinson: Diseases of Women. 5 p.m., Lecture:—Dr. Beddard: Medicine.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Mr. Edwards: Rectal Surgery.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Abraham: Cases of Skin Disease.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eyes. 2 p.m., Medical and Surgical Clinics. X Rays. 2.30 p.m., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Evans), 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 p.m., Demonstration:—Dr. Chappel: Selected Medical Cases.

Wednesday.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. H. Pirie)

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel). 4.30 p.m., Lecture:—Dr. Kenneth Kellie: The Feeding of Infants.

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat. 2.15 p.m., Special Lecture:—Mr. Turner: Burns.

Tuesday.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 2.15 p.m., Special Lecture:—Dr. R. Wells: Anæmia.

Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Friday.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Tuesday.—3.30 p.m., Clinical Lecture: Dr. J. Taylor.

Friday.—3.30 p.m., Clinical Lecture:—Mr. L. Paton: Ocular Paralysis.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

Monday.—3 p.m., Clinical Demonstration: Dr. H. Campbell.

Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie.

Wednesday.—3 p.m., Clinical Demonstration:—Dr. F. Palmer.

Friday.—2 p.m., Clinical Demonstration:—Dr. P. Stewart. 5.30 p.m., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

Tuesday.—3.45 p.m., Lecture:—Mr. C. Nourse: External Ear and Labyrinth.

Thursday.—4.30 p.m., Clinical Lecture:—Dr. D. McKenzie: When to Operate in Middle Ear Suppuration.

Friday.—3.45 p.m., Lecture:—Mr. C. Nourse: External Ear and Labyrinth.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. A. Baldwin: Piles.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Acne Vulgaris in its Three Stages: I., Comedo; II., Indurata; III., Necrotica.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND Co., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 9th, 1910.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb.	3	29·25	S.W.	0·04	49	43	38	40	40	Cloudy
,,	4	29·62	S.W.	...	62	44	34	34	35	Foggy
,,	5	30·03	S.W.	...	49	49	34	37	38	Overcast
,,	6	29·85	S.W.	0·01	59	53	38	49	51	Overcast
,,	7	29·57	S.W.	0·23	60	55	47	51	52	Overcast
,,	8	29·43	W.	...	54	46	42	41	42	Fine
,,	9	30·20	W.	0·05	57	39	34	34	35	Fine

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Apollinaris Co., Lond.; Dr. L. Garrett Anderson, Lond.; After-Care Association, Lond., Secretary of; *Ash's Quarterly Circular*, Lond.; Addenbrooke's Hospital, Cambridge, Secretary of.

B.—Messrs. Blundell and Rigby, Lond.; Mr. M. Blok, Lond.; Mr. Arthur E. Barker, Lond.; Mr. L. A. Bidwell, Lond.; Mr. E. Stanmore Bishop, Manchester; Colonel S. H. Browne, I.M.S., Hyères; Mr. E. Bougault, Paris; Barnet Union, Clerk to the; Messrs. C. Barker and Sons, Lond.; Black's Advertising Agency, Lond.; Bristol University, Registrar of.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Continental Tyre and Rubber Co., Lond.; Messrs. J. and A. Churchill, Lond.; Mr. A. P. Coker, Gisborne; Dr. W. M. Crofton, Oxford; C. M. C.; Mr. D. Cooper, Lond.; Dr. F. G. Crookshank, Lond.; Rev. Dr. Coats, Brechin; Messrs. T. Christy and Co., Lond.; Central Press Agency, Lond.; Mr. H. A. Collins, Croydon; Cavendish Publishing Co., Lond.; Catholic University School of Medicine, Dublin, Registrar of; Dr. J. J. Clarke, Walthamstow; Dr. L. Colbourne, Beckenham; Mr. R. Culley, Lond.; Central London Throat and Ear Hospital, Secretary of.

D.—Messrs. F. Davidson and Co., Lond.; Dorset County Hospital, Dorchester, Secretary of; Dr. C. A. Adair Dighton, Scarborough; Messrs. Dawson and Sons, Lond.; Mr. T. Dixon, Lond.; Dr. E. Dupuy, Paris; Dr. H. B. Donkin, Lond.

E.—Dr. Kenneth Eckenstein, Bordeaux; Messrs. Evans, Sons, Lescher, and Webb, Liverpool; Messrs. R. C. Evans and Co., Lond.

F.—Mr. T. Fink, Nuremberg; Mr. C. A. Fox, South Petherton; Mr. M. Fellows, Bilston.

G.—The B. F. Goodrich Co., Lond.; Dr. G. W. Good, Lavergne, Ill.; G. C.; Mrs. Garrard, Rotherham; Mr. G. H. Gemmell, Edinburgh.

H.—Mr. J. A. Hawkins, Conway; Mr. J. H. Haywood, Nottingham; Captain W. L. Harnett, I.M.S., Gorakhpur; H. E. M.; Messrs. Haasenstein and Vogler, Cologne; Mr. A. F. Hetherington, Lond.; Dr. C. Gordon Hewitt, Ottawa; Professor W. Sampson Handley, Lond.; Dr. G. W. G. Hughes, R.A.M.C., Cairo; Dr. W. Henry Hillyer, East Grinstead; Home Sanatorium, Bournemouth, Resident Superintendent of; Hong-Kong College of Medicine.

I.—Messrs. Ingram and Royle, Lond.; India Office, Lond., Assistant Military Secretary of; India Rubber, Gutta Percha, Telegraph Works Co., Lond.; Incorporated Institution of Hygiene, Lond.

J.—Dr. O. Jennings, Le Vésinet; Dr. Robert Jones, Claybury.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. Kutnow and Co., Lond.; Dr. A. C. Klebs, Lausanne; Kettering and District General Hospital, Hon. Secretary of; Kent and Canterbury Hospital, Secretary of; Dr. R. C. H. Kennedy, Ryde.

L.—Mr. C. M. Leakey, Caistor; Leicester Infirmary, House Governor and Secretary of; Dr. J. D. Leigh, Durham; Messrs. Lee and Nightingale, Liverpool.

M.—Dr. Allan Mahood, Boscombe; Dr. G. G. Morrice, Weymouth; Male Nurses' Association, Lond., Superintendent of; Mrs. May, Lond.; Mr. J. Murray, Lond.; Dr. H. C. Mamlock, Paris; Sir H. Morris, Bart., Lond.; Messrs. Merck and Co., New York; The Medical Times Publishing Co., Lond.; Dr. William Martin, Newcastle-on-Tyne; Maltine Manufacturing Co., Lond.; Macclesfield General Infirmary, Secretary of; M. E. L.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; The Nonal Co., Lond.; Nottingham Children's Hospital, Secretary of; Newport and Monmouthshire Hospital, Secretary of; Northampton Corporation, Clerk to the.

O.—Oxford Medical Publications, Lond., Editor of; Mr. Robert Ollerenshaw, Knutsford; Sir T. Oliver, Newcastle-on-Tyne; Dr. George Ogilvie, Lond.

P.—Messrs. Peacock and Hadley, Lond.; Mr. F. E. Potter, Lond.; Prince of Wales's General Hospital, Lond., Secretary of.

R.—Dr. R. R. Rentoul, Liverpool; Mr. P. Raguenaud, Jarnac; Royal Maternity Charity of London, Secretary of; Messrs. Reitmeyer and Co., Lond.; The J. D. Riedel Co., Lond.; Royal College of Physicians, Lond., Registrar of; Mr. J. P. Ryan, Lond.; Messrs. Reynolds and Branson, Leeds.

S.—Scholastic, Clerical, &c., Association, Lond.; Messrs. Schimmel and Co., Lond., Manager of; Mr. W. E. Sargant, Lond.; Messrs. Salt and Son, Birmingham; Messrs. G. Street and Co., Lond.; Smith's Advertising Agency, Lond.; Society of Arts, Lond.; Dr. Scanes Spicer, Lond.; Mr. F. L. Simons, Edinburgh; Surgeon, Ferndale; Stowmarket Urban District Council, Clerk of; Mrs. Sayer, North Walsham; Seamen's Hospital Society, Lond., Secretary of; *South Wales Argus*, Newport, Manager of; Mr. Albert Shepperd, Lond.; Lieutenant-Colonel D. Semple, R.A.M.C. (retd.), Kasauli; Mrs. Turle Saint, Lond.; Sanitas Co., Lond.; Swansea Hospital, Secretary of; Messrs. Spiers and Pond, Lond.; Dr. C. Singer, Lond.

T.—Dr. E. Trevithick, Cheltenham; Mr. Leslie Thain, Ewyas Harold; Miss C. Tilly, Ventnor, Isle of Wight; T. S. B.

W.—Mr. F. Woolhouse, Carlisle; Mr. D. P. D. Wilkie, Edinburgh; Dr. F. Parkes Weber, Lond.; Messrs. Willing, Lond.; Messrs. W. Watson and Sons, Lond.; Mrs. Wagstaffe, Sevenoaks; Dr. R. Prosser White, Wigan; Mr. J. Williams, Bradford; Warneford, &c., Hospital, Leamington, Secretary of; Mr. W. A. Wharram, Leeds; Miss M. A. Withers, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Anglo-American Pharmaceutical Co., Croydon; A. V. K.; Dr. E. Ash, Lond.; A. T. G.; Mrs. Abbott, Lond.

B.—Bishopstone House, Bedford, Medical Superintendent of; Bank of Madras, Madras, Secretary of; Bellary, India, District Medical Officer of; Sir W. Bennett, Lond.; Mr. W. Bryce, Edinburgh; Bradford Children's Hospital, Secretary of; Messrs. Boyveau and Chevillet, Paris; Mr. H. Bushell, Brighton; Barnwood House Hospital, Gloucester, Secretary of; Barnsley Hall Asylum, Bromsgrove, Clerk to the; Messrs. Battle and Co., Neuilly; Mr. W. G. Burcombe, Lincoln; Dr. W. Bainbridge, Kelso; Bridewell Royal Hospital, Lond., Clerk to the; Birmingham Corporation, Treasurer to the.

C.—Dr. H. W. Crowe, Yelverton; Sir Halliday Croom, Edinburgh; Mr. A. V. Clarke, Lond.; Dr. H. Christal, Hoxne; Dr. H. J. Clarke, jun., Doncaster; Cork, Bursar of University College; Mr. T. A. Chalmers, Hook; Mr. J. F. Creighton, Melita, Canada; Dr. J. C. Carr, Liverpool; Mr. W. Cutting, Lond.; Cheltenham Corporation, Treasurer to the; C. E. T.

D.—Devonport Corporation, Treasurer to the; D. G. G. M.; Mr. J. E. Drake, Llansamlet; Dr. W. T. Dougal, Pittenweem; Delhi and London Bank, Calcutta, Manager of; Dr. W. A. Dingle, Lond.; Dalrymple House, Rickmansworth, Medical Superintendent of.

E.—Mr. A. R. Elliott, New York; Evian-Cachat, London Agent for; Dr. E. Elsmere, Leominster; Mr. W. Owen Evans, Pontardawe; Mr. P. Eynon, Penarth; E. E.; Mr. F. G. Ernst, Lond.

F.—Dr. A. Fleming, Corstorphine; Mr. H. McG. Forbes, Cuminestown; Farringdon General Dispensary, Lond., Secretary of

G.—Dr. A. F. Galloway, Lond.; Dr. J. A. K. Griffiths, Knighton; G., Bournemouth; Guardian Assurance Co., Lond.; Fleet-Surgeon H. W. Gordon-Green, R.N., Southsea; Mr. C. F. Gerhardt, Lond.; Dr. O. Gogarty, Dublin; G. F. S. G.

H.—Dr. A. G. Heron, Dromara; Mr. T. H. Hewitt, Lond.; Harrogate Infirmary, Secretary of; Dr. R. Higson, Bolton; Mrs. E. M. Hill, Lond.; Dr. J. Hunter, Linlithgow; Mr. W. H. Hubert, Billingshurst.

I.—Ingham Infirmary, South Shields, Secretary of.

J.—Dr. R. Johnston, Dundee; J. H.; J. H. F. N.; J. E. B.; Mr. W. Judd, Lond.; Messrs. W. and A. K. Johnston, Edinburgh: Mr. T. D. Jago, Lond.; J. L. B.; J. R. W.

K.—Professor A. Keith, Lond.; Mr. M. J. Kelly, Limerick.

L.—Messrs. W. Le Lacheur and Son, Lond.; Miss Livermore, Meonstoke; L. T.; Locum, Sunderland.

M.—Mr. E. Marett, St. Lawrence; Dr. A. Mauté, Paris; Messrs. J. F. Macfarlan and Co., Lond.; Dr. A. T. MacConkey, Elstree; Dr. L. Molloy, Blackpool; Messrs. W. K. Morton and Sons, Lincoln; Medical Graduates' College, Lond., Treasurer to the; Mr. R. Mosse, Berlin; Mr. A. Moxon, Ramsbury; Mr. C. Mansell Moullin, Lond.; Dr. A. R. Moody, Shelton; Lieutenant-Colonel F. F. MacCartie, I.M.S., Carrignavar; Mr. H. J. W. Martin, Lond.; Mr. T. K. Mulcahy, Limerick.

N.—National Provident Institution, Lond., Secretary of; Miss New, Lond.; Norwegian Vice-Consul, Liverpool; Norwood Sanatorium, Lond., Secretary of.

O.—Mr. C. A. P. Osburne, Old Catton; Messrs. Osborne Peacock Co., Manchester.

P.—Dr. W. A. Pusey, Chicago; Dr. A. M. Pollock, East London; Puddukotah, India, District Medical Officer of; Dr. J. J. Pringle, Lond.; Mr. M. Parera, Barcelona; Dr. F. J. Poynton, Lond.; Dr. H. A. Perkins, Tunbridge Wells; Mr. C. J. Perrott, Bristol; Purpose Manufacturing Co., Teddington, Manager of.

R.—Dr. Nathan Raw, Liverpool; Messrs. Robinson and Sons, Chesterfield; R. G.; Messrs. C. Roldan and Van Sickel, New York; Messrs. E. J. Reid and Co., Lond.

S.—Dr. C. R. Scott, Abingdon; Dr. D. J. Sherrard, Brighton; Stretton House, Church Stretton, Medical Superintendent of; Dr. A. Stewart, Cathcare, Cape Colony; Saccharin Corporation, Lond.; Mr. H. W. Scriven, Lond.; Dr. A. L. Sheppard, Frome; Messrs. W. B. Saunders Co., Lond.; Seltzogene Patent Charges Co., St. Helens; Dr. A. Sayba, Cairo; Surgeon, Wood Green; Sheffield Royal Hospital, Secretary of.

T.—Mr. J. Thin, Edinburgh; Mr. P. Templeton, Brighton; Mr. E. Treves, Hove; T. J. D.; T. L. B.

W.—Mr. V. Whitgreave, Penzance; Miss Walker, Lond.; Messrs. Wilson and Valdespino, Lond.; W. N. B. G.; West London Hospital, Dean of; Dr. J. W. Watterson, Morecambe; Westminster General Dispensary, Lond., Secretary of; Mr. C. Hamilton Whiteford, Plymouth; Mr. K. S. Wise, Georgetown; Dr. A. Watson, Broseley; Rev. R. J. Williams, Liverpool.

Y.—Mr. J. H. Yolland, Bromley, Kent.

EVERY FRIDAY. THE LANCET. PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.
Special terms for Position Pages.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

An Address
ON THE
CONTROL OF SCARLET FEVER.

Delivered before the Epidemiological Section of the Royal Society of Medicine on Jan. 28th, 1910.

By F. G. CROOKSHANK, M.D. LOND.,
MEDICAL OFFICER OF HEALTH AND SUPERINTENDENT, ISOLATION HOSPITAL, BARNES URBAN DISTRICT COUNCIL.

MR. PRESIDENT AND GENTLEMEN,—Occurrences, such as are within the experience of most of us, have led to the recognition of definite drawbacks to the attempted control of scarlet fever by removal to isolation hospitals. Statistical inquiries have led some to question altogether the usefulness of such removal, and quite recently we have in this place listened to a paper in which the author sought to establish the *needlessness* of any attempts being made to control the disease by removal. We have also to recognise a more or less coherent mass of lay opinion which is inclined to question the value of isolation hospitals, so far as scarlet fever is concerned, for the somewhat inconsequent reason that such hospitals are rather expensive institutions, and laymen who adopt this attitude are not prone to minimise the force of professional criticism of isolation hospital methods generally, and the hospital method of scarlet fever control in particular. It is necessary therefore that we should clear our minds of that professional cant which is as odious as cant in any other form.

My own opinion is that, even should it be proved that the removal of cases of scarlet fever to isolation hospitals does not generally lessen the incidence of the disease in the district served, yet still the provision of such hospitals, even by the most extravagant of municipalities, is about the cheapest thing in practical insurance offered to the small ratepayer, since for about 5*s.* or 6*s.* a year it insures him against all expense in the event of his household becoming stricken with infectious disease, and safeguards him against business or professional loss. But I do believe that the removal of cases of scarlet fever, if properly carried out, does reduce the incidence of the disease in the community served. I know it *reduces* the case mortality, and I think there is fair evidence that it has modified the type. I am convinced, moreover, that many, if not all, of the accidents or incidents of fever hospital segregation are as absolutely preventable as are the septic catastrophes which do not now occur in general hospitals.

I do not propose to-night to attempt the substantiation of all these beliefs; but am bound, as we all are, to admit that it is our duty, when attempting the control of disease in the interests of the community, to see that we achieve the irreducible minimum of the drawbacks that in all cases attend human endeavour, and in this case fall very hardly on individuals. It is clear enough, too, that if we can at the same time save expenditure we shall gain a more ready ear when we ask for power to administer. The control of scarlet fever in a community, so far as our present knowledge allows us to proceed, means the control of seasonal prevalence, the limitation of occasional outbreaks, and the destruction of endemic or sporadic foci. It involves special procedures: the organisation of a public health department and the particular adjustment of its relations to the practitioner; the establishment of an isolation hospital and the coördination of its administration with that of the public health department; the administration of the isolation hospital, so that complete control is obtained over the diseases admitted thereto.

EPIDEMIOLOGICAL CONSIDERATIONS.

Before discussing the way in which scarlet fever may be controlled *by* isolation hospitals and *in* isolation hospitals, it is necessary to state some epidemiological considerations. We cannot learn the natural history of scarlet fever in either the hospital or the laboratory. We can in these places learn facts which, set in due relation to others, are of importance. But the bacteriologist, or the hospital superintendent pure and simple, is no greater authority on the natural history of the disease than is a keeper at the Zoo on the habits of the tiger in his jungle. In fact, unless we are prepared to admit that our well-meant efforts are all beside the mark, we must acknowledge that modification of the natural history of disease follows interference by the public health service. Plague and diphtheria, for instance, are two diseases of which the epidemiology has been profoundly modified by human agency, intentionally and unintentionally, within the memory of the present generation. The effects of hospital treatment of scarlet fever as carried out during the last 30 years or so are probably less obvious than would have been the case had domestic isolation not been practised for years previously in some degree, and for the last vivid account of scarlet fever in a natural state in these islands we have to turn to the writings of Graves. Here we learn that in Ireland, in the early part of last century, scarlet fever was observed to occur (1) in epidemics; appearing in the late autumn, and dying away in the next spring, after a course of about seven to eight months; reappearing in successive years with raging intensity, and then perhaps disappearing from a district in epidemic form for years together; and (2) in sporadic cases, often of marked severity. It is worth noting that at this time all grades of severity were noticed, so much so that Graves formulated the axiom that "a constitutional affection, produced by morbid animal or vegetable poisons, may display its evidence by only one or two of the numerous symptoms which usually accompany it." And it is interesting to remember that the cases of this character appear to have been noted chiefly in connexion with the epidemics.

If we now turn to the tables furnished in the last edition of Sir Clifford Allbutt's "System of Medicine," it is seen that the curve of seasonal prevalence of scarlet fever still extends in London, as it did in Ireland a hundred years ago, over a period of seven or eight months. But in Ireland the months of prevalence were usually November or December to May or June. In London the months are June or July to January or February. Almost invariably, in fact, scarlet fever outbreaks of any magnitude (other than those due to milk) run for about eight months from first to last, and the period of greatest activity is always about six weeks. Now the ideas with which, as students, we became imbued were, firstly, that scarlet fever always breeds true; secondly, that a case of scarlet fever of the present day is in direct descent from the first case of scarlet fever that ever existed; thirdly, that outbreaks or epidemics are due to neglect of sanitary precautions; and, fourthly, that epidemics come to an end after undergoing a process known as stamping out. Lately another belief has become current, of which the profession usually seems to endow its holder with extraordinary self-satisfaction; it is that epidemics come to an end from exhaustion of the soil, or, as others say, the number of susceptible persons exposed to infection. Of course much virtue rests in the use of the word "susceptible." Any person exposed to infection at a certain time and not obviously infected may be said to be, or have been at that time, "not susceptible." The "soil" varies in different persons, and in the same persons at different times, no doubt, and "exposure to infection" is by no means a fixed quantity and cannot easily be defined. But does not the infective potency of the virus itself vary; or, what perhaps is not quite the same thing, does not the power of the virus to produce certain "specific" effects vary? The teaching of Pasteur's classical experiments with rabies and chicken cholera is very clear, and, as Professor Ritchie has well put it, in the laboratory an organism obtained from a lesion of malignant type soon loses its virulence or is less virulent than an organism from a less severe case of the same disease. Attenuation results from continuous growth on the same media, but virulence may be increased by passage through a series of bodies or by variation of the nutrient media. Moreover, while the virulence may be increased by such passage, continuous passage may lead to permanent attenuation.

I would ask all those of clinical experience if they have ever known the virus from a typical case of scarlet fever, after passage through two removes, to reproduce in a fourth case the typical symptoms of scarlet fever? With an exception to be presently mentioned, I never have; and I am not sure that, outside the limits of this exception, I have ever seen a *chain* of three typical cases of the disease. The exception is in the case of isolation hospitals. A first return case may apparently give rise to a second return case, and I have known of third, and heard of fourth return cases, making series of four or five cases in all. But these exceptions really do seem to prove the rule, for the isolation hospital experiment is not a pure one. Assuming that the series of return cases are not capable of other explanation, and that the third or fourth return cases are not delayed secondary ones, there is always the possibility, if not the probability, of a return case being, not a return of the original virus, but of another strain of the same virus, carried by an imperfectly immunised patient. It is true that families in which return cases occur are often families in which there is marked susceptibility to infectious disease, and one cannot refuse to admit that a virus, attenuated to a certain degree, may yet, on certain soils, produce a response otherwise not obtained. The hospital occurrence is, however, in fact directly analogous to the laboratory experiments, in which, when making subcultures, accidental contamination and reinforcement occur. And, until or unless I can hear of an authenticated chain, I am prepared to affirm that the virus derived from a typical, developed case of scarlet fever, after passing through two, or at most three removes in the human body, loses, if not its infective potency, at any rate its power of reproducing typical scarlet fever on normal soil. The virus, in fact, becomes attenuated, or recessive.

There is another clinical observation which many family practitioners will confirm. It is that a process of intensification often occurs. This Graves clearly saw without understanding. One child in a family has a sore-throat; there is no rash, no peeling, little fever. Another child, a week or two later, has a sore-throat, greater fever, and a peeling tongue. A third child develops scarlet fever, as we know and describe it. Surely this sequence is but the intensification of a virus in the bacteriological sense. Is it not within the experience of every general practitioner that such a series frequently occurs at the beginning of an "outbreak" of scarlet fever? Is not the observation repeated year after year in different schools and communities? Is it not a fair deduction that epidemics of scarlet fever (again, I am not speaking of milk outbreaks) follow the intensification of a virus by passage through the bodies of susceptible, or, if you will, responsive persons, and that such epidemics terminate by reason of the attenuation of the virus after passage through a further series of bodies? I think there can be no doubt of it, and that the series, from a first manifestation of the virus to its disappearance, usually consists of about six cases, of which the third and fourth are commonly the most "typical" and the most severe. Put in another way, the normal cycle of epidemic scarlet fever, or so much of it as we can at present recognise in human beings, does not extend beyond a sequence of six cases. The earliest and latest are the mildest and least typical; but infective potency lessens with attenuation. Through what phases the virus may pass, or in what media it may exist after it is lost sight of, is matter for examination. It may perish; it may continue its generation in human beings with other or no clinical manifestations until intensification occurs in response to variations of the soil or other conditions; it may have an external existence, in the humus or elsewhere; it may continue through other living hosts. Observations do seem to afford evidence that the virus does, or may, pass through a phase in cattle, but whether this be a necessary part of the full cycle or only an accidental side-tracking is, for the present, pure speculation. Neither can we say whence the virus of the first intensive case comes, nor what is the relation of marked sporadic cases to the epidemic cases or those of seasonal recurrence.

I am bound to say that, if one be asked to correlate scarlet fever with any one hygienic, or rather unhygienic, factor—in the way that relapsing fever is correlated with famine, typhus with foul air, typhoid with excremental pollution, cholera with water, and plague with the soil—one would say that there does seem to be a relation between sporadic scarlet fever and dust. Certainly cases of sporadic scarlet fever have been, in my experience, seen far more frequently in dusty houses of a peculiar type than in any others. If it be true that in outbreaks of scarlet fever, and during the ordinary seasonal prevalence, there is first an intensification and later an attenuation of the virus, certain facts are at once explained. If the usual sequence be a series of 6 cases, the probable maximum duration in time of such a sequence would be about 32 weeks, and the probable shortest duration of such a sequence about six weeks. The mathematical calculation can easily be made, assuming that the period of incubation varies from two to four days in cases of direct contact, and that infective potency is usually present on the second or third day, and rarely after the sixth week in pure infections; and I think it will then be found that an outbreak ought to extend over about the eight months usually observed, and that the maximum number of cases and the greatest increase in the number of cases ought to be observed within a limit of five or six weeks. Such, indeed, is the case every year in London and everywhere else, so far as I know. It will be found, too, I believe, on inquiry that the termination of outbreaks from attenuation of the virus, and consequent loss of infective potency, is a far more reasonable explanation than is the alleged termination from exhaustion of the number of susceptible persons. In fact, the latter hypothesis can only be sustained by question-begging about what "susceptibility" really means, and it is certain, I think, that in school outbreaks the proportion of persons exposed to infection in the second stage of the outbreak who, unprotected by previous attacks, yet escape, is too high to be explained away by talk of "natural immunity." We have, too, a simple explanation of the fact that many private practitioners and laymen have a strong opinion as to the infective potency of scarlet fever. They are those who see and recognise the intensive cases, and know, too, that the cases secondary to them are more virulent than the primary ones. On the other hand, specialist hospital superintendents, who, for obvious reasons, see more recessive cases than intensive ones, do not share what they consider the exaggerated fears of the layman and practitioner, and pass from scarlet fever wards to those devoted to diphtheria or other diseases freely and with impunity. But it is the atypical, intensifying case which finds its way through mistaken diagnosis now and again to the diphtheria wards, and sets up the crop of "cross infections" which we all so justly dread.

I think, also, that I can see the explanation of the very interesting observations so recently laid before us by Dr. Milne. I do not wish to minimise the value of antiseptic applications to the throat, and shall, indeed, presently refer to the subject as of cardinal importance. But is it not clear that the cases treated by Dr. Milne with such apparent success are really recessive cases and not intensive ones? The crucial test of the value of Dr. Milne's method would be, it seems to me, not the treatment in general wards of marked cases recognised *after* outbreaks are well established, but the treatment by his method of mild, atypical, intensive cases. The application of the method should, in fact, *prevent* outbreaks in the community affected, and not merely allow demonstration of the relative impunity with which developed cases can be treated in general wards when once the virus is undergoing attenuation. Indeed, Dr. Milne's results, and the results claimed for public health administration without isolation hospitals, seem to me to have one and the same explanation. There is no doubt at all that, when once an outbreak has started, and typical cases are recognised on every hand, the outbreak will terminate with mathematical certainty, and that remarkably few so-called secondary cases will occur, whether the cases be treated in a general hospital with inunction or at home without it. But the magnitude of the outbreak, seasonal or accidental, should be compared with those in districts where the methods I propose to discuss are in vogue, and the question may well be asked, Is it certain that in cases treated at home without apparent mishap the virus may not be transmitted in forms and manners not perhaps obvious, but yet dangerous; and does not strict aseptic hospital treatment offer the greater probability of destroying the virus—of making what a fireman calls a "good stop"? In my own district I know that when, in the autumn, every notified case, however mild, is admitted to hospital we shall get through the winter well; and that our seasonal prevalence is greater when we commence with a few mild cases which are kept at home by practitioners who assume an attitude of scepticism which they think advanced. The connexion between the various cases may not be demonstrable, but the correlation of the facts is undoubted, and the conditions of the district for which I am responsible are so far peculiar that I have reason for confidence in the observation. It is possible, and indeed probable, that the phenomena of intensification and attenuation may be, in the case of diseases other than scarlet fever, manifest to those who have eyes to see and ears to hear. There are many observations, especially in the older text-books, that are deserving of collation, but I allude to them now only so far as they incidentally support the notions I have endeavoured to express.

Some Clinical Features relating to Hospital Administration.

Before attempting to apply the consideration of these ideas to the practical control of scarlet fever there are some clinical features to be taken into account which are of importance chiefly from the point of view of hospital administration. I am accustomed to recognise cases of scarlet fever with tonsillar exudation, ulceration, pellicle, or membrane, as impure cases of the disease. In other words, I believe the pure scarlatinal infection gives no obvious exudation. Some cases without exudation may be, and probably are, impure infections; but this by the way. Cases of pure scarlatinal infection may vary in severity from the mildest degree to the most fatal, and no one will dispute that both the mildest and the most toxic case may run their course without any obvious exudation. Cases with exudation are to be recognised as dual, or even multiple, infections—symbioses if you will—and may be spoken of clinically as diphtherial, diphtheritic, rheumatic, septic, ulcerative, follicular, herpetic, or erysipelatous. Bacteriologically, the "plus" infection may be recognised as due to the Klebs-Löffler, the Hoffman, or the Vincent organisms; to pneumococci, to staphylococci, or to streptococci of various kinds and strains.

We have, however, to recognise, and especially in hospital, not merely the initial coincidence of two or more infections, but relapses, second attacks, and minor phenomena due to secondary infections with scarlatinal virus of perhaps another strain; and in addition the late occurrence of heterologous infections. What influence these infections, homologous or otherwise, have on the original virus is hard to say. They may, of course, modify it profoundly, and so interfere with what I have called the natural cycle of scarlet fever. I do not attach the slightest importance to peeling itself as infectious, but see no reason why flakes of epithelium should not be an excellent vehicle for the transmission of organisms derived from the mouth, nose, or ear, and to that extent I believe that skin peeling may be "infectious." So far, perhaps, the inunction of the body may be justified; but I hold it better to attack the mouth and nose directly rather than to dissipate attention to the skin; and the keynote of success in dealing with scarlet fever as it affects the individual is to regard it as an infection of the mouth (or nose) through a break of the surface, except in those rare but undoubted cases where it is found as an infection of a wound of the cutaneous or uterine epithelium. It cannot be doubted, of course, that dissemination of the specific virus may be aerial to the extent of the radius of expired droplets, or that substances and fabrics on which droplets, &c., fall can, in accordance with their suitability as a culture medium, convey infection across distances and through lengths of time. These facts are surely as obvious as are the commonplaces of the operating theatre; but it is, also, one of these commonplaces that an article sterile in itself may transfer a virus from wound to wound with disastrous results.

Practical Control of Scarlet Fever: "Bed Isolation."

Attempting now to deduce principles for the control of scarlet fever so far as our present epidemiological and pathological knowledge allows, one must commence with the proposition that the existence of the well-managed isolation hospital is justified as the best means of destroying the virus known to us, short of projecting the patients into space for eternity. It is quite clear that administrative control can only affect to a very limited extent the patient retained at home. The immediate removal of the patient allows for the prompt action of the public health department by way of destroying any traces of virus in the house. But the prompt diagnosis and notification of the disease, and the examination, and, so far as can be, the disinfection of persons in the house, depend on the relations between the practitioner and the health department. It is obvious that the main idea to be impressed on the practitioner is that cases are not necessarily infectious in proportion to their severity, and that the early, atypical, intensifying cases are probably those in which the virus has the highest infective potency, although the amount of virus (but not the degree of potency) may be greater in the later cases of an outbreak. Every effort, therefore, has to be made to encourage early and confident diagnosis, and the immediate transference of "first" cases to hospital, however mild or irregular they may seem to be. It is not necessary to labour the importance of each half-hour that passes between diagnosis and removal; the proof is the frequency with which secondary cases are notified in the first week. Nor should it be necessary to labour, in the interests of the hospital itself, the absolute necessity for the ambulance and its arrangements being ordered with the same degree of aseptic scrupulosity that obtains in the operating theatre of a modern hospital. Perhaps it is best not to inquire how often the ambulance of an isolation hospital is truly an aseptic one. Still, though secondary infections due to hospitalism begin in the ambulance and with the ambulance nurse it is at the hospital gates that the most obvious practical difficulties begin.

In the general hospital the only necessary basis of classification is that of sex, but in the isolation hospital we have had of late years to start with the number of prime infections we propose to treat; to double that number to give us wards for each sex and each disease; to add again for division into convalescent and acute classes; and to make yet further additions for the reception of mixed or doubtful cases, before we can arrive at the number of ward-blocks and wards necessary in the case of the particular district that has to be served. When dealing with hospitals of large size, projected to serve large districts, the proper provision of an adequate number of isolated pavilions does not give rise to great difficulty other than that of expense in building and administration, for hitherto the idea has, of course, been to provide a separate ward for each disease or combination of diseases likely to be treated, and so theoretically to provide for a number of maxima, although experience shows us that not all these maxima are likely to occur together. But in dealing with the needs of a district of, say, 40,000 or 50,000 inhabitants, the certainty that one will be lucky if allowed one bed per 1000 of the population makes the allotting and planning a task of the greatest difficulty. Naturally enough, the apparently logical solution has been to provide a separate ward for each patient, or, in other words, a series of cubicles. This plan has, for small districts, the great advantage that it allows economy in the numbers of the staff maintained, for the strict application of the old plan of "one disease, one ward-block, one staff," results not infrequently in the provision of more nurses than there are patients. The objections to the cubicle system seem to me to be two: (1) material—that of expense in construction; (2) moral—that the attention of the nurses becomes fixed on the partition as the safeguard. The barrier system adopted by Dr. J. T. Biernacki at Plaistow is free to a great extent from these objections, but the question I desire to raise is whether we may not, in small hospitals at any rate, if we get a firm grip of the real principles, safely treat all diseases side by side. I am convinced that we may. If this can be done generally, instead of having to provide for a series of maxima only one maximum needs to be provided for—the greatest total number of cases likely to need treatment at one time. This would mean probably not so often one bed per 1000 as one bed per 1500 of the population.

I recognise that the complete trial of the plan I suggest would mean the planning of a new hospital, and I have had, of course, at Mortlake, to make use of pre-existing buildings—separate pavilions separated by considerable open spaces and providing 36 beds on four acres of site. Having now three ward-blocks at my disposal, I do not deliberately place cases of scarlet fever and diphtheria side by side, but I have had to treat cases of diphtheria, typhoid fever, and erysipelas or puerperal fever in one ward, and on the admission of doubtful cases of scarlet fever or diphtheria into the wards nominally allotted to these diseases, I have not always been able to transfer them when the diagnosis has been found erroneous. But we have done away with separation between diphtheria and scarlet fever nurses, and therefore to that extent no longer separate *wards* or *diseases*. We isolate *patients* without any mechanical apparatus such as glass walls, or barriers, but by ritual observance only. It is not that one regards the transference of prime infections as a light matter; the idea is that it is as grave an affair professionally for a simple case of scarlet fever to acquire a pus infection as for a case of diphtheria to acquire typhoid or scarlet fever. Each patient, therefore, is isolated in his or her *bed* without partition or barrier. This can be done, if proper technique is observed, as easily as it is done in the surgical wards of a general hospital every day. Nurses can then pass from block to block, ward to ward, and bed to bed as simply and harmlessly as does a surgeon from a case of empyema to a laparotomy. They relieve each other as occasion may require, give assistance to each other, and interchange quite freely. The saving in staff expense alone is very considerable, and the general results are perfectly satisfactory.

The hospital of which I have control is certainly a small one, and I cannot give statistical results of magnitude, but in the last three years we have treated 120 cases of scarlet fever with one death, 73 cases of diphtheria with 7 deaths, and typhoid fever, erysipelas, measles, rötheln, cerebro-spinal meningitis, tuberculous meningitis, puerperal fever, tonsillitis, scarlet fever and whooping-cough, scarlet fever and diphtheria, and other diseases and combinations, quite successfully. There have been no cross-infections; very few return cases; no illness (save one attack of tonsillitis treated in the diphtheria wards) amongst the staff; no relapses or secondary rashes, and very few complications. Three cases of otitis media occurred, and were perfectly healed before discharge at the end of six weeks.

Before we commenced, in 1907, the system of bed isolation, we had quite as many troubles as others, in spite of the most careful ward separation and staff separation, but we have no apprehensions now. It is true that there are certain prime requisites for this method. One is that the matron in the absence of a resident medical officer, should have the fullest control of her staff and the keenest appreciation of the ideas; and in the appointment of Miss Bellinger I have been fortunate. Another is that never should the bed-space be less than the full minimum standard of the Local Government Board; and I hold that there is no heresy so great as supposing that children require less ward-space than adults; as children they may, but as virus-holders they do not. Again, every detail of the isolation hospital ward should be on a parity with the best surgical wards, and there must be the freest use of the steriliser. The steam disinfector is one steriliser, the laundry is another, and should be worked to the utmost; but the ward sterilisers are, in small hospitals, not used as they should be.

Every patient should be kept in bed for three weeks, and for the first few days after leaving his bed should recline on a lounge separated by a few feet from others. We give to each one on admission a complete outfit, kept on his locker, of porcelain tray, kidney bowl, spitting mug, receiver, spray or syringe, thermometer in glass vase, glass spatula and toothbrush in glass vase, feeder, medicine glass, brush and comb, and other articles. These are all kept during the whole illness for the patient's exclusive use, and are frequently sterilised by appropriate methods, being, of course, again sterilised or, if necessary, destroyed at the end of the illness. The spatula, thermometer, and toothbrush are kept continuously in izal solution, and the same substance shaken up with water or paroleine is used for spraying, syringing, or douching the mouth, nose, &c., every four hours during the first week, and three times a day later. No nurse passes from one prime infection to another without first disinfecting her hands and donning a special ward overall kept for the purpose, and, of course, disinfecting her hands afterwards. Certain cases of doubtful nature and special or mixed cases are marked by a warning tab affixed to the bed card, and for each of these cases a special overall is used. In addition to the washing of the hands required from everyone on leaving a ward, disinfection for each case is required and made easy by the placing of a stand with solution, towel, &c., at the foot of each "special" bed, or between the beds of each two or three simple cases, while rubber gloves are used in dressing wounds or attending to puerperal cases. All this means little trouble really, and is amply repaid by the knowledge that security is obtained thereby. The system can be further elaborated, but, of course, in a small place one has to go slowly and acquire material by degrees. No doubt those who believe in inunction and swabbing with oils will say that much of this is unnecessary. No doubt it often is, for recessive cases, so far as the obvious propagation of the disease is concerned; but it is the virus from the intensive cases we want particularly to destroy, and the ritual must therefore be unhesitatingly employed. No doubt many others take just as much care as we do, and with even better results. It is rather to the principles than to the practice that I desire to attract attention. I feel confident that if the principles are grasped we shall be able to handle our cases far more boldly than we do at present; and if, indeed, further experience justifies us in mixing our cases more freely, we shall undoubtedly require from municipal authorities less expenditure, at any rate in districts of moderate size, since not only the administration but the construction and size of isolation hospitals will be modified. If we can show better and cheaper hospital results we shall be able to tune up to a higher pitch of efficiency and, until pathological research or clinical observation gives us more knowledge and shows us a still better way, bring scarlet fever under fuller control. I may perhaps say that, although I have to deal with a district which in 1896 had a population of 16,200, and now has one of 31,000, with all the changes that attend increase and urbanisation, still the occurrence-rate of scarlet fever has gradually fallen from 3·5 per 1000 in the quinquennium 1896–1900 to 1·6 per 1000 in the last four years.

I am greatly obliged to you, Sir, and the members of the Section for your kind hearing. It should perhaps be said that since these notes were written I have become aware that Dr. Chapin, of Rhode Island, U.S.A., has written an essay, to which has been awarded a Fiske Memorial Prize, in which he advocates the treatment of scarlet fever, in general fever wards, on much the same lines as those I have described. I have not yet been able to obtain a copy of this essay, but am gratified to know that I am not quite alone in holding these beliefs. I ought, too, to express my indebtedness to the valuable and stimulating paper read by Dr. Butler before the members of this Section in November, 1908.

A Lecture

ON

THE SURGICAL TREATMENT OF DUODENAL ULCER.

Delivered at the Post-Graduate College, Hammersmith, on Jan. 19th, 1910,

BY LEONARD A. BIDWELL, F.R.C.S. ENG.,
SURGEON TO THE WEST LONDON HOSPITAL.

GENTLEMEN,—Before discussing the question of surgical treatment I wish to make a few remarks on the

POSITION, CAUSES, AND SITUATION OF DUODENAL ULCERS.

The *position* of the ulcer is practically always in the first part of the duodenum above the point of entry of the common bile duct; in cases in which perforation occurs the ulcer is nearly always on the anterior wall, and in cases in which pain and hæmorrhage are the prominent symptoms the ulcer is situated on the posterior wall.

The position of the ulcer with relation to the entry of the common bile duct is interesting, as the portion of the duodenum between the pylorus and the bile duct papilla is the only part of the intestinal tract which is subjected to the irritation of acid gastric products before they are mixed with, and neutralised by the bile. It is noticeable that cases of duodenal ulcer are always accompanied by hyperchlorhydria, so the ulcer may be considered as a sort of burn caused by the intensely acid gastric juice. Some, however, maintain that the hyperchlorhydria is the effect and not the cause of duodenal ulcer.

The actual ulcer may be started by a thrombosis of a minute vessel destroying the vitality of a portion of the mucous membrane, by injury due to the passage of a rough particle of food or by septic infection, the usual source of such infection being the teeth or gums.

The size of the ulcer varies from that of a split pea to about the size of a shilling; it is rarely larger than this unless two ulcers have existed close together and have coalesced. When on the posterior wall of the duodenum it is usually indurated and is often deeply excavated, and the ulceration may extend into the pancreas and cause hæmorrhage by erosion of one of the pancreatic arteries.

DIAGNOSIS.

With regard to diagnosis, there is no doubt that the principal and often the only symptom of duodenal ulcer is *pain.* The pain is usually severe and in many cases comes on two to four hours after food. This pain is often relieved by taking food. Closely allied to this pain, which is relieved by taking food, is the so-called hunger pain, which consists in an irresistible craving for food, together with pain, which is temporarily relieved by eating; patients with this symptom will have food by their bedside at night and will carry meat lozenges or chocolate about with them. I have noticed that the hunger pain has a tendency to return within an increasingly shorter time of taking food and to be less relieved by food.

The old explanation of this symptom was that the pain was due to the acid gastric juice passing over the ulcer when the pylorus was open, but that as soon as food was swallowed the pylorus contracted and no more gastric contents were allowed to pass through the pylorus till gastric digestion was complete, and so the ulcer was not irritated during this period. This explanation, however, does not appear to be correct, as gastric juice is not secreted when the stomach is empty and requires the stimulus of food to excite it. Moreover, the presence of hyperacid gastric juice causes a spasm of the pylorus and so prevents its escape. The real explanation probably is that when the stomach is empty it contracts and pulls upon adhesions about the base of the ulcer. Moreover, I have noted that the cases in which hunger-pain is marked the ulcer has usually been on the posterior wall of the duodenum and has been adherent to the pancreas.

The pain in duodenal ulcer is generally referred to the epigastrium, and is described as boring through to the back to a point just to the right of the last dorsal spine; there is usually a tender spot about one inch above and to the right of the umbilicus, and often hyperæsthesia to the right of the last dorsal spine behind. In conjunction with the tender spot we often find some rigidity of the right rectus muscle, this symptom being most important and indicating either a duodenal ulcer or an irritated gall-bladder.

The next symptom of importance is unexplained *anæmia,* this, of course, being due to repeated minute hæmorrhages from the ulcer which are not sufficient in quantity to produce melæna. Anæmia, in an otherwise healthy adult, points to duodenal ulcer or malignant disease. Headache, inability to do business, and obscure mental symptoms are often associated with duodenal ulcer. Such cases are difficult to diagnose.

No further symptoms may develop for some time, and all may clear up, leaving the patient in perfect health for months or even years; the symptoms, however, practically always return and the recurrence can usually be traced to a chill or to indiscretion in diet. Sooner or later complications occur, the ulcer may perforate, it may bleed, or cicatricial contraction may occur in the duodenum.

Perforation often occurs quite early in the disease, and even without any previous history of pain; the ulcer is nearly always on the anterior surface. The symptoms are more or less familiar; there is most acute abdominal pain accompanied by the signs of abdominal shock—namely, rapid, feeble pulse, subnormal temperature, sweating, facies Hippocratica, and vomiting which is often blood stained. The abdomen is retracted at first and is always rigid and does not move on respiration, there is tenderness, and the rigidity is most marked over the upper part of the right rectus muscle; later there may be diminution of liver dulness and signs of free fluid in the abdomen. When the perforation takes place on the posterior surface of the duodenum there will be no general peritonitis but a subphrenic abscess will form.

Turning now to *hæmorrhage* the symptom of a severe bleeding may simply be sudden blanching and fainting, as the blood may all pass into the intestine, and melæna will not appear for 24 hours. In some cases the blood may regurgitate into the stomach and may be vomited in enormous quantities. In cases with a severe hæmorrhage there is usually a more or less long history of an ulcer, and pain has been a prominent symptom.

The symptoms of *cicatricial contraction* of the duodenum occur at a later stage of duodenal ulcer, and seldom occur except in ulcers of large size which are situated on the anterior or lateral walls of the duodenum. The train of symptoms which then arise are vomiting, dilatation of the stomach, and emaciation. Vomiting is not a usual symptom of duodenal ulcer in the early stages and only occurs in cases of pyloric spasm due to hyperchlorhydria.

In the examination of a case of duodenal ulcer it is desirable to ascertain whether the stomach is dilated and to test chemically the gastric contents. The outlines of the stomach may also be ascertained by examination with X rays after a bismuth meal.

RESULTS OF MEDICAL TREATMENT.

The next point to consider is whether medical treatment can effect a permanent cure in a case of duodenal ulcer. It is certain that starvation and various other methods can cure the ulcer for a time, but the cicatrix is not strong and easily breaks down again. Moreover, the starvation treatment is very irksome. In view, therefore, of the certainty of recurrence after medical treatment, the unpleasantness of this treatment, and the gratifying results after operation I am inclined to recommend gastro-enterostomy in every case of duodenal ulcer where a diagnosis has been made.

SURGICAL TREATMENT.

The first operation to be considered is that for a perforation of a duodenal ulcer. Here there is no question about the absolute necessity for an immediate operation, and the results will depend principally upon the time which has elapsed between the perforation and the operation. I would remind you again that the previous history of an ulcer may be quite indefinite or even negative, because perforation often occurs early in the history of an ulcer when it is situated on the anterior surface of the duodenum.

The surgical treatment of a perforated duodenal ulcer consists in (1) closing the perforation; (2) doing a gastro-enterostomy when necessary; (3) cleansing the peritoneal cavity and providing drainage when necessary; and (4) in combating the shock which is present. (The operation was described in detail.) The chief points to consider are: (1) whether to do a gastro-enterostomy; (2) whether to drain the peritoneal cavity and to flush it out; and (3) the method of treating shock.

1. Gastro-enterostomy should only be done in cases where closure of the perforation causes contraction of the lumen of the duodenum.

2. In very early cases it is not necessary to drain the peritoneal cavity and it should not be irrigated; simple sponging out is sufficient. In cases when the perforation has existed for some time the abdomen should be drained by counter openings in each loin and by another above the pubes or in the rectum; when the drainage-tubes are in position the abdomen should be flushed out with saline solution.

3. To overcome shock an intravenous saline infusion is carried out during the whole operation; 10 to 15 minims of adrenalin chloride is usually added to the saline; two or three pints are infused.

The next class of case requiring operation is that in which one or more *severe hæmorrhages* have occurred; here the important point to decide is when to operate. When the patient is blanched and almost pulseless immediately after a hæmorrhage there is no chance of success; it is therefore better to wait for seven to ten days for the patient to recover somewhat from the loss of blood; if we wait longer than this there is a risk of further hæmorrhage as soon as the normal blood pressure is restored. I have several times seen a second hæmorrhage occur whilst we have been waiting for the patient to recover from the effects of the first. If a second hæmorrhage occur we should not wait more than four days before operating.

The operation consists in performing gastro-enterostomy and preventing further bleeding. If the ulcer is on the anterior surface a purse-string suture is passed round the circumference of the ulcer on its peritoneal surface; this when tied constricts the ulcer and effectually stops the bleeding. The constricted ulcer is then invaginated into the duodenum with a row of Lembert sutures. If the ulcer is on the posterior surface of the duodenum the anterior wall of the gut opposite the ulcer is invaginated into the gut with three rows of Lembert sutures, forming a firm pad which presses on the ulcer, prevents any further bleeding, and occludes the passage through the duodenum.

In any case of hæmorrhage gastro-enterostomy is required, and to combat the shock intravenous saline infusion should be carried out during the operation, as much as five or six pints being introduced.

In *cicatricial contraction* of the duodenum a simple gastro-enterostomy is all that is required and occlusion of the pylorus or duodenum is not necessary. Except in very debilitated patients saline infusion will not be required.

In *uncomplicated* cases of duodenal ulcer the operation consists of a posterior gastro-enterostomy combined with occlusion of the pylorus, the effect of such an operation being effectually to prevent any of the gastric contents from ever passing over the ulcer again. The ulcer when once healed is permanently cured. When gastro-enterostomy alone is done the new opening overcomes any dilatation of the stomach, due to spasm of the pylorus, and allows the ulcer to heal; after a time, however, the gastric contents will again pass through the pylorus and the ulcer may recur. The pylorus is occluded by three rows of Lembert sutures placed one over the other; this will be found to completely invaginate the duodenum on itself and to occlude the pylorus.

The *after-treatment* of cases of operation for duodenal ulcer does not vary very much, whatever has been the nature of the case beforehand. In the first place, all patients should be placed in the Fowler position as soon as the immediate shock of the operation has passed off. This is specially important in cases of perforation, since should any leakage occur when the patient was in the recumbent position the fluid would track into one of the subphrenic spaces, forming a highly dangerous subphrenic abscess, whereas if the patient is in the sitting position any fluid will track into the pelvis, where an abscess is comparatively harmless and easily treated.

The next point in treatment is to keep up the normal saturation of the body tissues. A patient requires about three pints of fluid in the 24 hours. If this amount of fluid can be taken by the mouth all is well, but during the first few days after a stomach operation only a small quantity is allowed by the mouth, so the balance must be introduced in other ways. My practice is as follows. For the first 24 hours 10 ounces of saline solution, in which is dissolved half an ounce of glucose, are given by the rectum every four hours. For the first 12 hours teaspoonfuls of hot water are given occasionally; after 12 hours, barley water, albumin water, and raisin tea are given in half-ounce doses every hour; after 24 hours the dose is increased to 1 ounce, after 36 hours to 2 ounces, and after 48 hours to 3 ounces every 2 hours. The amount and number of saline injections are proportionately reduced. Semi-solids are given on the fourth day and chicken or fish on the fifth day. When there is much shock 1-60th grain of strychnine is given hypodermically every 4 hours, and if the patient is in much pain or is restless, a quarter of a grain of morphia with 1-120th grain of atropine is injected on the first night after the operation. It should not, however, be repeated. In uncomplicated cases the patient is kept in bed for a fortnight, and usually leaves the hospital within three weeks.

Results.—In cases of perforated ulcer the result depends almost entirely on the interval which has elapsed between the perforation and the operation; cases operated on within six hours of perforation practically always recover, those within 12 hours recover in most cases, and beyond this time the prognosis is doubtful.

In cases of hæmorrhage the prognosis is always grave, as the condition is desperate, and though operation holds out a good hope of success, the mortality will always be from 10 to 15 per cent.

In operations for cicatricial contraction the results are most successful; the mortality is practically nil, except in debilitated patients. In no class of stomach operation are the results so good, as the patients regain perfect health.

In cases of ulcer without urgent symptoms the mortality is slight and is confined to accidents such as pulmonary embolism, &c.; the permanent results are most satisfactory, in my own cases 85 per cent. are completely cured, and the remainder derived great benefit. In my earlier cases I had some trouble from vicious circle, but these were cured after an entero-anastomosis. I have also had two recurrences after simple gastro-enterostomy; but I have not had any since I have occluded the pylorus in addition to the gastro-enterostomy.

In conclusion, the surgical treatment of duodenal ulcer is urgently demanded in cases of perforation, severe hæmorrhage, and of cicatricial contraction; it is much to be desired in every case of duodenal ulcer whenever the diagnosis is made.

THE RESULTS OF RE-MINERALISATION IN CONDITIONS OF FAULTY METABOLISM, SUCH AS NEURASTHENIA, &c.

By HUBERT HIGGINS, M.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond.,
LATE DEMONSTRATOR OF ANATOMY, UNIVERSITY OF CAMBRIDGE, AND ASSISTANT SURGEON TO THE ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

In The Lancet of April 18th, 1908, p. 1136, I published a paper entitled "Observations on Blood Pressure, Chlorine Retention and Dechlorination, Hyperacidity, and Variations in the Starch Ration," in which were recorded the results of a series of analyses made to elucidate certain practical problems in metabolism. The present paper is a continuation of that work. The problems dealt with are those concerned with the art of the adaptation of cases with the various factors of environment, and it will be seen that the measurements made for diagnostic purposes or as landmarks on the road to recovery have been necessarily limited to those that can be made by a single individual in a day. I have found it necessary to make continuous observations for long periods of time, as the difficulty in the interpretation of one or two analytical observations is almost insuperable without some sort of measurable, positive knowledge as to the origin of the condition and the course it must take in recovery. A little consideration shows the great difficulty there is in the employment of the numerous devices at one's disposal for the purpose of not only presenting to the patient the necessary chemical elements of the protoplasm in their optimum proportion and quality, but to be able to prescribe the duration of the treatment and to supply favourable factors of environment. The circumstances favouring either retention or the discharge of chlorine afford a comparatively easy method of ascertaining these data; even by the employment of the meagre resources at my disposal the results have been unexpectedly successful.

The observations recorded below have been made mainly with the object of answering the following questions: 1. Is it possible to arrive at a numerical formula indicating the "state of matter" of the somatic protoplasm? 2. Is chlorine retained in the tissues so as to preserve the balance of colloids and crystalloids when there is a deficiency of phosphorus? 3. Which observations can be relied upon as a guide to successful treatment and the limit of its duration? In Case A a group of characteristic measurements were found that showed no indication of variation and instability till a "re-mineralising" mixture was added to the ration. I have been successful in causing the elimination of parenchymatous chlorine, and in altering the tissues so that its tendency to retention is either lost or considerably diminished. The following are the case records on which my thesis rests:—

Case A.—A man, aged 42 years, who had suffered for some years from constipation and neurasthenia. He had been obliged to relinquish his occupation for over five years. He was not easily fatigued by physical exercise and found no difficulty in walking ten miles. He had noticed that he had sweated with difficulty and in insignificant quantities for some years. The most conspicuous symptoms were mental, even letter-writing presenting an almost insuperable difficulty. The extent of the patient's preoccupation with his infirmities was such that he could talk and think of nothing else. He had a fairly good appetite, he took a very small amount of fluid during the day and had a noticeable distaste for salt, not taking it, for instance, with his eggs. He was emaciated and suffered from Glénard's disease. The blood pressure was between 85 and 90 and the temperature was 96° F. After fitting the patient with a Glénard's belt and keeping the colon empty with oil enemata, the following ration was given and persisted in till the end of the treatment. 1. Proteid; it was particularly insisted on that all proteids should be absolutely fresh; red beef-steak was given at least once a day, mutton, lake trout, and chicken were given occasionally. They were always weighed after cooking for the purpose of tabulating their amounts. 2. Fats; as much fresh butter was given as possible. 3. Starches; biscuits, pulled bread, crusts, and toast, were allowed, while soft, pulpy starches were forbidden. It is essential in treating these conditions to give the optimum starch ration (in Case A it was from 50 to 75 grammes), avoiding on the one hand the evil effects produced by the absorption of fatty acids from the faulty digestion of an excessive ration in the intestinal canal, and, on the other hand, the disadvantage of an insufficient ration. Fortunately the practice of poltophagic mastication [1] appears to be a most delicate indicator of the optimum ration; it may even be said to give evidence of temporary or permanent general conditions. Thus, in states of extreme fatigue it will be found that the poltophagic mastication of starch may be lost in consequence of the meagre flow of saliva, even though thirst has been satisfied throughout the course of the work causing the fatigue. It is recognised even among starch feeding populations that the power of starch digestion diminishes as the day advances. I remember seeing a remarkably fine specimen of a peasant woman who had been successfully nursing her daughter and granddaughter providing an abundant supply of milk; in addition to this feat she received the respectful admiration of several villages in that she was able to eat a large dish of potatoes in the evening without inconvenience. 4. Salt; the patient was directed to eat as much as he wished, and was informed that as he improved he would eat more salt, and that if he took a larger ration it would not interfere with the elimination of his retained chlorides. Green vegetables, milk, and fruit were omitted from the ration mainly for reasons of expediency, the patient having been under special medical treatment for his stomach condition for some time. In addition to this the colon had passed from the spastic into the atonic state, when it is often advantageous to reduce the bulk of the ration. After a period of six days (No. 1 in the table), during which observations were made enabling me to obtain the data for comparison with the subsequent observations, the following remineralising substances were administered as an additional ration: (1) 0·2 gramme of iodine in organic combination; (2) from 1 to 3 grammes of magnesium oxide and calcium carbonate; and (3) about 1·5 kilogrammes of mixed vegetables (cabbage, onions, carrots, leeks, sage, celery, &c.) which were finely divided, crushed, boiled for three or four minutes, and kept in a Norwegian stove for ten hours, the resultant mixture being strained and concentrated to about a wineglassful.

TABLE I.—*Case A. Ration Scale and Consequent Observations.*

Observation numbers corresponding to those in Table II.	Ration.					Temperature.		Body weight (Kilos.) N. and M.†	Blood pressure (Mm. Hg) M. and E.	Exercise (miles).	Weight lost per hour at night (grms.)	Liquid ingested approximately (c.c.)
	Proteid (grms.)	Starch (grms.)	Fat (grms.)	NaCl (grms.)	Eggs.	Mouth (° Fah.) M. and E.*	Rectum (° Fah.) M. and E.					
3‡	—	—	—	—	—	97·2 97·2	98·7 98·9	54·5 53·75	—	—	41	775
4	265	73	151	1·7	3	97·9 97·9	99·1 98·9	55·0 54·5	108 108	2½	29	725
5	256	72	191	1·7	3	97·7 98·7	98·7 99·1	56·0 55·25	114 116	3½	31	775
6	328	70	204	1·7	3	98·1 98·3	99·1 99·1	57·0 56·5	113 115	2½	35	825
7	283	65	205	1·7	3	98·3 98·3	99·3 99·1	57·5 57·0	114 118	4	31	775
8	155	45	158	1·7	3	98·7 98·7	99·7 99·7	58·0 57·75	118 116	3½	35	775
9	171	40	123	1·7	2	98·5 98·5	99·5 99·3	56·75 56·25	110 115	3½	37	775
10	243	59	181	1·7	3	98·5 98·3	99·1 99·1	58·5 58·0	110 115	5	27	875
11	195	47	175	1·7	3	98·5 98·3	99·1 98·9	59·0 58·5	112 118	4	35	825
12	206	55	193	1·7	3	98·3 98·1	99·1 99·1	59·5 58·75	110 114	5½	35	825
13	206	57	178	1·7	3	98·3 98·1	99·1 99·1	60·0 59·75	110 115	6	33	825
14	183	57	171	1·7	3	98·3 97·9	99·1 98·9	60·75 60·25	111 114	7	23	875
15	226	53	180	1·3	3	98·1 98·1	99·1 98·9	61·75 61·0	108 116	4	39	925
16	216	60	186	1·3	3	98·3 98·3	99·1 99·1	62·5 61·75	114 118	9	43	975
17	201	52	214	1·3	2	98·3 98·1	99·1 99·1	62·5 62·25	110 115	4½	39	825
18	200	62	170	1·3	2	98·1 97·9	98·9 98·7	61·5 61·0	115 120	6	33	925

* M. and E. = Morning and Evening.
† N. and M. = Night and Morning.
‡ With regard to Nos. 1 and 2 no observations were made.

The ration of iodine is especially useful in conditions where the specific gravity of the urine is low and where there is an abnormal amount of NH_3.

The main indications that I have followed in the administration of calcium are a blood pressure under 100 or a large loss of calcium in the urine. Magnesium, which Loeb [2] has described as having dynamical properties similar to those of calcium, is probably useful for the purpose of facilitating the solution of calcium oxalate [3] and to supply its deficiency in the tissues, whence it may have been slowly abstracted by oxaluria. There appears to be some evidence that magnesium plays an important part in metabolism; on this point Gaube du Gers [4] writes: "In that condition of retarded nutrition with its protean symptoms called neurasthenia a state of demineralisation is present—that is to say, relative mineral starvation. This deficiency in the mineral elements of the soil is not due to feebleness of the tissues, but owing to demineralisation healthy metabolism is impossible." According to this author and Deschamps,[5] who has made practical use of this principle in the treatment of neurasthenia, the element that is conspicuously deficient is magnesium, which they state is an important constituent of the nervous tissues, especially the grey matter. They state also that magnesium diminishes in the urine during intellectual efforts and increases afterwards. The vegetable salts were given mainly for their potassium, which Bunge [6] found to expel chlorine from the tissues. It is interesting to recall that vegetable salts are an indispensable ingredient of the ration of the starch feeding populations both in the South of Europe and in many parts of Asia. Fresh fruit juices, especially grapes, or vegetables boiled in milk and strained, are useful alternatives. Such mixtures are most useful in nervous, irritable conditions with insomnia.

In order to record the variations resulting from the treatment a number of observations were made twice daily, each result recorded in the tables being an average of six observations. Among the factors of the tables will be found the loss of weight per hour at night. This is obtained by weighing the patient at night and in the morning, then dividing the difference between the two by the number of hours after subtracting the weight of the urine, the resulting number will show variations between 10 and 100 grammes an hour. I found in my own case when I was losing from 75 to 100 grammes an hour, the ingestion of a gramme of calcium carbonate at night would be followed by a considerable decrease in the weight lost which was accompanied by a diminution in the appetite for breakfast. This observation was frequently repeated; it raises an interesting point as to the cause of the excess carbon ration found in conditions where fat is being stored, as in the early stages of toxæmia preceding hibernation. If it is due to a "holding up" or precipitation of the calcium ions by combination with organic acids which Loeb [7] showed to occur in his observations, it would link up this phenomenon with the immediate and striking effects of phosphoric acid on heart failure and palpitation [8] (which are also favourably affected by calcium chloride) and fatigue sensations that are so frequently found

---

[1] Higgins: Is Man Poltophagic or Psomophagic? THE LANCET, May 20th, 1905, p 1334. The soft palate in man and the poltophagic animals is an organ for the digestion of starch in the mouth. Prolonged conscious mastication, with the rejection of fibrous material (except in those cases that have atonic colons, when used with care) does harm by causing coprostasis from atrophy of the muscular coat of the bowel from disuse when continued for too long a period of time.

[2] Loeb: The Dynamics of Living Matter, pp. 79–80.

[3] Von Noorden: Metabolism and Practical Medicine, vol. iii., p. 1047.

[4] Gaube du Gers: Cours de Minéralogie Biologique, p. 209, Paris, 1897.

[5] Deschamps: Les Maladies d'Energie, p. 162 et seq., Alcan, Paris, 1908.

[6] Bunge: Physiological and Pathological Chemistry, p. 120.

[7] Loeb: Op. cit., pp. 79 and 80.

[8] Higgins: Op. cit., p. 1141.

TABLE II.—*Case A. Record of Urinary Analyses, each number being an Average of Six Observations.*

Number.	Dates.	Volume, D. and N.*	Total volume.	Specific gravity.	Solids, D. and N.	Total solids.	Chlorides, D. and N.	Total chlorides.	Urea, D. and N.	Total urea.	Ammonia, D. and N.	Total ammonia.	Uric acid, D. and N.	Total uric acid.	P_2O_5, D. and N.	Total P_2O_5.	Earthy phosphates, D. and N.	Total earthy phosphates.	Magnesium phosphate, D. and N.	Total magnesium phosphate.	Calcium phosphate, D. and N.	Total calcium phosphate.	Calcium ppt. by NH_3.	Calcium in NH_3 filtrate, D. and N.	Total calcium in NH_3 filtrate.	Acidity in grms. oxalic acid, D. and N.	Total acidity in grms. of oxalic acid.
1	July 28th August 2nd	230 241	471	1026 1026	13·7 14·3	28·1	2·46 2·33	4·79	7·08 7·08	14·1	—	—	·255 ·275	·530	0·87 0·79	1·66	·336 ·322	·658	·098 ·112	·210	·138 ·244	·382	·454	·22 ·205	·425	1·66 1·54	3·2
2	,, 3rd ,, 8th	332 501	833	1024 1020	17·8 20 7	38·5	4·52 4·71	9·23	7·29 9·13	16·4	·258 ·263	·521	·269 ·259	·528	0·59 0·67	1·26	·258 ·354	·612	·146 ·242	·388	·154 ·125	·279	·437	·171 ·157	·328	1·16 1·59	2·75
3	,, 9th ,, 14th	296 480	776	1027 1022	18·0 21·9	39·9	3·54 4·35	7·89	7·96 11·1	19·0	·247 ·268	·515	·231 ·371	·601	1·00 1·06	2·06	·41 ·583	·993	·252 ·308	·560	·158 ·258	·416	·411	·172 ·224	·396	1·2 0·88	2·08
4	,, 15th ,, 20th	396 531	927	1027 1023	21·3 29·9	51·2	3·97 5·3	9·27	8·2 12·47	20·6	·258 ·392	·650	·247 ·403	·650	0·74 0·96	1·7	·434 ·568	1 002	·218 ·396	·614	·18 ·186	·366	·551	·108 ·267	·375	0·92 1·13	1·92
5	,, 21st ,, 26th	303 403	706	1031 1028	22·8 25·8	48·6	3·57 3·41	6·98	9·2 13·3	22·5	·19 ·247	·437	·298 ·316	·614	1·09 1·07	2·16	·507 ·632	1·139	·234 ·387	·621	·134 ·170	·304	·34	·116 ·168	·284	1·33 1·59	2·92
6	,, 27th Sept. 1st	488 458	946	1028 1023	25·8 27·6	53·4	4·71 4·08	8·79	12·5 10 9	23·4	—	—	·398 ·372	·770	1·1 1·02	2·12	·737 ·51	1·247	·313 ·34	·653	·247 ·25	·497	·452	·14 ·086	·226	1·23 1·45	2·68
7	,, 2nd ,, 7th	530 393	923	1028 1025	27·8 21·3	49·1	4·86 4·33	9·19	11·4 10·26	21 6	·2 ·214	·414	·356 ·309	·665	1·22 1·0	2·22	·596 ·539	1·135	·42 ·32	·74	·267 ·203	·47	·27	·087 ·089	·176	1·37 1·37	2·74
8	,, 8th ,, 13th	353 325	678	1028 1025	22·6 18·0	40·6	3·31 3·22	6·53	11·16 10·1	21·2	—	—	·303 ·271	·574	1·21 0·92	2·13	·283 ·271	·554	·142 ·131	·273	·141 ·136	·277	—	·097 ·081	·178	1·17 1·4	2·57
9	,, 14th ,, 23rd	323 318	641	1029 1027	19·8 18·7	38·5	2·61 3·00	5·61	10 3 10·3	20 6	—	—	·26 ·255	·515	1·34 1·13	2·47	·266 ·258	·524	·078 ·084	·161	·169 ·174	·343	—	·073 ·03	·103	1·76 1·47	3·23
10	,, 24th ,, 29th	333 398	731	1030 1024	22·9 21·3	44·2	3·43 3·19	6·62	9·9 11·3	21·2	—	—	·336 ·291	·627	1·46 1·23	2·69	·261 ·373	·534	·103 ·165	·268	·158 ·195	·353	—	·106 ·093	·199	2·08 2·11	4·19
11	,, 30th Oct. 5th	328 341	669	1030 1025	27·4 23·9	51·3	4·16 3 05	7·21	11·8 10·8	22·6	—	—	·277 ·367	·644	1·64 1·51	3·15	·26 ·314	·574	·169 ·174	·343	·178 ·119	·297	—	·175 ·124	·299	—	—
12	,, 6th ,, 11th	353 346	699	1030 1024	24·9 16·8	41·7	4·02 2·82	6·84	10·7 10·4	21·1	—	—	·352 ·295	·647	1·32 1·08	2·4	·344 ·405	·749	·205 ·209	·414	·195 ·201	·396	—	·155 ·142	·297	2·62 2·0	4·62
13	,, 12th ,, 17th	345 341	686	1029 1025	22·5 18·0	40·5	4·27 2·64	6 91	9·6 9·2	18·8	—	—	·298 ·273	·571	1·34 1·24	2·58	·332 ·358	·67	·222 ·232	·454	·109 ·107	·216	—	—	—	1·68 1·66	3·34
14	,, 18th ,, 23rd	391 403	794	1029 1023	24 9 19·4	44·3	4·64 2·85	7·49	11·2 9·1	20·3	—	—	·34 ·312	·652	1·53 1·09	2·62	·415 ·407	·822	·203 ·195	·398	·179 ·214	·393	—	—	—	1·63 1·84	3·47
15	,, 24th ,, 29th	396 363	759	1028 1025	26·1 17·6	43·7	5·0 3·06	8·06	9·6 8·3	17·9	—	—	—	—	1·06 0·9	1·96	·409 ·409	·818	·148 ·283	·431	·293 ·173	·466	—	—	—	1·29 0·7	2·99
16	,, 30th Nov. 4th	430 380	810	1030 1028	29·2 25·5	54·7	6·49 4·2	10·69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	,, 5th ,, 10th	370 340	710	1030 1027	26·3 20 6	46·9	6·49 3·92	10·41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	,, 11th ,, 18th	343 284	627	1030 1025	23·3 16·2	39·5	6·35 2·11	8·46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* D. and N. = Day and Night.

in the more acute phases of these conditions. It may be stated generally that it is better to keep this measurement under 50 grammes during treatment; it seems to show a higher degree of protoplasmic activity. As there is a tendency to lose the breakfast appetite for starches when this measurement is low, I have asked myself whether under these circumstances there is not an increased formation of glycogen from fat with fixation of oxygen. Bouchard[9] has recorded an actual increase in weight from this cause in the human subject and animals during a short period of time. Albumin, though frequently looked for in the urine, was not present in this case. With the exception of those occasions when there was either a small precipitate of calcium or an absence of precipitate in the filtrate after precipitation with ammonia, there was a copious precipitate with Fehling that took from 10 to 20 minutes to show itself, and though there was no fermentation with yeast Professor Zanoni of Milan found pentose with a trace of glucose.

It will be seen that two separate analyses have been made for the 12 hours preceding and following bed-time. The object of this is to compare the variations of the elimination of the urinary solids in the working and resting hours. The normal $\frac{\text{day}}{\text{night}}$ quotient, as it has been called, is between 2 and 3 for all the urinary solids. Very little work has been done on this subject. Leathes[10] showed that even in the case of uric acid (which is always found to have the lowest $\frac{\text{day}}{\text{night}}$ quotient of the urinary solids) there is a diminution of 50 per cent. in rate of excretion during the resting hours. Mr. Castellain analysed his own urine and that of a neurasthenic patient with whom he was travelling for some weeks. He very kindly showed me the figures; in his own case the average quotient for solids, urea and chlorides, was about 3; in that of the patient from 0·8 to 1·2. I have used the phrase decreased velocity of the metabolic traffic in order to express the condition showing a low $\frac{\text{day}}{\text{night}}$ quotient so as to be able to emphasise the fact that there is no evidence to convict one organ, or group of organs, more than another, but rather there is every indication of a general condition affecting all the tissues equally.

The results of the treatment analytically were as follows—Chlorides: the salt ration was controlled by using dried salt kept in a glass-stoppered bottle, which was weighed at intervals. Before the mixture of minerals was added to the ration the average output for six days was 4·79 grammes, which was calculated as the amount of the full ration—viz., the average added ration, together with the unestimated chlorides contained in the food. The output rose to 8·44 grammes the day after the re-mineralising mixture was taken. Observations were made from July 28th to Nov. 16th, the total dechlorination being estimated at 396 grammes. On Oct. 31st 15·09 grammes were eliminated, and on Nov. 8th 16 grammes, the patient was ingesting 1·5 grammes of added sodium chloride. These observations were made 89 and 97 days respectively after commencing treatment. During this time the output of the ordinary constituents was increased as follows: Urea, from 2·2 to 8·4 grammes in excess of the amount eliminated during the first period of six days, phosphoric acid up to 1·49 grammes, magnesium phosphate 0·443 gramme, and uric acid 0·307 gramme.

The increased velocity of the metabolic traffic as shown by the variations of the $\frac{\text{day}}{\text{night}}$ quotient was modified as follows: as regards the volume, it will be noted that as the specific gravity of the night urine was always lower than that of the day the quotient was not higher than 1·2; solids, 1·4; chlorides from 0·7 to 3·0; for the urea from 0·7 to 1·4; phosphoric acid being from 0·7 to 1·4.

With regard to the relationship of one constituent with another, it was found that $\frac{\text{uric acid}}{\text{phosphoric acid}}$ varied from 4·2 to 2·2 (normal 2·2); $\frac{\text{urea}}{\text{chlorides}}$ commenced at 1·2 and reached 4·4; it remained normal from period No. 10 to No. 15 (normal 2·9); $\frac{\text{urea}}{\text{phosphoric acid}}$ started at 3·5 and reached 14·5 (No. 5); from No. 6 to 15 it varied between 8 and 10 (normal 10); $\frac{\text{chlorides}}{\text{phosphoric acid}}$ varied from 2·2 to 7·5 (normal 4). As will be seen by the records, there was an improvement in all directions; the patient sweated with exercise though the weather was colder. It is to be regretted that illness made it impossible for me to continue the observations till the dechlorination was complete.

CASE B.—This is my own case, and is in continuation of the notes in THE LANCET.[11] The record can be divided into three divisions: (1) observations made during the periods Nos. 1 to 10 (during this division 2·0 grammes of calcium carbonate and magnesium chloride were taken morning and evening); (2) a time of unusually hard work during which the magnesium and calcium were discontinued (this is included in Nos. 11 and 14 in the records); and (3) from Nos. 15 to 20 there was exceptionally hard work, a similar quantity of vegetable salts as those administered in Case A were taken, with 0·2 gramme of iodine in organic combination.

Chlorides.—Two balances were made, the first at the end of two days and another similar to that in my first paper (alluded to above) at the end of ten days. In the case of the two-day balances during time included in the first division there was a total retention of only 31 grammes, in the second 5·9, and in the third 19 grammes. The amounts eliminated and recorded in the chloride balance table were made every ten days. The small totals on the side of elimination can be accounted for by retention during periods of unusual exertion. Thus the increased eliminations during Nos. 13 and 14 can be accounted for by three exhausting journeys to England in three weeks with bad cases. Again, Nos. 16, 17, and 19 were subsequent to unusual fatigue. Widal and Javal[12] have described a floating balance of from 1 to 3 pounds of water, which many normal subjects lose with a small dechlorination. Ambard[13] found in his own case that there was a loss of 15 grammes of chlorides with 1500 grammes of water before he attained chloride equilibrium. When these facts are taken into consideration, together with the inevitable small errors, it is practically certain that there was no considerable retention of chlorides similar to that recorded in the observations of my first paper. The object of leaving off the earthy salts and replacing them with the vegetable salts was to see whether the original condition could be reproduced. The preponderance of magnesium over calcium phosphate was maintained till the end of October, so that magnesium must have been stored in the tissues and slowly given up. Metabolic states associated with a wastage of earthy salts have been frequently described; it has even been held that a preponderance of earthy over the alkaline phosphates characterises certain hysterical and neurasthenic states. At the beginning of November I had a very severe "nervous" breakdown that rendered it necessary for me to remain in bed for four months and from which I have not yet recovered. The prominent changes in the analyses before the illness were: (1) the specific gravity was lower at night during the unfavourable periods; (2) there was a marked increase in the urea though the proteid ration was not increased; (3) there was an increase in the ration and output of chlorides of from 14 to 20 grammes; (4) an increase in the urinary acidity from an equivalent of from 4·2 to 6·9 grammes of oxalic acid; (5) a fall during the third period in earthy phosphates; and (6) a fall in magnesium phosphate from 0·704 gramme in the first period to 0·474 in the third. There was a fall in blood pressure from 100 to 75 millimetres of mercury about 14 days before the breakdown. During October I noted on many occasions that after working continuously from 5 to 6 in the morning till 12 o'clock I felt unusually fatigued; on taking a gramme of calcium carbonate the sensation of fatigue disappeared in a short time, and about 300 cubic centimetres of

---

[9] Bouchard: Traité de Pathologie Générale, tome iii., 1st Part, p. 972.

[10] Leathes: Discussion on the Physiology of the Purin Bodies, Brit. Med. Jour., April 22nd, 1908, p. 495.

[11] Higgins: Loc. cit.

[12] Widal and Javal: La Cure de Dechloruration, p. 27.

[13] Ambard et Beaujard: Hypertention Arterielle et Retention Chlorurée, Société de Biologie, 20 Fev., 1904, p. 317. Labbé and Morchoisne (Le Metabolisme de l'Eau et des Chlorures, Revue de Médecine, April, 1905, p. 250) obtained confirmatory results, and concluded that the abrupt variations in weight recorded in normal persons are due to retentions and discharges of water and chlorides.

TABLE III.—*Case B. Chloride Balance.*

Nos. for reference to periods.	Dates 1908 and 1909.	Total chlorides eliminated.	Chloride of sodium added to food.	Estimated error.*	Retention of chlorides.	Dechlorination lost.	Concentration-volume chlorides.		Balance.
							Day.	Night.	
				Period 1.					
1	Dec. 30th Jan. 8th	159	110	33	—	16 0	70	76	—
2	,, 9th ,, 18th	135·9	100	33	—	2·9	78	104	—
3	,, 19th ,, 30th	144·6	92	33	—	19·6	68	89	—
4	Feb. 9th ,, 18th	142·5	90	33	—	19·5	76	109	133·1 grms. eliminated.
5	,, 23rd March 3rd	159 4	105	33	—	21·4	86	100	—
6	,, 4th ,, 20th	164·1	128	33	—	3·1	76	99	—
7	,, 21st ,, 30th	164·6	122	33	—	9·6	85	109	—
8	April 2nd ,, 11th	154	120	33	—	1 00	80	88	—
9	,, 17th ,, 26th	158	107	33	—	18·00	70	81	—
10	,, 27th May 6th	135	90	33	—	12·0	65	85	—
				Period 2.					
11	,, 19th ,, 25th	125	100	23·1	—	1·9	63	71	—
12	,, 29th June 4th	127·9	79	23·1	—	24·7	60	81	61·2 grms. eliminated.
13	,, 11th ,, 20th	163·9	111	33	—	19·9	70	74	—
14	,, 21st ,, 29th	152·1	112	25·4	—	14·7	64	70	—
				Period 3.					
15	Aug. 1st ,, 10th	162·6	128	33	—	1·6	61	70	—
16	,, 11th ,, 20th	179·1	125	33	—	18·1	65	72	—
17	,, 24th ,, 30th	204·6	145	33	—	26·6	65	78	86·3 grms. eliminated.
18	,, 31st Sept. 9th	191·9	160	33	1·1	—	73	87	—
19	,, 10th ,, 18th	180	113·3	30·7	—	36 0	72	72	—
20	Oct. 13th ,, 21st	204	147·3	30·7	—	4 0	69	68	—

* See first paper (THE LANCET, April 18th, 1908) = Chlorides in food that were not estimated.

clear urine were excreted shortly afterwards. During the process of recovery my blood pressure has risen from 75 to 170 millimetres of mercury [14]; on omitting calcium the blood pressure has fallen to 115 millimetres of mercury. My weight rose from 10·5 to 16 stones in three months.

CASE C.—These analyses were made on two consecutive days in a case of a youth, aged 16 years, who was incapacitated in consequence of a low fatigue point. He had suffered for some five years from frequent attacks of asthma, influenza, and bronchitis; his blood pressure had fallen from 165 to 90 millimetres of mercury during the preceding year. This case was one of those obstinate cases of "nerves," constipation, &c., with a tendency to obesity.

The two cases that follow are examples of the effect of remineralisation in cases with a tendency to atony:—

CASE D.—A man, aged 59 years. Weight, 73 kilogrammes; height, 1·7 metres. He had suffered from neurasthenia, migraine, constipation, &c., for more than 25 years. During the previous year his blood pressure fell from 155 to 100 millimetres of mercury. The patient looked and felt extremely ill; he was pallid, restless, and irritable. The temperature was 96° F. and the blood pressure was 80. A complete examination of the blood was made by Dr. Spitta, who pronounced it to be normal. An interesting feature of this case was the association of headache and increased neurasthenic discomfort on the days when there was an increase in the urinary solids. The ration was approximately the same during the time the analyses were made.

This patient spent the winter in North Africa, carefully avoiding fatigue, exposure to cold, and constipation. I prescribed phosphoric acid (maximum dose of 100 minims daily) to be taken before exercise and to relieve fatigue sensations, two grammes of calcium carbonate and magnesium oxide, iodine, and eggs. In April there was a remarkable change in his condition, the blood pressure was 100 and his temperature normal; the improvement has been maintained for 18 months.

CASE E.—A woman, aged 59 years, who had been more or less under medical treatment for neurasthenia, constipation, nervous dyspepsia, &c., for about 30 years. There was an extreme state of weakness from inanition, the pulse was feeble, and the blood pressure was 105. She had felt herself obliged to reduce her ration to inconceivably low limits; she stated that she had existed for some time on a few zwieback and one or two cups of tea. She explained her dilemma by the statement that "she was unable to eat because of the intense discomfort; at the same time, she fully realised that if she did not eat she must die." A ration was given of about 200 grammes of red beefsteak, about a gramme of magnesium oxide and calcium carbonate, with iodine and vegetable salts. Eggs and milk caused great discomfort; the former were given in small quantities till toleration was established. Complete rest was prescribed for three weeks; after this the patient gradually increased her exercise till she recovered a remarkable degree of health and activity. In this case, on one or two occasions, she had nothing but the vegetable salts for two or three days at a time; the partial starvation seemed to improve her condition and increase her appetite for days afterwards. The analyses were made during a period of over three months.

CASE F.—A man, aged 57 years. Weight, 76 kilogrammes. The patient had had a rest-cure for neurasthenia in the previous October, and subsequently he went to Egypt and the Riviera. In the month of April following he felt worse than before undertaking the rest-cure. With a similar treatment as that of Case D this patient recovered sufficiently to be able to resume his work. Oxybutyric and diacetic acids were present in the urine as well as a trace of glucose.

CASE G.—The patient, aged 24 years, was the daughter of an American physician. There was a history of ill-defined illnesses, neurasthenia, and nervous dyspepsia for six years. She had been in the clinics of stomach specialists in the United States, Germany, and Switzerland.

CASE H.—This patient had recently had a rest-cure in London for neurasthenia. The patient was in a highly irritable and nervous state while the analyses were made.

The Condition of the Colon.

The following cases (A to G) correspond with those described above.

CASE A.—The abdominal wall was soft and bulged below the umbilicus. The colon was full from the cæcum to the sigmoid flexure; massage only induced a temporary contraction of the transverse fibres; there was no spasm. It was not till after injecting seven ounces of olive oil for three nights that the colon could be emptied by massage. After fitting this case with a Glénard's belt, it was found that the muscles recovered their tone in two or three weeks without exercises. No difficulty was found in keeping the colon empty with oil enemata.

CASE B.—During the second week in June, 1908, a considerable collection of intestinal sand caused constipation; it was removed in three or four days with oil enemata. The sand consisted of two parts of calcium and one of magnesium salts. During August and September recurring bouts of obstinate constipation were experienced, with membranous colitis and spasm of the transverse and descending colons. After the fatigue of a journey to England painful contractions of the colon were constantly present, and there was no action without oil enemata. The effect of the oil was remarkably complete and rapid; for instance, if an oil enema was given at 8 A.M., and some charcoal after breakfast at 8.30, the bowels would be open three or four times, and the charcoal would appear in the fæces before 12 A.M. After inspissated ox-gall was administered by the mouth oil

---

[14] Dr. J. N. F. Fergusson of Malvern, who made the observation for me, had some doubts as to the accuracy of the instrument used.

TABLE IV.—*Case B. Urinary Analysis.*

Number.	Dates.	Volume, D. and N.*	Total volume.	Specific gravity.	Solids, D. and N.	Total solids.	Chlorides, D. and N.	Total chlorides.	Urea, D. and N.	Total urea.	Ammonia, D. and N.	Total ammonia.	Uric acid, D. and N.	Total uric acid.	P_2O_5, D. and N.	Total P_2O_5.	Earthy phosphates, D. and N.	Total earthy phosphates.	Magnesium phosphate, D. and N.	Total magnesium phosphate.	Calcium phosphate, D. and N.	Total calcium phosphate.	Calcium ppt. by NH_3.	Calcium NH_3 filtrate, D. and N.	Total calcium in NH_3 filtrate.	Acidity in grms. of oxalic acid, D. and N.	Total acidity.
1	Sept. 10th Oct. 9th	592 501	1093	1025 1026	33·8 28·7	62·5	7·63 5·06	12·69	11·9 10·9	22·8	—	—	·409 ·301	·710	1·66 1·67	3·33	·328 ·402	·73	·21 ·162	·362	·118 ·24	·358	—	—	—	2·02 2·0	4·02
2	Nov. 4th ,, 13th	704 355	1059	1025 1025	40·4 31·6	72·0	11·7 7·52	19·22	12·3 10·3	22·6	—	—	·383 ·363	·746	1·78 1·4	3·18	·426 ·397	·823	·209 ·131	·34	·217 ·266	·483	—	—	—	1·87 1·72	3·69
3	,, 14th ,, 19th	562 482	1044	1026 1026	42·4 29·7	72·1	12 3 7·1	19·4	12·8 9·4	22·2	—	—	·557 ·366	·923	2·0 1·5	3·5	·526 ·304	·83	·236 ·153	·389	·29 ·151	·441	—	—	—	2·19 1·4	3·59
	,, 29th Dec. 8th	707 570	1277	1027 1027	44·2 33·5	77·7	12·47 7·03	19·5	15·1 12·7	27·8	—	—	·527 ·396	·923	1·88 1·62	3·5	·458 ·366	·824	·271 ·195	·466	·187 ·171	·358	—	—	—	2·26 1·85	4·11
5	,, 9th ,, 18th	752 507	1259	1027 1028	45·1 31·1	76·2	12·16 6·39	18·55	15·5 11·2	26 7	—	—	·567 ·349	·916	1 98 1·72	3·7	·544 ·417	·961	·33 ·21	·54	·214 ·207	·421	—	—	—	2·25 1·91	4·16
6	,, 19th ,, 29th	784 494	1278	1026 1027	46·9 27·3	74·2	12·2 5·6	17·8	12·6 8·7	21·3	·682 ·461	1·143	·602 ·337	·939	1·74 1·25	2·99	·556 ·382	·938	·383 ·21	·593	·173 ·172	·345	—	—	—	1·54 1·49	3·03
7	,, 30th Jan. 8th	716 466	1182	1028 1029	44·6 30·4	75·0	10·15 5·75	15·9	12·2 8·9	21·1	·756 ·544	1·2	·52 ·324	·844	2·04 1·59	3·63	·63 ·489	1·119	·418 ·318	·736	·212 ·171	·333	—	—	—	2·15 1·9	4·05
8	,, 9th ,, 18th	755 469	1224	1028 1027	46·2 27·1	73·3	9·35 4·24	13·59	12·9 8·8	21·7	·736 ·496	1·232	·641 ·328	·969	1·96 1·41	3·37	·554 ·358	·912	·372 ·192	·564	·182 ·166	·348	—	—	—	1·71 1·53	3·24
9	,, 19th ,, 30th	711 392	1103	1029 1029	47·2 24·8	72 0	10·22 4·24	14·46	13·2 8·2	21·4	·72 ·353	1·073	·537 ·32	·857	2·17 1·29	3·46	·551 ·406	·957	·356 ·236	·592	·195 ·16	·355	—	—	—	2·06 1·55	3·61
10	Feb. 9th ,, 18th	776 495	1271	1026 1025	46·1 24·1	68·8	8·73 4·5	13·23	11·9 8·3	20·2	·667 ·543	1·21	·584 ·419	·903	1·89 1·31	3·2	·498 ·415	·913	·402 ·34	·742	·096 ·078	·174	—	—	—	1·7 1·41	3·11
11	,, 23rd March 3rd	989 514	1503	1023 1025	46·3 28·1	74·4	10·7 5·24	15·94	14·0 8·1	22·1	·755 ·427	1·182	·497 ·294	·791	2·16 1·38	3·54	·61 ·412	1·022	·448 ·319	·767	·162 ·093	·255	—	—	—	1·61 1·25	2 86
12	,, 11th ,, 20th	902 555	1457	1026 1025	47·3 28·0	75·3	10·86 5·55	16·41	13·4 8·9	22·3	·717 ·412	1·129	·586 ·385	·971	2·04 1·24	3·28	·504 ·371	·875	·363 ·282	·645	·141 ·0:9	·23	—	—	—	1·66 1·45	3·11
13	,, 21st ,, 30th	886 631	1517	1023 1024	44·9 33·1	78·0	10·54 5·92	16·46	13·2 10·6	23·8	·793 ·559	1·352	·555 ·373	·928	2·05 1·34	3·39	·579 ·542	1·121	·435 ·35	·785	·131 ·094	·215	·254 ·115	·237 ·135	·372	1·63 1·45	3·03
14	April 2nd ,, 11th	817 499	1316	1025 1026	44·1 29·1	73·2	9·91 5·49	15·4	12·6 9·1	21·7	·66 ·435	1·095	·505 ·342	·847	2·08 1·45	3·53	·566 ·473	1·039	·437 ·353	·79	·131 ·138	·269	·128 ·091	·228 ·127	·355	2·04 2·01	4·05
15	,, 17th ,, 26th	771 461	1232	1026 1028	45·0 29·3	74·3	10·67 5·16	15·83	12·4 8·6	21·0	·743 ·462	1·205	·361 ·303	·664	1·77 1·35	3·12	·523 ·398	·921	·382 ·25	·632	·15 ·147	·297	·142 ·1	·212 ·136	·348	2·51 2·49	5·00
16	,, 27th May 6th	652 406	1058	1030 1031	44·1 28·5	72·6	8·72 4·87	13·59	12·8 8·6	21·4	·52 ·29	·81	·627 ·364	·991	1·88 1·48	3·36	·57 ·45	1·02	·339 ·228	·567	·231 ·222	·453	·183 ·142	·217 ·091	·308	2·71 2·35	5·05
17	,, 19th ,, 25th	690 500	1190	1027 1029	44·3 31·4	75·7	10·8 7·02	17·82	12·4 9·8	22·2	·734 ·581	1·315	·632 ·41	1·042	1·67 1·47	3·14	·531 ·473	1·004	·4 ·295	695	·139 ·16	·199	·168 ·101	·27 ·193	·463	2·34 2·2	4·54
18	,, 29th June 4th	720 514	1234	1027 1024	43·9 28·2	72·1	11·8 6·49	18·29	11·4 10·2	21·6	·669 ·461	1·13	·571 ·365	·934	1·79 1·49	3 28	·588 ·455	1·043	·39 ·304	·694	·167 ·181	·328	·24 ·113	·235 ·177	·412	2·5 2·31	4·81
19	,, 11th ,, 20th	783 506	1289	1024 1024	38·5 27·3	65·8	10·5 5·89	16·39	14·1 10·9	25·0	·734 ·52	1·254	·531 ·296	·827	1·79 1·6	3·39	·571 ·424	·995	·42 ·301	·721	·175 ·121	·296	·207 ·153	·193 ·125	·318	2·95 2·59	5·54
20	,, 21st ,, 29th	800 610	1410	1025 1021	43·7 32 0	75·7	10·15 7·6	17·75	14·7 12·8	27·5	·798 ·76	1·558	·546 ·395	·941	1·78 1·69	3·47	·605 ·464	1·079	·392 318	·71	·209 ·147	·356	·252 ·171	·418 ·426	·844	2·55 2·4	4·95
21	August 1st ,, 10th	565 578	1143	1029 1030	35·9 32·2	68·1	8·88 7·38	16·26	10·9 10·1	21·0	—	—	·494 ·422	·916	1·42 1·5	2·92	·415 ·345	·76	·21 ·17	·38	·219 ·181	·4	·219 ·21	·21 ·187	·397	2·61 2·33	4·94
22	,, 11th ,, 20th	651 545	1196	1030 1028	45·8 34·0	79·8	9·62 8·29	17·91	16·4 13·9	30·3	·344 ·238	·582	·538 ·392	·93	1·77 1·15	2·93	·465 ·378	·843	·282 ·239	·521	·182 ·148	·33	·187 ·203	·22 ·122	·342	2·33 1·88	4·21
23	,, 21st ,, 30th	778 750	1528	1028 1023	50·1 37·4	87·5	11·47 8·99	20·46	15·8 13·9	29 7	·317 ·272	·589	·548 ·382	·93	2·04 1·57	3·61	·487 ·421	·908	·356 ·282	·638	·18 ·179	·359	·134 ·152	·257 ·224	·481	2·5 1·63	4·13
24	,, 31st Sept. 9th	748 667	1415	1025 1020	40·6 29·4	70·0	11·13 8·05	19·18	16·2 14·6	30 8	·214 ·28	·494	·544 ·421	·965	1·71 1·37	3·08	·39 ·328	718	·209 ·180	·389	·18 ·148	·328	·126 ·123	·185 ·201	·385	2·33 1·81	4·14
25	,, 10th ,, 18th	847 589	1436	1027 1027	50·7 34·9	85·6	11·74 8·15	19·89	19·5 18·1	37·6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2·64 1·53	4·17
26	Oct. 11th ,, 21st	717 608	1325	1027 1025	37·6 33·3	70·9	10·33 8·89	19·22	15·0 14·0	29·0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3·09 2·89	6·08

*D. and N. = Day and Night.

TABLE V.—*Urinary Analyses of Cases C, D, E, F, G, and H.*

Case.	Volume, D. and N*.	Total volume.	Specific gravity, D. and N.	Solids, D. and N.	Total solids.	Chlorides, D. and N.	Total chlorides.	Urea, D. and N.	Total urea.	Ammonia, D. and N.	Total ammonia.	Uric acid, D. and N.	Total uric acid.	P_2O_5, D. and N.	Total P_2O_5.	Earthy phosphates, D. and N.	Total earthy phosphates.	Magnesium phosphate, D. and N.	Total magnesium phosphate.	Calcium phosphate, D. and N.	Total calcium phosphate.	Calcium ppt. by NH.	Calcium in NH_3 filtrate, D. and N.	Total calcium in filtrate.	Acidity in grms. of oxalic acid, D and N.	Total acidity.
C.	270 250	520	1028 1029	18·7 17·5	36·2	4·42 3·34	7·76	5·9 5·6	11·5	·238 ·27	·508	·36 ·373	·733	1·98 1·27	3·25	·229 ·218	·447	·148 ·05	·198	·081 ·148	·229	·267	·303 ·14	·443	1·43 2·5	3·93
	430 230	660	1028 1029	28·9 16·6	45·5	8·84 4·5	13·34	8·1 4·7	12·8	·479 ·234	·713	·495 ·332	·827	1·16 0·97	2·13	·225 ·126	·351	·168 ·057	·225	·057 ·169	·226	·223	·2 ·115	·315	1·2 1·24	2·44
D.	650 530	1180	1018 1020	24·1 22·0	46·1	3·9 3·18	7·08	3·4 2·3	5·7	—	—	·313 ·249	·562	1·23 1·06	2·29	·371 ·325	·696	·065 ·16	·225	·306 ·265	·571	—	—	—	1·04 1·27	2·31
	680 710	1390	1020 1017	28·2 24·8	53·0	8·43 2·69	11·12	13·2 10·6	23·8	—	—	·371 ·327	·698	1·76 1·27	3·03	·306 ·39	·696	·085 ·071	·156	·221 ·319	·54	—	—	—	2·17 1·27	3·44
	500 650	1150	1027 1016	30·7 21·4	52·1	4·2 3·12	7·32	10·2 10·9	21·1	—	—	·431 ·276	·707	1·4 1·13	2·57	·525 ·292	·817	·2 ·097	·297	·325 ·195	·52	—	—	—	2·3 1·82	4·12
	740 1180	1920	1020 1010	32·6 23·6	56·2	6·21 4·95	11·16	15·5 20·3	35·8	—	—	·432 ·236	·668	2·11 2·11	4·22	·407 ·472	·879	·092 ·177	·269	·314 ·295	·609	—	—	—	2·3 1·06	3·36
	920 630	1550	1015 1025	28·3 19·4	47·7	4·78 4·53	9·31	21·2 13·6	34·8	—	—	·394 ·328	·722	1·3 1·07	2·37	·368 ·283	·651	·092 ·063	·155	·276 ·22	·496	—	—	—	1·74 1·13	2·87
	1150 700	1850	1015 1020	35·3 29·0	64·3	4·6 5·74	10·34	6·2 14·9	21·1	—	—	·485 ·332	·817	2·07 1 13	3·2	·46 ·49	·95	·115 ·07	·185	·345 ·42	·765	—	—	—	1·72 1·26	2·98
	1040 830	1870	1015 1014	32·0 23·8	55·8	13·1 3·81	16·91	11·5 15·8	27·3	—	—	·422 ·256	·678	3·95 1·49	5·44	·624 ·332	·956	·156 ·124	·28	·468 ·208	·676	—	—		1·87 1·32	3·19
E.	350 200	550	1022 1027	16·4 12·3	28·7	4·62 3·04	7·66	6·43 5·06	11·49	·166 ·17	·336	·272 ·142	·414	·49 ·93	1·42	·116 ·082	·198	·024 ·115	·039	·092 ·067	·159	·217	—	·136	0·84 0·28	1·12
	310 200	510	1020 1028	12·8 12·9	25·7	3·75 1·24	4·99	9·8 5·12	14·9	—	—	·14 ·191	·331	·4 ·89	1·29	·1 ·22	·32	·03 ·06	·09	·07 ·16	·23	—	·306 ·057	·363	1·3 0 93	2·23
	360 500	860	1020 1015	14·9 15·4	30·3	3·24 3·9	7·14	7·4 8·5	15·9	—	—	·205 ·303	·508	0·63 0·87	1·5	·126 ·325	·451	·188 ·224	·412	— ·101	—	·192	042 238	·28	— ·05	0·5
	700 630	1330	1017 1014	24·5 18·8	43·3	7·7 5·16	12·86	11·9 10·7	22·6	—	—	·295 ·281	·576	0·98 0·79	1·77	·413 ·324	·737	·136 ·157	·293	·277 ·167	·444	—	—	—	1·58 0·71	2·29
	560 580	1140	1015 1017	17·2 20·3	37·5	4·76 5·8	10·56	9·46 9·55	19·0	—	—	·242 ·251	·493	0·56 0 53	1·09	·313 ·327	·64	·201 ·153	·354	·112 ·194	·306	—	·219 ·17	·389	1·2 0·26	1·46
	730 630	1360	1023 1020	36·2 26·2	62·4	7·4 6·42	13·82	10·7 12·6	23·3	·868 ·578	1·446	·519 ·607	1·126	1·6 1·28	2·88	·401 ·299	·7	·189 ·198	·387	·212 ·102	·314	·576	·153 ·089	·242	3·35 2·89	6·24
F.	770 650	1420	1020 1018	31·0 24·1	55·1	6·31 5·46	11·77	10·8 8·7	19·5	·44 ·142	·582	·324 ·338	·662	1·25 0·97	2·22	·431 ·352	·783	·25 ·149	·399	·181 ·203	·384	·203	·052 ·145	·197	2·1 2·1	4·11
G.	420 410	830	1024 1020	22·0 17·0	39·0	4·7 4·18	8·88	8·4 7·3	15·7	·612 ·569	1·181	·143 ·196	·339	1·92 1·22	3·14	·235 ·188	·423	·134 ·102	·236	·101 ·086	·187	·087	·341 ·235	·596	1·81 1·64	3·45
H.	500 480	980	1026 1026	29·3 28·1	57·4	7·4 6·72	14·12	12·0 10·3	22·3	1·224 1·09	2·314	·358 ·474	·832	1·3 1·16	2·46	·42 ·316	·736	·227 ·189	·416	·193 ·127	·32	·52	·053 ·113	·166	2·04 1·34	3·38
	670 480	1150	1024 1025	35·3 27·2	62·5	7·1 6·72	13·82	14·3 13·2	27·5	·82 ·531	1·351	·58 ·372	·952	1·63 1·15	2·78	·536 ·504	1·04	·234 ·252	·486	·302 ·152	·454	·578	·131 ·094	·225	2·01 3 07	5·08

* D. and N. = Day and Night.

was retained all night in a normal manner without causing diarrhœa. No mucus had been found in the fæces from November till March when ox-gall was administered; in the course of a week a quantity of grape-skin membranes and mucus were discharged. The mucus, &c., was measured daily by washing the fæces through a sieve; a progressive diminution was found in the course of from six to eight weeks with a great improvement in health.

Roger[15] demonstrated that bile exercises a solvent action on the colic mucus which has the effect of preventing the adhesion of coagulated mucus that occurs in membranous colitis. He was able to produce adherent and coagulated mucus in animals by irritating the bowel and diverting the current of bile. Hence the alleged successful treatment of membranous colitis by administering ox-gall by rectal injection and by the mouth. The former device may cause considerable pain and irritation; it is said, however, to be more efficacious than the latter.

CASE E.—The conspicuous feature of this case was the extreme degree of atony both of the abdominal muscles and the colon. The bowels had not been opened without aperients for 25 years. By using a quilted shot-bag so as to cause an even distribution of weight over the abdomen while the patient was awake and afterwards providing her with a Glénard's belt I was astonished to find that the abdominal muscles recovered their tone and finally that the colon contracted when it was massaged. No difficulty was found in obtaining a daily action of the bowels with small oil enemata administered at night.

CASE G.—There were enteroptosis, slight gastroptosis, a contracted transverse and descending colon, constipation, and a fæcal tumour of the size of a large orange in the splenic angle of the colon which had been notified by a physician during the previous year. Appropriate treatment combined with wearing a belt resulted in an extraordinary improvement in this case. Her mother wrote that her condition had been thought to be hopeless. I append notes here of some interesting cases.

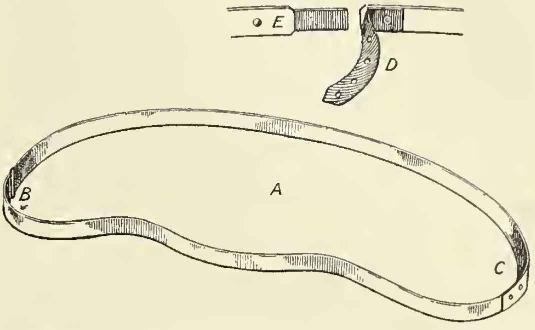
CASE 1.—A man, aged 26 years, who had been treated for some six or seven years for neurasthenia, constipation, &c. The patient was emaciated, with bent shoulders and a sallow, unhealthy complexion. Crepitation and obscure resistance were found over the splenic angle of the colon. The descending colon was contracted to the size of a lead pencil. A Glénard's belt removed the stooping and increased the strength of the abdominal muscles. I saw this patient later, after clearing out a quantity of retained fæces with oil enemata; there was a sharp attack of localised peritonitis over the splenic angle of the colon. Two days later there was a hardness felt under the inner third of Poupart's ligament. On the following day there was a marked improvement that was associated with a disappearance of the swelling under Poupart's ligament. There was a history of a serious illness while the patient was at school caused by a lumbar abscess presenting in the groin. I feel convinced that there was an old sinus connected with the colon in this case.

CASE 2.—A woman, aged 33 years, with a history of neurasthenia, a low fatigue point, headaches, and frequent illnesses for some ten years. The bowels acted irregularly. There was a spasm of the descending colon with an extreme condition of gastroptosis, the stomach falling below the umbilicus; it could be easily replaced by firm pressure over the pubes. Glénard's belt was ineffective in this case; the patient devised a rigid iron support worn over a low corset that was perfectly satisfactory (see Fig. 1). There was a great improvement in health, the chest expanded 3 or 4 inches, and the characteristic stooping was removed. One of the advantages of the rigid support was that it did not exercise any pressure over the hips.

CASE 3.—A man, aged 36 years, had been vaguely ill with neurasthenia, &c., for more than ten years; he had had a bad breakdown two years previously and had not had a natural opening of the bowels for four or five years. He was in the habit of taking cascara every four days. There was contraction of the transverse and descending colons, the cæcum and ascending colon being empty. It was clear, after using oil enemata and charcoal, that fæces collected in the splenic angle of the colon.

CASE 4.—A woman, aged 35 years, had complained of vague disorders, tiredness, headaches, indigestion, &c., for some years, for which she had not been able to obtain relief. The bowels were said to be regular. On giving charcoal the fæces were found to be black for five days, though nothing but the usual contraction could be felt; oil enemata cleared out a quantity of fæces, and in the course of a week it was found that the charcoal passed through normally in 24 hours.

FIG. 1.

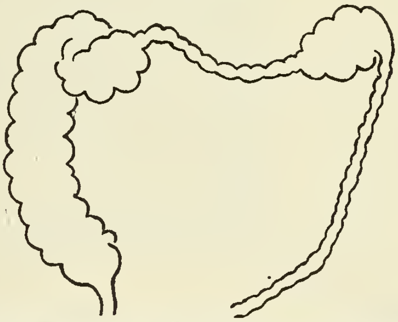


Rigid steel band worn over a low corset or belt for gastroptosis. A, Convexity to be varied with the needs of the individual. B, Hinge. C, Fastening, that is shown above. E, Tongue of metal which fits into a groove behind D, a strap. (Made by Montague, Bond-street, London, W.)

Glénard first described these conditions[16] (see Fig. 2). If his experience of 25 years could be summed up in a few words it would be that if these patients are properly fed, provided with a belt, and purged, they will recover.

Under normal conditions the space between the abdominal wall and the lumbar curve is insignificant; the elastic muscles, aided by the great omentum, amply suffice to maintain the viscera well above the ledge provided by the lumbar curve. So soon, however, as the muscles weaken there is traction on the diaphragm which can only be relieved by flexion of the trunk. Riva-Rocci has shown that even slight irritation of the diaphragm alone is sufficient to cause the most uncomfortable neurasthenic sensations. The relief of these sensations by flexion increases the visceroptosis by depriving the viscera of the support of the lumbar curve, thus throwing still more weight on the abdominal muscles. A most striking demonstration of the unsuspected force exercised by the weight of the viscera can be obtained by standing behind a patient and attempting to replace them by pressure with both hands immediately above the pubes. This experiment suffices to make one realise the absolute necessity for mechanical support.

FIG. 2.



Chronic spasm of the colon (after Glénard). Showing the contracted transverse and descending colons and the splenic pouch referred to in the text.

The belt secures (1) pressure over the pubes which maintains the viscera above the lumbar curve, relieves the strain on the back muscles and the mechanical interference with respiration, both resulting from moving the centre of gravity forwards in stooping to relieve the traction on the diaphragm; (2) the low blood pressure from splanchnic stasis is relieved by its pressure; (3) the muscles recover their tone when relieved from the overwhelming weight of the viscera; and (4) the traction on the hepatic and splenic attachments of the colon is relieved. This traction often causes most persistent pain and inconvenience.

---

[15] An account of this work with records of cases is found in Pathogénie et Traitement de la Colite Muco-membraneuse by Nepper. Maloine, Paris, 1906.

[16] An admirable account of these conditions is to be found in the works of Monteuis—"Les Deséquilibres du Ventre et Abdominales Méconnues," Baillière et Fils, Paris.

It is important to bear in mind the value of saline purgatives in these cases; Glénard states that he has seen nothing but good effects by their use "for indefinite periods." Provided that one or two satisfactory evacuations are obtained in the morning there can be no question that salines are of the greatest value in these conditions. The effects produced cannot be accounted for by their purgative action alone; in my own case there was a most striking and decided improvement in the sensations of fatigue, &c.

I have no hesitation in attributing these conditions to the effects of the cumulative action of the toxins produced by cold, fatigue, and auto-intoxication. The conspicuous analytical features are: (1) diminished velocity of the traffic of the urinary ingredients shown by the $\frac{\text{day}}{\text{night}}$ quotient; (2) urea and other constituents are insufficient, that is to say, they do not correspond to the ration; (3) there may be evidence of chlorine storage; and (4) there are variations, (*a*) in the proportions of Mg and Ca phosphates, and (*b*) the earthy and alkaline phosphates. The underlying idea is that the attacks of the toxins on the protoplasm are permanently expressed *inter alia* by intracellular deficiencies in phosphorus and the earthy salts. The faulty function of this deficient protoplasm is most evident in the low fatigue point and a tendency to produce fatty acids. If it is true that a low loss of weight per hour at night indicates a formation of glycogen from fat, and further that this result can be determined by administering calcium, this measurement will form a valuable indicator of a type of cellular activity or of a "state of matter." Obesity from this point of view would be the result of a diminished power of transforming fat into glycogen during the resting hours associated with an excessive carbon ration. This excessive ration with fat storage occurs in hybernating animals in the autumn, while toxæmia from cold is increasing. If one of the differences between the end of a day's work and the beginning is that more glycogen is available for muscular work after the resting hours, there would be a plausible explanation of the dietetic habits of the populations that are accustomed to do several hours' work with a very small breakfast. Whatever explanation is adopted, the fact remains that cases such as I have described are undoubtedly better when their starch ration is limited to the amount they can poltophagise. Treatment consists in the presentation of the deficient protoplasmic elements as a daily ration while the patient is placed under as perfect conditions as possible. It is essential to realise that it is necessary for the patient to have a balance of energy available for repair at the end of the day. Mental or physical work carried up to, or worst still beyond, the fatigue point, exposure to cold, the ingestion of insufficient or unsuitable food, a sufficient degree of intestinal auto-intoxication, would either of them suffice to postpone recovery indefinitely, at the same time perpetuating or aggravating their analytical peculiarities.

When it is remembered what striking effects are produced on the type of cellular activity by the modification of the concentration of saline solutions one asks oneself whether spontaneous dechlorinations such as I have described in my first paper would not suffice to produce the nuclear anarchy of malignant disease when local conditions are favourable.

Cases such as I have described must be very common—they all occurred in the course of a year in a small general practice.

The breakdown in my own case was clearly the result of overwork and anxiety during and after the re-mineralising process. I should like to be able to prove that it was mainly due to interference with the $\frac{\text{CaMg}}{\text{NaK}}$ balance first by having an increased ration of Ca and Mg for six months and afterwards the large ration of vegetable salts for the four months immediately preceding the illness. The policy of concentrating treatment and attention on the mental symptoms in these cases produces a condition of either futile exasperation or despair—states of mind which are equally prejudicial to recovery. I am convinced that it is essential that these patients should be made to understand that they are not suffering from "nerves" but from a serious condition of vicious metabolism that demands their intelligent coöperation for a long period of time, and that unless this is done they will not recover. I have seen cases where relations, friends and medical attendants appear to combine to produce conditions that render recovery absolutely impossible.

The question whether or not the absence of sufficient exogenous uric acid in the urine shows that it is being retained in the body has some light thrown on it in these conditions. In Case A, when there was an intake of 200 grammes of cooked meat (No. 1), there were only 14 grammes of urea and 0·53 gramme of uric acid, whereas in No. 14, with 180 grammes, there were respectively 18 and 0·65 gramme.

In Case B a striking association is noticed in the increased velocity of the traffic of uric acid and increased proportion of magnesium over calcium phosphate in the urine. I had the advantage of a consultation in Vienna with Professor von Noorden about a case that presented analytical peculiarities similar to my own. Uric acid retention was diagnosed and treated in the usual way. This patient had come over at the end of January from Cape Colony—that is to say, from midsummer to midwinter. During the time that the analyses were being made he was taking long fatiguing walks of over three hours in bitterly cold weather. I am unable to say whether this proceeding favours uric acid retention, but there can be no question that in such a case it diminishes the velocity of the traffic of the urinary solids.

To recapitulate, the first step in the diagnosis of these cases is to find whether or not there is coprostasis by using charcoal tablets (six morning and evening), whether there is mucous colitis present by means of ox-gall for at least a week, carefully examining the colon and fæces, and, finally, supplying a belt when necessary. The next step is to give a weighed ration and make analyses for at least four days. To repeat the analyses for a similar period with the same ration combined with the re-mineralising process.

The most important application of these principles is in the correction of metabolic errors at their inception. I well remember when consulting Dr. Haig some 12 years ago that, in addition to my "gouty" symptoms, I had noticed that I was passing more urine during the night than in the day time. I was unfortunate enough to treat this condition for some years by means of phosphorus starvation and excessive exercise. Harmful as I am convinced that Haig's diet wrongly applied may be, it is, comparatively speaking, harmless when it is compared to the careless application of the principle of Chittenden's economical nutrition. Two points require explanation and attention in Chittenden's experiments: first, that the nitrogen ration varied between 0·09 gramme per kilogramme in his own case and 0·17 gramme per kilogramme in the case of W. L. Anderson. The second point is the enormous percentage of catastrophes that resulted from his experiments: (1) physically unfit at the end of 20 days of economical nutrition; (2) cardiac irritability in 47 days; (3) acute tuberculosis in 26 days; and (4) acute melancholia in 106 days. I know that physiologists tell us that they have nothing to do with pathological conditions, yet the fact that these conditions arose in a body of men who are above the average when compared with a similar number in the civil population necessitates further explanation before these principles are proposed for extensive application. The art of adaptation necessarily deals with all the factors of environment; the ration therefore requires to be adjusted skilfully and scientifically not only to climate and work, but to the "state of matter" of the individual.

It is undeniable that diets such as those of Haig and Chittenden have their uses under suitable circumstances, but unless these conditions are defined they are often used for unsuitable cases. Prolonged personal experience has convinced me that it is possible to inflict irreparable damage to the tissues by persisting in the use of either unsuitable or inadequate dietaries. Above all, it is necessary to remember that their evil effects may take years to declare themselves, without providing any recognisable subjective indications during the process.

Bio-technics, or the art of adjusting individuals with their environment, consists in those modifications of the ration, of work, rest, climate, &c., necessary to attain and maintain the optimum chemical and physical equilibrium. There would appear to be a danger of forgetting that this art, which has been practised empirically with varying success since the time of Hippocrates, even exists. The recent revolution, however, in our conceptions of the dynamics of living matter, combined with the numerical records of the physical changes associated with the successful practice of our art, cannot fail to provide us with the impetus necessary to attain scientific control of life through the harmonious adjustment of living tissues to their environment.

Pallanza, Italy.

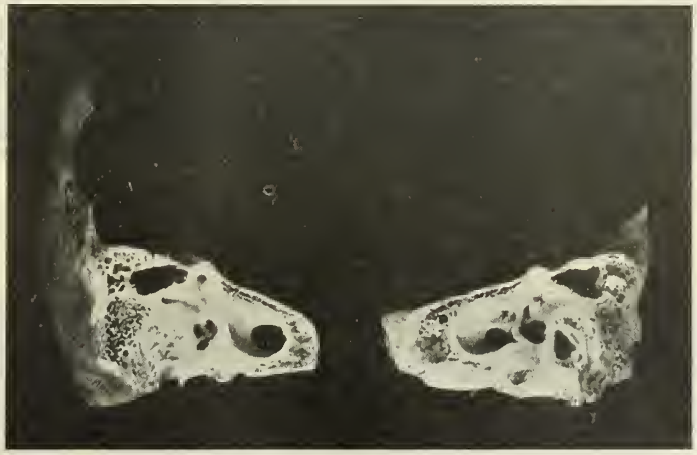
THE INFANTILE TYPES OF THE TEMPORAL BONE AND THEIR SURGICAL IMPORTANCE.

By ARTHUR H. CHEATLE, F.R.C.S. Eng.,
LECTURER ON AURAL SURGERY AT, AND AURAL SURGEON TO, KING'S COLLEGE HOSPITAL, LONDON.

The Infantile Types.

I apply the term "infantile" to those bones which retain throughout life the characteristics of the outer antral wall and mastoid mass as seen in infancy. (Fig. 1.) On making a lateral vertical section through the antrum and mastoid mass in infancy it will be seen that the outer wall of the antrum is composed of two layers—a thin outer layer of compact bone, and an inner layer of fine cells. These cells are formed before birth; therefore I call them the "fœtal cells" to distinguish them from any which may form in later life, and from which they can be differentiated always by their fineness and inward direction. The mastoid mass is, as a rule, *diploëtic*, but it may be formed of *dense* bone. If the mass is diploëtic, a thin layer of compact bone, which can be easily demonstrated by scraping away the diploë, separates it from the antral cavity. There are, therefore, two types in infancy: (1) one in which the mastoid mass is diploëtic; and (2) one in which the mastoid mass is dense. Each type may persist all through life, but of course on an exaggerated scale.

Fig. 1.



Right temporal bone of an infant.

1. *The diploëtic form in the adult.*—In this type the thin outer compact layer of the outer antral wall has increased in thickness from the periosteal side and is of extreme density; the inner layer of "fœtal cells" is still seen; the mastoid mass is entirely diploëtic, and the separating layer between the diploë and the cavity of the antrum is much increased in thickness. (Fig. 2.) Whenever the mastoid process is entirely diploëtic the outer aural wall is always formed of dense bone. This type is seen in about 20 per cent. of all bones, and it can be seen at all ages; it is as common in females as in males, and I think it is always symmetrical, but on this point I wish to make further investigations.

2. *The dense form in the adult.*—In this type the dense mastoid mass persists all through life, but the condition of the outer antral wall remains the same as in the diploëtic type, the outer layer being very much increased in thickness and of extreme density, while the inner layer of "fœtal cells" is still seen. (Fig. 3.) This form is only seen in about 1 or 2 per cent. of all bones.

Both types are remarkable in the absence or scarcity of cells in other parts of the bone than the mastoid region. There is no external sign to show when these types are present, and the statement made by Kanasugi in his book "Contributions to the Topographical Surgical Anatomy of the Mastoid Region" that "in general small short processes are diploëtic and large ones pneumatic" cannot be relied on. The outer antral wall is often of great thickness as well as density in these infantile types. The greatest depth of the antrum from the surface is seen in them: it may measure three-quarters of an inch (19 mm.). A forward lateral sinus is usual and is found much more frequently and to a much greater extent than in the cellular types. The sinus often comes well forward below the level of the antrum and may reach the posterior meatal wall, or it may even dip in between the cavity of the antrum and the surface. The antrum may be large or small; if large, the posterior wall may be of extreme thinness and translucency, and may have the cerebellum or lateral sinus, or both, lying against it. In some specimens the posterior antral wall is pushed in by the cerebellum, thus narrowing the antral cavity from before backwards.

As in all types the antrum may be highly placed, or the middle fossa may dip down either between the antral cavity and the surface, or external to the superior semicircular canal, causing a low flat antrum. In one bone the descending part of the facial nerve curves inwards before emerging at the stylo-mastoid foramen.

I wish to say that a dense outer antral wall does not always mean that cells are not present in the mastoid. For the outer antral wall may retain this infantile form and a few cells may be present along the squamo-mastoid suture, thus closely resembling the pure infantile type; or cells may be well formed in the upper part of the mastoid or throughout the process; or a narrow track may pass through the upper mastoid to large cells in the lower or projecting part of the process. A rare condition is for a dense outer antral wall to be associated with a narrow tortuous tract of cells with very dense walls running through the mastoid. I may also say that if cells, apart from the "fœtal cell," are present in the outer antral wall they are also present to a greater or less degree in the mastoid.

Surgical Importance.

The surgical importance is the same in both forms and may be considered under two heads: (1) Influence in cases of suppuration in the antrum; and (2) influence on operations for suppuration in the antrum and its sequelæ.

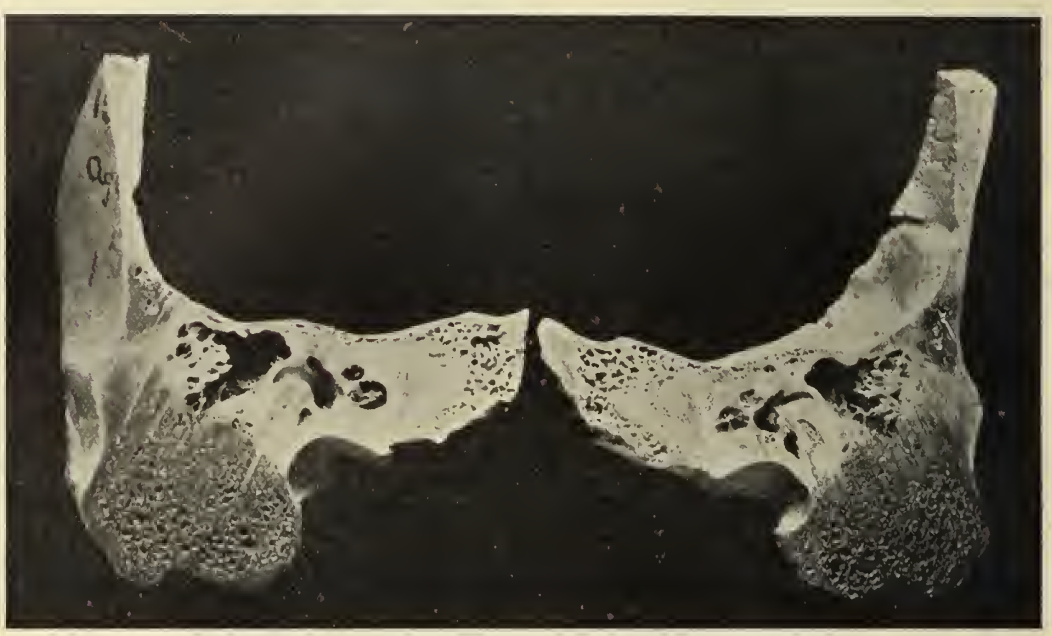
1. *Influence on suppuration.*—It is obvious that an acute suppuration in the antrum may exist without any signs behind the ear, as it is impossible for pus to penetrate the outer antral wall or reach the mastoid process, and that there is a great liability for further serious extension, especially to the posterior fossa if the posterior antral wall is very thin.

If intracranial or labyrinthine infection does not occur in acute suppuration there is a great chance of the suppuration becoming chronic; the lining membrane of the antrum undergoes destruction and degeneration, or some local destruction of part of the bony walls or ossicles takes place and causes a chronic discharge from the middle ear tract.

The importance of the "fœtal cells" lining the outer antral wall in connexion with suppuration has never received sufficient attention, due probably to the fact that they are removed during operation without being examined carefully. They must certainly cause deficient drainage and be liable to caries; partial destruction of them can be seen in some bones in which chronic suppuration has occurred.

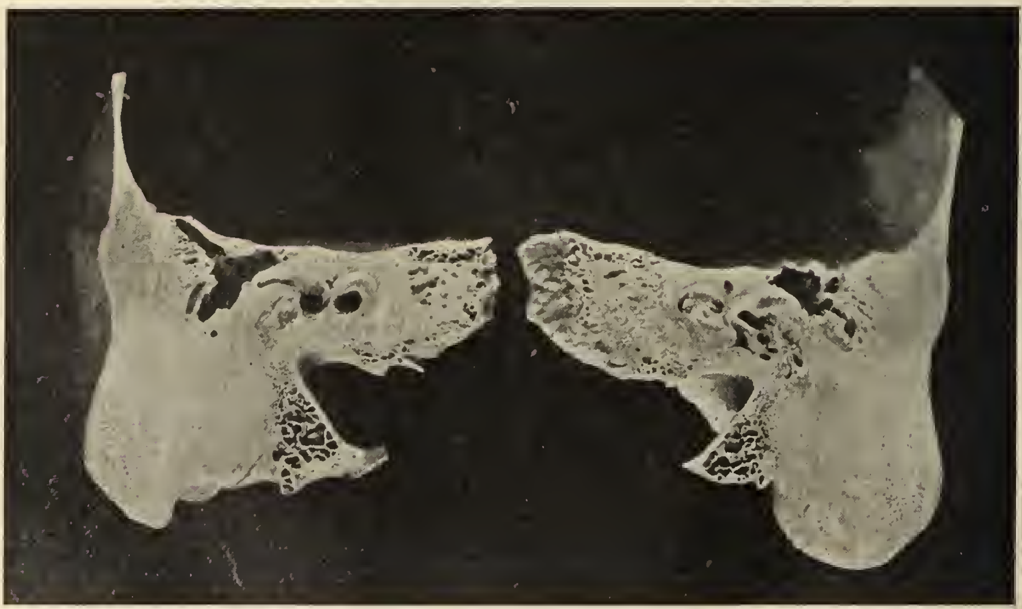
There is no doubt that the infantile types are found most frequently when operating for chronic suppuration. I have made sections of a certain number of bones in which chronic suppuration and its sequelæ have been present, and the very great majority are of the infantile types. The density of the outer wall has always been ascribed to an osteosclerosis due to chronic suppuration in the antrum, a theory which I cannot hold; for, as we see, the condition is a normal anatomical one in about 20 per cent. of all bones, and it is inconceivable how such a great change can take place from the cavity of the antrum, and also without totally obliterating the "fœtal cells" which would be the first to be attacked, but which can still be seen in most of my sections of infantile bones in which chronic suppuration has been present. Sections of the dense outer wall removed during the radical operation for chronic suppuration have been made for me by Mr. G. J. Jenkins. There are no signs of any pathological change suggesting osteosclerosis. In my opinion the anatomical conditions seen in the infantile types are factors in producing chronic suppuration and the dense outer antral wall is one of the factors and not a result. If one were given the choice of temporal bones, preference, I think, would be given to the cellular type as being safer in case of infection of the antrum.

FIG. 2.



Right temporal bone of a man aged 42 years.

FIG. 3.



Right temporal bone of an adult.

2. *Influence in operations for suppuration.*—These infantile

types must be expected when operating for chronic suppuration and its sequelæ. Apart from the difficulty of opening the antrum, on account of the density of the outer antral wall which may be three-quarters of an inch (19 mm.) in thickness, we must always expect to find a forward lateral sinus, and, as in the cellular types, the antrum may be very small or highly placed, or both, and the middle fossa may dip down, causing Macewen's triangle to lead to the dura mater. There is also more chance of injuring the facial nerve in its descending course, especially if the antrum is small or highly placed, or both.

If the outer wall is dense and symptoms pointing to intracranial complications are present careful examination of the posterior antral wall must be made. In cases in which signs and symptoms of acute suppuration in the antrum are present without pronounced signs behind the ear it is wise to open the antrum first, and not the mastoid process; for an infantile type is probably present with a forward sinus and a diploëtic mastoid process. At the same time care must be taken both in acute and chronic suppuration that infected cells are not present in the mastoid process; for, as we have seen, a dense outer antral wall may be associated with the presence of mastoid cells, and if they are not dealt with further trouble will occur.

Savile-row, W.

THE LYMPHATICS OF THE TESTICLE.

By J. KAY JAMIESON, M.B., C.M. Edin.,
DEMONSTRATOR OF ANATOMY IN THE UNIVERSITY OF LEEDS;
AND
J. F. DOBSON, M.S. Lond., F.R.C.S. Eng.,
SENIOR ASSISTANT SURGEON TO THE GENERAL INFIRMARY AT LEEDS.
(*From the Anatomical Department of the University of Leeds.*)

Although the general disposition of the lymphatic glands of the testis has been known from the early days of the history of the lymphatic system, it is only recently that the possibility of excising them in malignant disease has come to be considered seriously. Referring to a paper on this subject by Dr. Roberts, Professor W. Osler says, "It would seem reasonable in all cases to remove them as well as the primary tumour."[1] This remark led us to collect some specimens injected with Prussian blue with the object of ascertaining whether the arrangement of the glands would permit complete excision, and a paper by Mr. J. Bland-Sutton in The Lancet[2] induced us to complete the dissection of the preparations, ten in number, which we have obtained. The dissections, though showing nothing new, have enabled us to define the extent of the "lymphatic area" of the testis, and therefore the extent of a truly radical operation.

We have used full-time fœtuses only, and it may be argued that the anatomy of the glands presented in our specimens is not the same as in subjects of middle age. The number of lymphatic glands is said to diminish with increasing age, but, since the introduction of formalin as a preservative into the dissecting room, it has become evident that even in very aged subjects glands are numerous in normal situations; even though there should be an apparent decrease in number, it is doubtful whether this is due to complete atrophy. If so, it is difficult to account for the presence of the large numbers of enlarged glands which may be found in malignant disease in different parts of the body, even in aged subjects. In the fully injected axilla of a fœtus is seen a far better picture of what is to be expected and found in the axilla of a patient suffering from mammary carcinoma than dissections of the adult axilla can show.

Lymphatic vessels.—The capillary plexus of the organ is so close that by puncture at any point a good injection can almost always be obtained. The collecting vessels, four to eight in number, pass out of the mediastinum and ascend with the veins in the cord and in the subperitoneal tissues over the psoas as far as the point where the spermatic vessels cross the ureter. Here they part from the blood-vessels and from each other, and spray themselves in graceful curves, "fountain-wise," into the lumbar glands. In the upper part of their abdominal course some of the vessels divide, sending one branch to another vessel in the leash; in this way any vessel may empty its contents into more than one gland.

Lymphatic glands.—The *primary glands* (i.e., those receiving direct vessels from the testis) are those members of the lumbar group in front of and by the sides of the aorta and vena cava below the level of the renal veins, and one member of the external iliac group. Each testicle has its own set of glands which communicate with each other and both sets receive lymph from other structures.

Table showing Number and Situation of Injected Primary Glands in Each Specimen.

Specimen.	To right of vena cava.	In front of vena cava.	Between aorta and vena cava.	In front of aorta.		To left of aorta.
1	0	1	1	0	0	1
2	0	1	2	0	3	2
3	0	1	2	1	0	2
4	0	1	2	2	2	3
5	0	0	3	2	Not injected.	
6	0	1	1	0	2	1
7	1	0	3	0	0	1
8	0	0	2	1	Not injected.	
9	0	0	2	0	0	1
10	0	0	1	1	Not injected.	
Right side.					*Left side.*	

On the right side: In all the specimens one to three glands lie in the groove between the aorta and vena cava, and in one a gland is deeply placed between the two trunks. In five cases a gland is found on the lower part of the vena cava near the level of the bifurcation of the aorta. In five cases one or more glands lie in front of the aorta between the left renal vein and the origin of the inferior mesenteric artery. In one case a single gland is situated to the right of the vena cava in the angle between it and the right renal vein.

On the left side: In all the specimens glands lie in the tissue on the left side of the aorta, generally in a cluster behind the stem of the inferior mesenteric artery, but one may be placed as high up as the left renal vein and one as low as the angle between the aorta and the left common iliac artery. In three cases two or three glands lie in front of the aorta about and above the origin of the inferior mesenteric artery.

In two specimens we noted the presence of an injected primary gland on the right side at the brim of the pelvis just in front of the ureter. This is the posterior member of the inner chain of the external iliac group and has been described as normal by Zeissl and Horowitz,[3] who injected it by puncture of the inner side of the testis. Cunéo[4] has seen it in several of his specimens and is inclined to regard it as being constant but difficult to inject.

Secondary glands (i.e., those receiving efferent vessels from the primary glands) may be divided into three groups: (1) the primary glands of the same and opposite sides; (2) glands behind and between the two great trunks below and above the level of the renal veins; and (3) a chain along the outer side of each common iliac artery. All these, and especially Group 3, become injected with remarkable rapidity, rendering it a matter of difficulty to distinguish between primary and secondary glands. It sometimes happens, as in others parts of the body, that a gland which appears to be secondary proves on careful dissection to be primary, being entered by a direct vessel which crosses but does not enter a neighbouring gland. Many secondary glands are filled in a well injected specimen and can only be distinguished from the primary glands by tracing each collecting vessel to its termination.

These specimens show that the glands vary so much in number and arrangement that it is impossible to illustrate them by a drawing from any single specimen. For surgical purposes it is advisable to regard the glands as lying in various parts of an area bounded above by the renal veins, at the sides by lines drawn vertically a finger's breadth outside the vena cava and aorta respectively, and prolonged to cross the external iliac arteries about the junction of the upper and middle thirds, below by lines drawn from the bifurcation of the aorta to meet the extremities of the vertical lines. The portions of the area containing the right and left glands overlap by the breadth of the aorta. As the left renal vein crosses the aorta just below the origin of the superior mesenteric artery a considerable part of the area is covered by the head of the pancreas and the duodenum; the mesentery crosses the right portion of the area below the duodenum, and the inferior mesenteric artery lies in the left part, hiding some of the left glands.

---

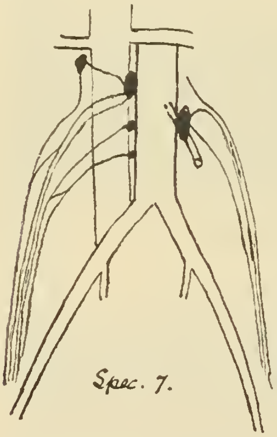
[1] Osler: The Lancet, May 25th, 1907, p. 1409.

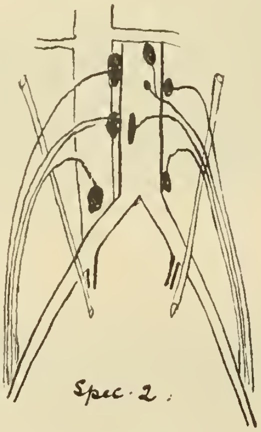
[2] Bland-Sutton: The Lancet, Nov. 13th, 1909, p. 1406.

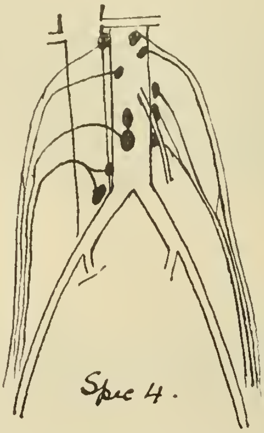
[3] Zeissl and Horowitz, in Poirier and Charpy, Lymphatics, translated by C. Leaf, p. 161.

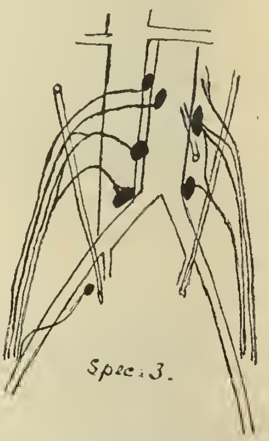
[4] Cunéo: Bulletin de la Société d'Anatomie, 1901.

Malignant disease of the testicle is well known to be an exceedingly fatal affection. As a rule the primary tumour is readily removeable and local recurrence is uncommon; in a large proportion of cases recurrence manifests itself in the lumbar glands and visceral metastases are frequent. Mr. Russell J. Howard[5] has published a most valuable clinical study of 57 cases, and of these found that in 8 the glands were affected when the patient first came for examination; in two other cases the enlargement was doubtful, but both patients subsequently died with secondary deposits in the lumbar glands. Out of 36 cases traced after operation 27 had recurrences, and of these 18 had definite glandular involvement. Of two cases which died after operation one already had disease of the lumbar glands. Though every effort was made to trace the cases only two patients were definitely known to be alive three years after the operation.


Spec. 7.


Spec. 2.


Spec 4.


Spec. 3.

When the disease is advanced a large deep-seated mass may be felt on one side of the spinal column near the umbilicus; it is fixed and nodular, does not move with respiration, and may transmit the pulsations. In one of Mr. Howard's cases a large mass was present in the left iliac region, and in another the inguinal glands were enlarged though the primary growth had not involved the scrotal tissues.

The early glandular matastasis which occurs in this disease is readily explained by the richness of the lymphatic plexus of the testis; owing to the division of vessels which so frequently occurs infection may be conveyed from a small focus in the testis to several primary glands. Involvement of the iliac glands may be primary by means of the vessel above described running to the external iliac glands, or secondary, by the free backwash from the lumbar to the iliac glands, which is so noticeable in injections. As the inguinal glands never receive vessels from the testis itself Mr. Howard's case can only be explained by retrograde infection.

It is clear that the present surgical treatment of malignant disease of the testis is most unsatisfactory, and that great improvement might result if the associated lymphatic area could be removed with the diseased organ. At least two attempts have been made to bring the treatment of this disease into line with that of malignant disease of other organs.

In October, 1901, Dr. J. B. Roberts of Philadelphia[6] removed a recurrent growth in the inguinal region, following castration for carcinoma of the testicle, and also removed some of the lumbar lymphatic glands in the following way. The abdomen was opened and the peritoneum in front of the aorta divided, and the fatty tissue lying over the vessel at its bifurcation was removed. In this fat several small lymph glands were recognised. The pre-aortic cellulo-adipose tissue was removed with scalpel and scissors until the front of the aorta was denuded from its bifurcation to a point about two inches higher up. The patient developed intestinal obstruction, a fæcal fistula formed, and death occurred from peritonitis. Examination of the tissue removed showed that it contained four lymph glands, two of which showed commencing disease.

In September, 1909, Mr. J. Bland-Sutton[7] attempted the removal of the lumbar glands in the following way. The right testicle was exposed and freed, and the cord was isolated up to the internal abdominal ring. The abdominal wall was then incised upwards in the linea semilunaris down to the peritoneum. The peritoneum was stripped forwards, the vas was ligatured at the brim of the pelvis, and the spermatic vessels were tied close to the vena cava. "At this stage the retro-peritoneal tissues of the right lumbar region were well exposed, and this enabled me to examine the parts about the aorta and search for enlarged lymph glands. I found one on a level with the third lumbar vertebra, lying on the anterior face of the vena cava; although as big as a haricot bean it shelled out easily. A very careful search was made for other lymph glands, but without success." Examination of the parts removed showed that the testicular tumour was malignant and that the one gland removed was already affected.

It is clear that any operation on the lumbar glands to be sufficient must include the removal of all those glands receiving direct vessels from the testis. These vary so much in number and position, and are so difficult to detect in fat subjects, that the only effective way of securing them is to extirpate the cellulo-fatty tissue from a given area in which the glands are known to lie. It is comparatively useless to search for and remove any glands which appear to be affected; a gland may be perfectly normal to the naked eye and still contain carcinomatous elements. The essence of the modern operations for malignant disease is the removal of masses of tissue known to contain glands, without any reference to individual glands; the "careful search" for glands is abolished.

Reference to the description and drawings of the lymphatics will show that the only effective method of removing the lumbar glands would be to strip the aorta and vena cava, the common iliac vessels, the proximal third or so of the external iliac vessels, the upper part of the spermatic vessels on either side, and the trunk of the inferior mesenteric artery, of all the cellulo-fatty tissue lying on, around, and between them from the level of the renal vessels downwards. It cannot be allowed that either the operation of Dr. Roberts or that of Mr. Bland-Sutton warrant the use of the term "radical"; by neither method is the "lymphatic area" removed.

We must conclude that the arrangement of the lymphatics of the testis is such that the complete removal of the "lymphatic area" is exceedingly difficult and dangerous, if not impracticable. When the right testis is diseased in some fortunate cases it may be feasible to secure all the primary glands if these happen to lie superficially on the vena cava, to its outer side, and between it and the aorta. For this the transperitoneal method appears to be preferable to the retroperitoneal exposure of Mr. Bland-Sutton. The operation appears to be feasible, and in a suitable case we should attempt it; but it must not be regarded as a truly radical method, as in only a small proportion of cases will it be possible to secure all the primary glands. When the disease is on the left side the intimate relations of the glands to the inferior mesenteric vessels and the renal vessels, and the fact that many of them lie under the duodenum, appear to forbid even a partial operation.

---

[5] Russell J. Howard: Practitioner, 1907, vol. lxxix., p. 794.

[6] J. B. Roberts: Annals of Surgery, 1902, vol. xxxvi., p. 539.

[7] Loc. cit.

PERFORATIVE PERITONITIS ORIGINATING IN POUCHES OF THE LARGE INTESTINE.

BY GORDON TAYLOR, M.A. ABERD., M.S., B.SC. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE MIDDLESEX HOSPITAL;
AND
C. E. LAKIN, M.D. LOND., M.R.C.P. LOND.,
PATHOLOGIST TO THE MIDDLESEX HOSPITAL; ASSISTANT PHYSICIAN TO THE BOLINGBROKE HOSPITAL, WANDSWORTH COMMON, S.W.

THE recent discussion in the columns of THE LANCET upon intestinal pouches has induced us to make this further contribution to the subject of diverticula of the large bowel, to the clinical aspect of which, at any rate, we feel that sufficient attention has not hitherto been paid. Possibly these cases of perforative peritonitis due to secondary changes in colonic pouches are not in reality so uncommon as the literature would lead us to believe, since by a curious chance two patients with this condition were operated upon by one of us within the short space of a fortnight, and only a year before a similar case was admitted into hospital under the care of a colleague, the patient being in an absolutely moribund condition and dying about an hour after his arrival in the ward.

CASE 1.—The patient, a man aged 70 years, was admitted into the Middlesex Hospital on May 22nd, 1909, with symptoms of peritonitis. He had enjoyed good health up to a week before his admission into the hospital, when he was suddenly seized with severe pain in the lower part of the abdomen, but it was not until the bowels had remained obstinately confined for nearly a week despite aperients and until vomiting had supervened that medical advice was sought. A small evacuation followed the administration of an enema, but a second enema yielded no result, and the vomiting became more severe. When the patient was examined after his arrival at the hospital the abdomen was found to be enormously distended and uniformly tender and it did not move with respiration; the temperature was 100·2° F. and the pulse was 96. A rectal examination revealed little except a tender pelvic peritoneum. The case was regarded as one of probable appendicitis with spreading peritonitis and paralytic distension of the bowel.

A median sub-umbilical incision was made, when the coils of bowel were exposed and were everywhere found to be greatly distended and covered with flakes of partly organised lymph. The vermiform appendix was found to share in the inflammatory process and it was removed, but its appearance was regarded as scarcely accounting for the severe peritonitis present. On separating some adhesions to the mesial side of the ascending colon and cæcum a quantity of thick pus escaped. The possibility of a perforated stercoral ulcer was considered, and the lower segments of the large bowel were examined for the existence of a cause of obstruction. The sigmoid was found to be somewhat thickened and to be beset with diverticula, but at the time of the operation these were not regarded as having any causal relationship to the peritonitis. Two drainage-tubes were inserted—one in the lower end of the median incision, the other through a puncture in the loin. The abdomen was closed with through-and-through sutures of silkworm-gut. The vomiting ceased after the operation, but the pulse gradually increased in rapidity, and the patient died about 18 hours after.

Post-mortem examination revealed numerous diverticula of various sizes along the whole length of the large intestine, especially marked in the sigmoid flexure, and arising in connexion with appendices epiploicæ; these contained firm plugs of inspissated fæcal material. One of these saccules situated in the ascending colon about 5½ inches from the cæcum had perforated; the perforation was somewhat round in shape, the edges were much thickened, and the aperture had a diameter of a third of an inch. A condition of diffuse peritonitis was present.

CASE 2.—The patient, a man, aged 57 years, markedly obese, after a four-mile walk on the morning of June 6th, 1909, was suddenly seized with very severe pain in the abdomen while taking his mid-day meal. He became somewhat collapsed, and required help to reach his bedroom. Almost immediately after the onset of the pain, which was accompanied by vomiting, a loose motion was passed. When seen with Dr. H. B. Shepherd about seven hours after the commencement of the attack the patient was lying on his left side with his knees drawn up on the abdomen. There was great tenderness on pressure over the left iliac fossa, and most marked cutaneous hyperæsthesia was present in this region; the rest of the belly wall was soft. The liver dulness was normal, and there was no evidence of free fluid in the abdominal cavity; the temperature was subnormal and the pulse was 100. There was no swelling at any of the hernial rings, but the patient had worn a truss for over 20 years for an alleged double inguinal rupture. Examination of the urine revealed no abnormality. The symptoms strongly suggested appendicitis and the possibility of a left-sided appendix was considered.

The abdomen was opened through the left rectus, and on incising the peritoneum about 1½ ounces of thin purulent fluid escaped from the left iliac fossa. A band of omentum was found crossing the sigmoid to the left internal abdominal ring and was removed. About two inches above the point where this crossed the bowel was a diverticulum apparently originating in connexion with an appendix epiploica, which contained a pellet of fæcal material; the pouch had perforated at its tip and a fæcal mass appeared to be undergoing a process of extrusion. The diverticulum was removed and the stump was ligatured and invaginated by a purse-string suture of thread. Several other smaller pouches were found along the descending and iliac colon and another at the commencement of the ascending colon; all these appeared to be situated along one of the tæniæ coli and to be related to the appendices epiploicæ. The abdomen was closed with through-and-through sutures of thread, a drainage-tube being inserted through the incision into the left iliac fossa and a second tube into the pelvis through a separate suprapubic stab. There was nothing remarkable in the after-history of the case and the patient is now in excellent health.

CASE 3.—The third case is that of a man, aged 65 years, who died about an hour after admission into the Middlesex Hospital. The whole length of the colon presented scores of small pouches, into most of which the tip of the little finger could be introduced. The walls of the pouches were thin and appeared to consist of only a thin layer of mucous membrane and peritoneum. Several of the pouches contained hardened fæcal material. A little below the splenic flexure there were matted adhesions which inclosed a little sac communicating with the colon. The adhesions had given rise to a certain amount of intestinal obstruction, since there was great distension of the small intestine and of the large as far as the splenic flexure.

During the last three years two other cases have been met with in the post-mortem room at the Middlesex Hospital in which, during life, no suspicion was entertained of the existence of pouches in the intestine. We are indebted to Dr. W. Essex Wynter for permission to include these in this paper. One case was that of a woman, aged 68 years, who was admitted for lobar pneumonia; the other, that of a male, aged 69 years, who had died from bronchitis and cardiac failure. In the case of the woman numerous pouches were present in the pelvic colon; they were situated mostly along each side of one of the tæniæ coli and contained scybalous masses. They were not connected with the appendices epiploicæ. There were also large numbers of pouches in the upper few feet of the jejunum varying in size from a pea to an unshelled walnut: these appeared primarily to have projected between the layers of the mesentery. As seen from the interior of the bowel all had well-defined circular mouths of smaller diameter than the protrusions themselves. A portion of the jejunum of this case has been presented to the Museum of the Royal College of Surgeons of England. In the case of the male the pouches extended into the base of attachment of the appendices epiploicæ, and were situated in the iliac and pelvic colon. As Mr. Bland-Sutton has demonstrated, if there be any tendency to the formation of diverticula, the soft fatty tissue of the appendix epiploica continuous with the subserous fat forms a point of lowered resistance.

The earliest reference to the subject under notice which we have been able to find is under the title of "False Diverticula of Intestine" in the Transactions of the Pathological Society, by Dr. Bristowe in 1854. Dr. W. H. Maxwell Telling, in his excellent article in THE LANCET,[1] has made an exhaustive contribution to the subject of the secondary pathological processes which may occur in connexion with acquired diverticula of the sigmoid flexure. The object of the present communication is only to emphasise one of the more important of these. The fact that three out of the five cases which have come under the observation of one or other of the writers during the last three years have been cases of perforative peritonitis suggests that this complication must be more frequent than is perhaps usually held. Attention has been drawn by Mr. Bland-Sutton and other authors to the fact that left-sided abdominal pain of sudden onset may arise in connexion with perforation of a sigmoid diverticulum, but perforation of a pouch in the ascending colon, as in Case 1, shows that this exceptional occurrence must be added to the category of pathological phenomena associated with pain commencing on the right side of the abdomen.

A CASE OF

SPINAL MENINGITIS RESEMBLING TUMOUR OF SPINAL CORD; LAMINECTOMY; RECOVERY.

By RICHARD ROPER, F.R.C.S. EDIN.
SENIOR ASSISTANT MEDICAL OFFICER TO ST. MARYLEBONE INFIRMARY

THE patient, a man aged 41 years, was admitted to St. Marylebone Infirmary on July 2nd, 1909, with a history of pain in the arms since the winter of 1908–09. The pain had become more severe during the six weeks before admission. On examination there were found signs of healed tuberculosis at the apex of the right lung. The heart was not enlarged, but other changes in the cardio-vascular system were thickened arteries, water-hammer pulse, and roughened first sound in the aortic area. The pupils were equal and reacted to light and accommodation; the knee-jerks were brisk; the right plantar reflex was absent and the left gave a flexor response. No other changes were noticed in the nervous system at that time. I found a well-marked scar on the glans penis.

The patient was allowed to get up, and he had no further symptoms until July 21st, when he complained of much pain in the back and was kept in bed. On August 4th a lesion of the spinal cord was evident. The cranial nerves were normal, and there were no changes in the fundus oculi. Both arms and legs were distinctly weak, the weakness being more marked in the legs. At the level of the eleventh dorsal segment there was a band of hyperæsthesia, and sensation to wool was impaired from the knees downwards. The knee-jerks were brisk and ankle clonus was present. Both plantar reflexes were extensor. The elbow- and wrist-jerks were absent. He was inclined to have retention of urine and there was some difficulty in starting micturition. Except for some tenderness in the region of the ninth dorsal spine, no changes were apparent in the spinal column. On August 9th the weakness of the hands and arms had increased rapidly and he was no longer able to hold spoon or fork. On the 18th he had anæsthesia and analgesia from two inches below the umbilicus downwards to the feet. By August 25th the anæsthesia had spread up to the level of the eighth rib and the weakness of the hands and arms was more marked. Calmette's tuberculin test was tried and was positive in 16 hours, which may have been accounted for by the signs of old tubercle at the right apex. On Sept. 1st he had double incontinence and began to complain of much more pain in the back.

On re-examination of the nervous system on Oct. 2nd no other changes were found in the cranial nerves except that the pupils were very small. The loss of power in the legs was complete and they were kept flexed in a spastic condition. The arms could just be raised from the bed, but the patient was practically helpless. There were absolute anæsthesia and analgesia up to two inches below the nipple, and sensation was impaired up to the level of the third rib. The lines of both forms of anæsthesia were sharply defined. The abdominal reflexes were absent, but all reflexes below this were much increased. Patellar and ankle clonus were present and the plantar reflexes were extensor. There were no trophic changes. He had double incontinence.

Since the signs of cord lesion had become evident potassium iodide had been given in increasing doses, and for some weeks he had had as much as 50 grains of potassium iodide with drachm doses of the solution of perchloride of mercury. All the symptoms gradually increased and the pain was severe enough to need repeated injections of morphia. No primary malignant focus was found although search was made. A diagnosis of spinal tumour, involving the fifth dorsal segment, was made. The chief points in favour of this were: (1) Early onset of pain, increasing in severity; (2) sharp definition of anæsthesia, both absolute and relative; and (3) absence of improvement with large doses of potassium iodide.

On Oct. 6th I performed laminectomy. A mixture of chloroform (two parts) and ether (three parts) was administered at 9.30 A.M., and the laminæ of the first, second, third, and fourth dorsal vertebræ were removed. The thecal fat appeared normal and no tumour on the anterior or posterior aspect of the cord was found. The bones appeared normal. The dura mater was incised for three inches and the only apparent pathological condition was the presence of adhesions between the dura mater and the pia arachnoid. The cerebro-spinal fluid was under fair pressure but did not spurt out, and it soon stopped flowing at the time of operation. A director was passed in an upward and downward direction under the dura mater for three inches, but no obstruction was found. Two fine catgut sutures brought the dura mater together, and the muscles were sutured over this with stouter catgut. Skin sutures were put in widely apart so as to allow for any leakage of cerebro-spinal fluid.

At 9.15 P.M. the same day the pupils were noticed to be larger. For some days after the operation the temperature was raised. Pain had quite disappeared. Cerebro-spinal fluid leaked for about three weeks, and at the end of this time the wound was sound, although there was still a considerable collection of this fluid under the scar. On Oct. 27th the patient's condition had much improved. Power in the legs and arms began to return and he was able to flex and extend the legs freely. Sensation had returned on the right side to a point four inches above the umbilicus, and on the left at the level of the umbilicus. There was complete control over the bladder sphincter but not over the anal sphincter. As the condition was thought to be syphilitic, and potassium iodide had had no effect, 100 grains of arsacetin were given into the pectoral muscles in 10-grain doses dissolved in 1 drachm of sterile water. These doses were given every other day.

The condition of the patient on Dec. 16th was as follows. The pupils were equal, of natural size, and reacted well to accommodation and light. He was able to wash and feed himself and his grip was fair in both hands. He was able to raise himself in bed by the use of his pulley. The legs were still spastic, although they could be abducted, flexed, and extended against some resistance. From the level of the anterior superior spine upwards sensation to the lightest touch with wool was perfect. Below this level sensation to light touch was impaired in patches in both legs. Both wrist-jerks were present; the abdominal reflexes were absent; the knee-jerks were still exaggerated; ankle clonus was present; both plantar reflexes were extensor. He had completely regained control over the bladder, and although he had not regained control over the anal sphincter, impulses denoting desire for defæcation now made themselves felt.

---

[1] THE LANCET, March 21st (p. 843) and 28th (p. 928), 1908.

General nutrition had much improved and he was quite free from pain.

I am indebted to Mr. J. R. Lunn, medical superintendent, for permission to publish this case.

☞ *Note.*—Since writing the above I have to report that the patient is now (February, 1910) able to walk without assistance, though with a somewhat spastic gait, and that he has full control over both sphincters.

St. Marylebone Infirmary, W.

TWO CONSECUTIVE PERFORATIONS OF A PEPTIC JEJUNAL ULCER FOLLOWING GASTRO-JEJUNOSTOMY FOR A PERFORATED GASTRIC ULCER.

BY A. ERNEST MAYLARD, M.B., B.S. LOND.,
SURGEON TO THE VICTORIA INFIRMARY, GLASGOW.

IN a recent paper on Some Cases of Perforation of Stomach and Duodenal Ulcer[1] Mr. J. Grant Andrew recorded an exceptional instance of a triple consecutive perforation of gastric ulceration. The case occurred in my wards, and it can be considered little else than a remarkable coincidence that I am able to record a second instance of a similar character, though differing in this unique respect, that of the three perforations the last two were connected with jejunal ulceration. The history of the case was as follows:

A married woman, aged 51 years, was admitted to the Victoria Infirmary in February, 1907, suffering from a perforated gastric ulcer. At the operation a perforation was found on the anterior wall of the stomach near the pylorus. It was about half an inch long and a quarter of an inch wide with irregular edges, and seemed to be the centre of a large ulcer. The perforation was closed with Lembert sutures and a piece of omentum was also fixed over the lesion. An anterior gastro-jejunostomy was performed.

The patient remained well until October of the same year—i.e., about eight months after the operation—when she was seized with an attack of "indigestion." This terminated in the course of three days in an acute crisis with symptoms of perforation. The abdomen was opened in the middle line. A little fluid escaped from the peritoneal cavity, and the parts presented the appearance of a fibrinous peritonitis. Numerous adhesions were encountered, and on separating these a perforation was found large enough to admit a No. 6 urethral catheter. It was situated on the anterior surface of the distal limb of the jejunum about 1½ inches from the gastro-jejunal orifice. The perforation was closed by a purse-string suture, and over this an interrupted series of Lembert sutures. The parts were swabbed dry, and the parietal wound was completely closed.

The patient remained well until November, 1909—i.e., for two years after the second operation—when she again suffered from "indigestion," and after an attack which lasted for a couple of days she was suddenly seized with acute abdominal pain and other symptoms suggestive of perforation. The abdomen was opened by a transverse incision midway between the umbilicus and xiphoid. The rectus muscle on each side was partially divided and the peritoneal cavity was opened. Numerous adhesions were found between the stomach, bowel, and anterior parietes. On turning up the omentum a small perforation was discovered in the efferent limb of the jejunum, about an inch or so below the site of the previous perforation. The perforation was about an eighth of an inch in diameter and close to the mesenteric attachment. It was easily closed by a purse-string suture, and for greater security a piece of omentum was stitched over it. From this (her third) operation she made a complete recovery, and left the institution about five weeks after with a medicine containing alkalies to be taken occasionally.

The last two perforations in the above case may be considered as coming under the head of strictly ulcerative lesions of the jejunum; that is to say, they were not of that class where the ulceration primarily commences at the line of anastomosis, and is, in one sense therefore, traumatic in origin. Both ulcers occurred at a short distance from the gastro-jejunal line of union, and probably receive their pathological explanation from an initial lesion produced by the action of the acid gastric secretion with subsequent peptic digestion. The association of the ulcers with an anterior gastro-jejunostomy only goes to add another illustration to the many that have been recorded of this somewhat striking connexion. Reflecting upon the treatment adopted, I regret that neither the report of the operation nor my memory permits me to say why I did an anterior instead of a posterior gastro-jejunostomy. I do not think that altogether in about 200 cases of gastro-jejunostomy I have more than half a dozen times performed the anterior operation, and there has always been some special reason for selecting the less preferable method. The occurrence of a second ulcer independent of, and distant from, the first jejunal ulcer indicates that the same cause must have been at work as produced the first; and as this seemed likely to be the action of a hyperacid gastric juice greater precautions have been exercised in the way of prescribing alkalies to check excessive acidity and so prevent the attacks of "indigestion" which seem to have been the immediate precursors of the perforations.

Glasgow.

A CASE OF RUPTURE OF THE UTERUS TREATED BY SUTURE OF THE RENT PER VAGINAM AND DRAINAGE.[1]

BY HERBERT J. PATERSON, M.B., B.C. CANTAB., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE LONDON TEMPERANCE HOSPITAL, ETC.

THE patient, a married woman, aged 25 years, had had three children previously, the last 18 months ago. After the birth of this child she was laid up in the infirmary for 14 weeks, and some operation for "womb trouble" (? curetting) was performed. There was nothing unusual in connexion with the two previous confinements.

The history of her recent confinement was as follows. The waters broke on August 11th, 1909. Dr. Mulloy saw the patient on the 13th. The cervix was slightly dilated, there were no labour pains, and the cord was prolapsed and pulseless, so nothing was done. Dr. Mulloy was called again at 10 P.M. on the night of the 14th. The patient was then having labour pains, but there was slight dilatation of the cervix, and the cord was prolapsed and pulseless. Under chloroform the cervix was slowly dilated until the knuckles of the open hand could be passed through the internal os. The right foot and hand presented with the pulseless cord between them. Delivery was effected without difficulty by traction on the foot, the back of the child being rotated towards the pubes, and flexion of the after-coming head secured by introducing a finger into the child's mouth. No instruments were used. The placenta was expressed with ease. On introducing the hand into the vagina it passed into the abdominal cavity. Dr. Mulloy realising the gravity of the patient's condition at once sent her up to the London Temperance Hospital.

The condition on admission (note by Dr. Russell Square) was as follows. There was some bleeding from the vagina and the patient was very collapsed, sunken round the eyes, and extremely restless. The extremities and the face were cold and damp with perspiration; the pulse was very small, soft, and uncountable. Some tenderness was present over the abdomen, increased by gentle pressure with the hand. There was some dulness in the flanks. When I saw the patient about 3 A.M. she was extremely collapsed, although somewhat better than on admission. The pulse was very feeble, the rate being about 140. The abdomen was somewhat distended and there was some dulness in the flanks. The vagina was full of blood-clot and a coil of intestine was felt protruding through a large rent in the vaginal vault.

Ether being given by the open method, a loop of large intestine (apparently sigmoid) was found to be prolapsed through an extensive rent in the posterior vaginal wall, through which the fist could be easily passed into the abdominal cavity. The left parametrium was involved in the tear, and there was free arterial hæmorrhage from two large vessels; these were

---

[2] THE LANCET, Oct. 30th, 1909, p. 1273.

[1] A communication made to the Gynæcological and Obstetrical Section of the Royal Society of Medicine on Nov. 11th, 1909.

secured by ligature. The large intestine was pushed back into the abdominal cavity and a considerable quantity of blood was removed from Douglas's pouch. Further examination showed that the cervix was completely torn through, the tear extending upwards and involving the uterus for a distance of at least 4 inches, but as the uterus appeared to be firmly retracted no attempt was made to define accurately the upper limit of the tear. The torn edge of the cervix and lower part of the uterus were approximated by three stout catgut sutures. The torn edges of the peritoneum and vaginal wall were seized with forceps, and a purse-string suture was passed right round the tear, the suture being passed alternately through the vaginal wall and peritoneum. A large rubber tube was then inserted into Douglas's pouch, and the purse-string suture was passed tightly round it. The patient was much collapsed at the end of the operation, which lasted under half an hour, but gradually rallied. Continuous saline proctoclysis was maintained for 60 hours, and the patient made a good recovery, although her temperature varied between 99° and 101° F. for the first 12 days after admission. The tube was removed on the sixth day.

On Sept. 8th the patient was examined under ether. The uterus was not felt above the pelvic brim. The cervix was posterior in the pelvis, the texture was firm, and the canal was closed. The vagina was narrowed posteriorly. In the posterior fornix was a roughened area about one inch in diameter. Per speculum was seen a granulating area rather larger than a shilling-piece immediately behind the cervix. Bimanually the uterus was freely moveable. The sound passed, concavity backwards, four inches. Per rectum was felt a slight thickening on the posterior wall of the uterus extending more than half-way up towards the left cornu. The pelvis was not contracted.

So far as I am aware, the method of vaginal suture and drainage was not adopted in any of the recorded cases of ruptured uterus. It appears to me that those who advocate the treatment of this accident by hysterectomy lay too much stress on the difficulty of controlling hæmorrhage. I think that Nature's ability to deal with internal hæmorrhage is often under-estimated. A perusal of the recorded cases leads one to think that in some instances recovery ensued, *not* because of, but in spite of, hysterectomy. To perform hysterectomy if suture be practicable seems to me an unsurgical procedure. As regards the case here recorded, I am strongly of the opinion that the patient was not in a fit condition for hysterectomy, and that this method of treatment would most probably have led to a fatal result.

Upper Wimpole-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Cancer of the Pylorus.

A MEETING of this section was held on Feb. 8th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. E. W. HEY GROVES read a paper on the Radical Operation for Cancer of the Pylorus, with special reference to the advantages of the two-stage operation and to the question of the removal of the associated lymphatics, illustrated by numerous lantern slides. He first gave a brief account of eight cases of his own in which he had performed excision. Of these eight cases six were done in two stages, first a gastro-enterostomy, and in about 10 days later partial gastrectomy. Of these only one died. The other two, in which the whole operation was performed at one sitting, died. The symptoms and diagnosis were discussed with especial reference to the scope of exploratory operations. In all doubtful cases no hesitation ought to be felt in advising exploratory laparotomy. But even when exposed to sight and touch the stomach tumours are often impossible to differentiate. Cases were related in which benign swellings were excised under the impression that they were malignant. Other cases which were regarded as hopelessly malignant lived for many years after gastro-enterostomy to prove the mistaken diagnosis. Those facts were all strong arguments for the two-stage operation in which a piece of the growth might be taken for histological examination before a radical excision was performed. The mortality results of large series of resection cases were reviewed in which it was shown that in over 1000 cases between 26 and 51 per cent. died. With these figures were compared 18 cases treated by the two-stage method with only three deaths. The high mortality was due to three chief causes—shock, peritonitis, and lung complications. Reasons were shown why the two-stage method went far towards avoiding all these dangers. It was pointed out that if the interval between the two stages was not longer than 14 days no difficulty was experienced from adhesions when excision was undertaken. The distribution of the lymphatics of the stomach was reviewed and especial stress laid upon the lymph vessels in the great omentum which loop downwards and then up over the colon to the glands above the pancreas. Pathological evidence was given of the actual spread of cancer of the stomach by way of the omentum to the organs in the pelvis. Therefore it was considered that every complete removal of cancer of the pylorus should include that of the great omentum. Details were given of a method of operation which carried this out, and it was contended that it was quite as easy to remove the omentum from the front of the transverse colon as to divide the omentum from the great gastric curve. Lastly, figures were given showing that the ultimate (three year) survival after excision of cancer of the pylorus was only about 7·6 per cent. of those submitted to operation and about 15 per cent. of those surviving the operation. It was suggested that these poor ultimate results might be due in part to the incomplete removal of the lymph area associated with the stomach.

Mr. HERBERT J. PATERSON said that the section was greatly indebted to Mr. Groves for coming up from Bristol to give them such an encyclopædic paper on the subject of resection of the stomach. In these days when surgery had reached such a degree of perfection that all moveable organs could if necessary be removed, irremoveable ones stitched, and those which were not amenable to such treatment incised or partly resected, it required considerable ingenuity to suggest a new operative procedure, and Mr. Groves was to be congratulated on having brought forward such a procedure that evening. He thought that Mr. Groves had been unduly pessimistic as to the results of the one-stage operation, so far as the immediate mortality was concerned. For his Hunterian lectures he (Mr. Paterson) had ascertained the results of Kocher, the Mayos, and several other surgeons, and he found that the average mortality after operation was under 20 per cent. When he was in America in 1907 the Mayos told him that they had up to that time performed over 100 resections with a mortality of 14 per cent. Mr. Groves had given them a table showing the causes of death after resection of the stomach, and according to that table 79 per cent. of the deaths which occurred after operation were the result of peritonitis from leakage or other causes. With the improved surgical technique of the present day no self-respecting surgeon could dream of losing so many cases from leakage, or, if he did, he ought not to attempt resection of the stomach. As regards the operation in two stages, he did not think that the immediate mortality was as low as Mr. Groves maintained, because he (Mr. Paterson) knew of several published cases which had ended fatally, but which Mr. Groves had not included in his table. His own experience was that the adhesions which formed after the first operation added considerably to the difficulty of the second operation. Then, too, in some instances the manipulations incidental to the removal of the stomach at the second operation had been sufficient to separate the recently formed adhesions of the gastro-jejunostomy previously performed, so that at the second operation the whole procedure had had to be done over again. Some years back he had called attention to another objection to the operation in two stages—namely, the risk that the subsequent resection might disturb the relations of the previously effected anastomosis, and so lead to regurgitant vomiting. This had happened in the case which he had reported, but he was of opinion that it was a risk which might be guarded against. Yet notwithstanding these objections he had gradually come round to the opinion that on the whole the operation in two stages was to be preferred in many of the cases. In treating cancer of the stomach one was met with a very difficult problem, and one had to decide what was the best course, taking many circumstances into consideration. Therefore, he thought it better, except perhaps in very early cases, to perform a preliminary gastro-jejunostomy, and then feed the patient up for two or three weeks in order that he might be in a better position to stand the subsequent resection. With regard to the duration of life after operation, there, again, he thought, Mr. Groves was more pessimistic than he need be. Of Kocher's cases he remembered that at least 21 per cent. of those who recovered were well three years after the operation, and he believed that just over 11 per cent. were well five years after operation. It was difficult to criticise Mr. Groves's operative procedure, because one was in the dark as to the difficulty of doing it, but he (Mr. Paterson) felt that patients suffering from gastric carcinoma were usually so feeble when seen by the surgeon that anything which added to the severity of the operation must be carefully considered before it was carried out, and without more practical knowledge of Mr. Groves's method he would not be inclined to add to resection the routine peeling off of the omentum, as it would add to the severity of the operation. But he agreed there was a risk of cancer spreading down the omentum and causing a recurrence in it after the stomach had been removed, and he lost one of his own patients from that cause three and three-quarter years after operation. The patient came up at the end of three and a half years with a huge mass which he took to be a recurrence of the growth in the omentum, and naturally he did not advise operation. Later she came with signs of acute peritonitis and died in a few hours. At the post-mortem examination it was found that the huge mass which had been felt was not cancer, but an inflammatory mass around a stercoral ulcer, which ulcer had been caused by a very small growth in the colon which had caused an annular constriction and led to the accumulation of fæces behind the stricture. In that case if the omentum, or, better still, the transverse colon, had been removed the recurrence would probably have been prevented and the patient's life would have been much prolonged. He wished most emphatically to dissent from one opinion apparently held by Mr. Groves. He had said that in a doubtful case of gastric carcinoma an exploratory operation should be performed, unless the patient gained in body weight under medical treatment. In other words, Mr. Groves held that increase of body weight negatived gastric carcinoma. He (Mr. Paterson) maintained that such an opinion was quite erroneous. Patients with gastric carcinoma often gained considerably in weight as a result of rest and suitable food; he himself had observed a gain of two or three pounds in 10 days. Increase in the body weight was quite compatible with the existence of cancer. He felt loth to disagree with Mr. Groves's plea for a more radical operation in gastric carcinoma, because he so fully agreed that the more radical the operation the better the after-results. At the same time, if he himself adopted a more radical operation he would prefer to resect the omentum and transverse colon, as, indeed, he had done in one case. But taking into consideration the usual condition of patients suffering from gastric carcinoma when they were seen by the surgeon, he was very doubtful how far such an extensive procedure was justifiable. His opinion was that future success in operations for gastric cancer must depend not on adding to the extent of the operation but on earlier diagnosis.

Mr. W. G. SPENCER said he regretted that neither of the preceding speakers had dealt with the desirability of submitting patients to resection of the stomach. The German statistics quoted, of 15 per cent. to 7½ per cent., were really the percentages of a few cases. Neither speaker had quoted English or American statistics on the subject, in which as far as he knew the survivals beyond three or five years were only single cases. He had himself had a series of cases more especially in connexion with his hospital work, from Dr. F. de Havilland Hall and Dr. W. Murrell, selected cases, and he had operated upon them, and as far as he could see, very few of them were reasonably fit to be submitted to the operation. Either the case was far too advanced for the operation, and gastro-jejunostomy had been performed to relieve them for a short time, or the case had been an early one and there was a doubt whether it was malignant. And even in the case of the specimen which Mr. Groves projected on to the screen he felt considerable doubt about its malignancy, without, of course, seeing the serial sections from it, and he thought microscopists would cavil at it. Mr. Paterson had pointed out the objection to carrying out the procedure in two operations; and the mere fact of going up to the origin of the gastric artery and down to and including the omentum increased the gravity of the procedure, and the operative mortality could not be hoped to be anything except considerable. There was an alternative in gastro-jejunostomy, and the operative mortality from that, *qua* gastro-jejunostomy, had been reduced until it was now scarcely anything at all. The results from it were certainly surprisingly favourable. His last case of resection was six months ago. It seemed to him to be an annular hard nodular mass of cancer at the pylorus, and there was a deep excavation running down to the head of the pancreas. That patient got well; but it was a severe operation. The pathologist reported that there was no sign of carcinoma, that it was an inflammatory mass. It would seem that the Germans had a more favourable form of carcinoma for operation than the English ones.

Mr. JONATHAN HUTCHINSON said he could thoroughly endorse Mr. Spencer's views. Amongst the very favourable cases included in the German statistics he thought it probable that some examples of inflammatory and nodular thickening of the pylorus treated by excision had been put down as cancer. Such was probably Billroth's often quoted case in which the patient was well 12 years after pylorectomy for "cancer." He had found it possible in some cases to determine the true nature of an excised "tumour" of the pylorus only by prolonged expert examination of many sections. With regard to the slide in question which Mr. Spencer had remarked upon, he did not think it looked at all like cancer. He asked Mr. Groves whether in his six operations performed in two stages he had found difficulty in excising the required amount of stomach from the position of the gastro-jejunostomy aperture. He (Mr. Hutchinson) was sceptical about the value of excising the great omentum. Knowing how closely it adhered to the colon and how its removal would add to the difficulty of the operation, he doubted whether it increased the chances of life for the patient.

Mr. C. A. BALLANCE expressed his great appreciation of the paper, and said he would like many others to have been present to hear it. He remembered seeing Thiersch, in 1884, remove the pylorus in Leipzig for the first time; he had been practising the matter with two assistants for some weeks previously. The resection of the stomach and the union of the cut end of the stomach to the divided duodenum was completed in very little over an hour. At the end of six weeks he (Mr. Ballance) saw the patient again and she was eating a mutton chop. He did not know how long she lived. When he came back to London he was present at a similar operation, but for that the same preparation had not been undertaken and the operation took 3½ hours. The result was that the patient died very shortly after the operation. Since that time much more was known about gastrectomies and gastro-enterostomies, and Mr. Groves was to be specially congratulated upon his study of the lymphatics in the region of the stomach. He seemed to have attempted to do for the stomach what Halsted had done for the breast. In operations for cancer of the pylorus it would in the future be necessary to do a much wider removal of the peritoneal structures around the pylorus than surgeons up to the present time had been in the habit of doing. He therefore thought that Mr. Groves's paper was in the right direction. The surgeon could not know about the condition of such cases until the abdomen was opened; no one could promise to remove a pylorus until he had seen and handled it. He had three months ago seen an officer who had suffered great hardships in the South African war. For the last five years he had been a victim to dyspepsia, and for the previous three months he had washed his stomach out every day. He found in him a large lump occupying the upper part of the pylorus and extending a considerable way along the lesser curvature. That lump, he had no doubt, was carcinoma which had originated in the chronic inflammation of the stomach which had been going on for five years. He did for him the two-stage operation, which he regarded as by far the best, and in the cases he had done it he remarked that there seemed to be but little shock. He strongly advised a preliminary gastro-enterostomy and at the end of ten days pylorectomy. He did not think there was any risk of displacement or injury of the union between the jejunum and the stomach. After the pylorectomy there was a difficulty for some time in taking food, the reason for which probably was that the anterior support of the stomach was lost, and that in consequence there was some displacement of the gastro-jejunostomy opening. Examination of the lump by Mr. S. G. Shattock made it very doubtful whether it was carcinoma. All members must have known cases where the disease was found to be too extensive for any operation to be done, and the abdomen had to be closed and the patients left, and then they recovered. There seemed to be some strange condition, occurring rarely, in which an apparently malignant lump disappeared after the abdomen was opened.

The **President** asked whether it had been proved that there was a circulation downwards in the anterior layer of the great omentum and upwards in the posterior layer. Also was it really possible to peel off the great omentum from the anterior surface of the transverse colon and the upper surface of the transverse mesocolon and leave the serous surfaces behind, or whether when the great omentum was peeled off it left a raw surface, and whether on peeling off the transverse mesocolon one exposed the middle colic artery. Also, could Mr. Groves do that peeling off without making holes in the transverse mesocolon?

Mr. **Groves** replied on the discussion. He said that he took the best collected statistics he could find and presented them without expressing very definite views on the matter. The shortest interval in his cases between the two operations was seven days and the longest 28 days. The adhesions which had formed in that time from the first operation were negligible in regard to adding to the difficulty of the operation. Moreover, by the two-stage method the patient felt much better and was better able to stand the procedure. In the case where the great omentum was peeled off he did not think the operation took a bit longer, and it was not difficult except at the left-hand corner. There were many blood-vessels running from the gastro-epiploic vessels to the curvature of the stomach, but when separating back the great omentum one was working in a comparatively avascular area. He spoke with more diffidence in regard to removing the peritoneum from the base of the great omentum to the head of the pancreas. In the two cases he did he found no difficulty in stripping off the layer of peritoneum from the front of the transverse mesocolon, because he kept to the right of the middle colic artery. There was a strip which ran over the front of the head of the pancreas which contained a number of lymphatic vessels. He felt confident that the great omentum could be easily and quickly removed without danger, but he would not say it could be so certainly removed from the front of the head of the pancreas. He was surprised to hear the two secretaries refer to the statistics he put forward as if they were too rosy; he himself regarded them as gloomy. He gathered together the best statistics he could find, and he certainly thought the German figures were the least liable to error. He agreed that there might be room for doubt about the slide projected on the screen which had been discussed by Mr. Spencer and Mr. Hutchinson, and for that reason he asked two independent pathologists to examine the specimen and they both reported that there was no doubt as to its malignancy. Possibly the most instructive portion of the tissue had not been chosen for the purpose. If in the second case, which lived 18 months, he had kept to the left of the middle colic artery she might have been alive still. He now kept to the left of the middle colic artery. If the second operation was done at a not greater interval than ten days from the first there was no difficulty in carrying it out. In answer to the President, he did not know what physiological proof could be given as to the circulation in the great omentum, but Prussian blue had been found to travel from the stomach down the great omentum and into the vessels which looped back again to join the trunks which ran in front of the head of the pancreas.

SECTION OF ANÆSTHETICS.

Lymphatism.

An adjourned meeting of this section was held on Feb. 4th, Mr. R. Gill, the President, being in the chair.

Dr. E. **Farquhar Buzzard**, in resuming the discussion on Mr. Bellamy Gardner's paper on Lymphatism, drew attention to the analogy between lymphatism and myasthenia gravis. In both instances the patient might die suddenly. Although many of the myasthenic patients died from sudden cessation of the respiration only, there were others in whom the heart failed at the same time and with equal abruptness. Moreover, in more than 50 per cent. of the cases there was some enlargement of the thymus gland, while in addition clumps of lymphoid cells were found scattered through many of the tissues and organs of the body, especially in the muscles. Abnormalities of the spleen, thyroid gland, pituitary body, and liver had also been discovered in some instances, but the indictment of these organs had never been so severe as that of the thymus.

Dr. **Ralph Vincent** said that in his opinion the operation was a far more important factor in the causation of death in cases of lymphatism than was the anæsthetic. A mere digital examination of the naso-pharynx was very likely to bring on a convulsion in a child who was subject to convulsions, and an anæsthetic would act rather as a sedative; indeed, a deep anæsthesia should actually be a safeguard. The cause of the condition was an error in diet during infancy.

It was suggested that a committee should be formed, consisting of anæsthetists, pathologists, radiographers, and others, to collect evidence which might lead to some definite conclusions as to the causation, symptoms, and treatment of lymphatism and allied conditions.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A meeting of this section was held on Feb. 4th, Dr. **Dundas Grant**, the President, being in the chair.

Dr. H. J. **Davis** showed the following cases:—1. Foreign Body in the Lung. While a man, aged 53 years, was eating ox-tail soup a piece of bone slipped into the windpipe and found its way into the right lung. It set up pulmonary abscess and empyema; a rib was resected and the abscess was drained. Six weeks later, on coughing, the piece of bone was spat out. The patient, who was under the care of Dr. Seymour Taylor, eventually recovered. 2. Foreign Body in the Œsophagus. The patient was a soldier aged 30 years. A pin 1½ inches long slipped down his throat during sleep and became impacted in the œsophagus. It was grasped with forceps but could not be moved; œsophagoscopic examination was negative; the pin passed into the stomach and was vomited up the same night on recovery from the anæsthetic. 3. Laryngeal Vertigo in a man aged 47 years. Tickling began in the throat; he would then cough for five or ten minutes, become violently giddy, and fall to the ground insensible. The uvula had been removed flush with the palate with some benefit. Though a pipe-smoker, the mere smell of cigarette smoke brought on an attack at once.

Mr. **George Wilkinson** showed a photograph of an infant, 8 months old, in whom the Nose was Congenitally Deformed by a deep depression in the middle line below the nasal bones, with wide separation of the nostrils and flattening and broadening of the whole feature.

Mr. W. **Stuart-Low** showed a case of Lupus of the Nose, Hard Palate, Fauces, and Epiglottis in a girl, aged 10 years, the special feature being the early implication of the epiglottis.

The **President** showed a case in which a middle-aged man affected with pulmonary tuberculosis had also suffered from extensive tuberculosis of the larynx. The latter had been treated with the galvano-cautery. The punctures were made into an ulcer on the ventricular band and the infiltrated epiglottis and swollen band once every three or four weeks and gave immediate and increasing relief, so that almost complete dysphagia was gradually removed. Inhaling equal parts of anæsthesin and orthoform helped in this. Eventually all the ulceration and nearly all the infiltration disappeared.

Dr. **William H. Kelson** showed a case of Paresis of the Palate, Pharynx, and Œsophagus in a man aged 26 years.

Dr. **Dan Mackenzie** showed a case of Congenital Occlusion of the Left Posterior Choana in a girl aged 19 years. After a preliminary submucous resection as far as the vomer the case was treated by chiselling away the vaso-membranous diaphragm and enlarging with a burr to the normal calibre. The result was very good.

Dr. G. **William Hill** showed a case of Papillomatous Laryngeal Growth springing from the right cord and the floor of the ventricle; a similar growth had been removed 20 years ago from the same patient.

Dr. HILL also showed an Improved Œsophagoscopic Tube.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Saline Waters and the Use and Abuse of Common Salt.

A MEETING of this section was held on Jan. 27th, Dr. LEONARD WILLIAMS, the President, being in the chair.

Dr. R. ACKERLEY (Llandrindod Wells) read a paper on Saline Waters and the Use and Abuse of Common Salt. He said that the alleged necessity of taking common salt was disproved by the fact that in ancient and modern times large bodies of men did not take it. He instanced the Numidians and Egyptian priests in ancient times, more recently the North American Indians before they acquired European habits, the inhabitants of North Russia and Siberia, the Bedouins of Arabia, and others. Breast-fed infants obtained very little salt. The bulk of the common salt ingested by adults was added by the cook in the preparation of food for the table. Nearly all the common salt passed away from the body by the kidney. It was now admitted from the researches of Widal, Javal, and others, that when the kidneys were not healthy there was frequently considerable retention of common salt. Taken in excess it might prove harmful: (1) by throwing excessive work on the kidneys; (2) by increasing for many hours in the day the proportion of sodium salts in the fluids and tissues of the body; (3) by causing the retention of fluid in the body; and (4) by causing certain forms of diarrhœa, chronic bronchial and pharyngeal catarrh, and chronic skin diseases, when the kidneys were not able to excrete the salt ingested. Dr. Ackerley then considered the action of saline waters containing a small percentage of common salt, and contended that clinical evidence showed that hypotonic saline waters were not injurious in gouty conditions. This, he considered, was due to the fact that saline waters acted quite differently from salts added to and absorbed with food. He had no experience of hypertonic waters, but in the case of mixed mineral waters of low salinity like those at Llandrindod Wells he had failed to find any evidence that the gouty received anything but benefit from them.

Dr. ERNEST SOLLY (Harrogate) remarked that his own experience and that of his colleagues in Harrogate supported Dr. Ackerley's contention that an excess of salt absorbed was harmful, especially to the gouty, or to those whose eliminatory organs were at all defective. In administering the "strong sulphur water," which was very strongly charged with sodium chloride, it was always considered necessary to ensure free purgation even to the extent of frequently administering a "liver pill" over night, and all Harrogate practitioners were prepared to find trouble arising if the taking of the waters was not rapidly followed by free evacuation, the dehydrating action upon the blood and tissues being counteracted by the taking of a glass of one of the milder waters (whose salinity was about equal to "normal saline solution") during the forenoon, afternoon, or both.

The PRESIDENT, Dr. F. A. DE T. MOUILLOT, and Dr. G. E. HASLIP also took part in the discussion.

MEDICAL SOCIETY OF LONDON.

Hæmorrhage from an Unenlarged Uterus.—Removal of Part of Bladder Wall.

A MEETING of this society was held on Feb. 14th, Dr. SAMUEL WEST, the President, being in the chair.

Dr. VICTOR BONNEY read a paper on the Diagnosis and Treatment of Hæmorrhage from an Unenlarged Uterus, in the course of which he said that of the various drugs used for controlling uterine hæmorrhage ergot stood easily first. It was the only drug in the pharmacopœia of gynæcology the pharmaco-dynamics of which were accurately known. It was most efficacious in acid solution and combined with strychnine: ergot. liq. ♏30, liq. strychninæ ♏5, ac. hydrochlor. dil. ♏10. It might also be given as ergotin, but the solid preparations were not nearly so active as the solution. The beneficial effect of ergot on many forms of uterine hæmorrhage was undoubted, but it had been shown that its long-continued administration by producing arterial contraction threw an increased strain on the cardiac muscle. As the hearts of patients who had suffered from excessive uterine bleeding over a long period of time were often degenerate from the consequent anæmia, he would hold as axiomatic that rule: "Given a condition in which ergot if prescribed would have to be taken over a prolonged period then the use of the drug at all was contra-indicated." Hydrastis and hamamelis were sometimes useful adjuvants to the action of ergot or they might be successful when the latter had failed. He always gave them, like ergot, in acid solution and combined with strychnine. They did not give rise to the uterine contraction pain that sometimes caused patients to refuse to take ergot. Cannabin and hydrastinine were two active principles and in combination with ergotin sometimes gave satisfactory results. Dr. Bonney had used bryony and gossypiin and could speak well of the first, not so much from the point of hæmostasis, but because he found it did relieve certain forms of unexplainable pelvic pain. These were the drugs at their command. In what circumstances should they be used? In general, he thought it might be said that they were indicated when no gross pathological lesion was judged to be the cause of the bleeding. Their use where definite organic disease was present was more limited. In that connexion he thought ergot might beneficially affect a uterus congested from endometrial inflammation and in the slighter degrees of that disorder it might be given a trial before resorting to operative measures. If curettage became a necessity ergot was given with advantage during the convalescence from the operation. With regard to the use of styptic drugs in the treatment of uterine myomata he was of opinion that those tumours when giving rise to symptoms should be removed. Where, however, a patient declined operation ergot and its associated group of drugs would have to be employed. In all other cases of organic disease of the uterus operative measures and not drugs were indicated.

Dr. LEWERS read a paper on a case of Panhysterectomy for Carcinoma of the Body of the Uterus, in which an infiltrated portion of the bladder was removed.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on Feb. 10th, Mr. G. HARTRIDGE being in the chair.

Mr. J. B. LAWFORD showed a case of Optic Atrophy and Oculo-motor Palsy due to Intracranial New Growth. It was one of a small group of cases of pressure atrophy, with failure of vision, which began in the left eye, then came on in the other, resulting in complete blindness. There was no history of causation. X ray examination showed erosion of bone; the sella turcica was destroyed, and its cavity extended back to the basilar process of the occipital bone. There was now evidence of the extension of the neoplasm into the orbits and the nose; the patient had lost the sense of smell, his voice was nasal, and there was oculo-motor palsy. There was some headache, but no sickness. The growth must be in close contact with or near the pons. There was no gigantism or acromegaly, nor undue deposit of fat. Its nature might be sarcoma or endothelioma; he did not think it was gummatous, and the man had not derived benefit from antisyphilitic remedies. The only effect of thyroid extract was to reduce the rapidity of the pulse and faintness.—Mr. W. H. H. JESSOP reminded the society of two almost similar cases which he had had; one in a lady 52 years of age, whose symptoms started with some retro-bulbar neuritis; the other case in a young man aged 22 years.—Mr. R. W. DOYNE also mentioned a case in which the eye, which was blind, presented no affection of the disc. In the other eye optic neuritis was well marked.—Mr. LESLIE PATON said he saw Mr. Jessop's case before it was operated upon, and in a case on which Sir William Gowers lectured he (Mr. Paton) cut sections of the disc of both eyes and found a growth which pressed very definitely on one optic nerve. There was no neuritis in the eye which was blind, and vision in the other eye was 6/6. He said there was a possibility that the blindness in so-called optic neuritis was not due to any œdematous process in the nerve itself, but to a normal pressure atrophy. —Mr. LAWFORD, in reply, said that Mr. Jessop's cases did not seem to be median growths affecting both eyes.

Mr. LAWFORD showed a drawing of Episcleral Tubercle.—Mr. JESSOP commented on the rarity of such cases.

Mr. E. TREACHER COLLINS showed a case of Lenticonus Posterior with Opaque Membrane behind the Lens. He discussed the varieties of the condition, and expressed the opinion that the present case was a congenital one. Behind the lens was an opaque membrane, and instead of taking the normal curvature it was depressed into a cone shape.

Dr. F. W. EDRIDGE-GREEN showed and demonstrated a New Form of Lantern for Testing Colour Perception, which had now been accepted by the Admiralty. It gave a brighter light than the others, and could be regulated to imitate signals at various distances.

Mr. N. BISHOP HARMAN showed cases from families with Hereditary Anterior and Posterior Cataract; also a Posterior Lens Defect (?) Lenticonus, and a case of Irido-cyclitis with Gross Keratitis Punctata, in which the reaction test by the Wassermann was positive.—Mr. HARTRIDGE, discussing the last-mentioned case, said but for that reaction anyone looking at it would have taken it for tubercle.—Mr. DOYNE, Mr. RAYNER BATTEN, Mr. TREACHER COLLINS, Mr. M. S. MAYOU, and Mr. C. S. BLAIR discussed the cases, the last-named protesting against the term "posterior lenticonus" being applied, as there was no projection of the posterior pole in the cases.

Mr. A. C. HUDSON showed an unusual form of Retinal Disease in a boy, aged 9 years, who had 6/6 vision, with full fields. When a month old the patient had a severe illness, in which he was unconscious, and two years later he had whooping-cough. In the eye there was some white mottling with white granular material, which seemed to be deep to the retinal vessels; it was chiefly in the macular region. He thought it likely that the condition was due to sub-retinal hæmorrhage.—Mr. ARNOLD LAWSON discussed the case, mentioning a boy with a similar condition in whom it was definitely due to hæmorrhage; nearly all the hæmorrhages were situated in the deeper layers of the retina, and in one or two instances the vessels seemed to be buried.

Mr. E. W. BREWERTON showed a case of Bilateral Parotitis and Cyclitis, which he believed to be due to some general toxæmia, though he had not been able to find the source of infection.—Mr. P. E. H. ADAMS (Oxford) said that in some cases of the condition which he had described he found the infection was from the mouth, the patients having pyorrhœa alveolaris. One patient was aged 20 years and the other 56 years, and in both cases there was keratitis punctata. The eye condition subsided simultaneously with the parotitis.

Mr. R. FOSTER MOORE showed a case of Hole in the Macula. The vision was 6/5.—Mr. M. L. HEPBURN discussed the case, remarking on the sharply cut circular margin in both eyes, and he expressed the view that the other eye was already in an earlier stage of the same condition. It might be in the nature of an infarct in the choroidal blood-supply. —Mr. J. H. FISHER thought it improbable that there would be an infarct in the identical pole in each eye.

Mr. LESLIE PATON showed a case of Connective Tissue Formation on the Disc, and raised the question whether it was congenital in nature. The history was indefinite, as the parents had only noticed a defect in sight three years before. —Mr. HARTRIDGE thought it was probably congenital, that it might have resulted from inflammation during intra-uterine life.—Mr. DOYNE reminded members of a case he showed in an active stage, throwing out greyish tissue towards the retina.—Mr. TREACHER COLLINS thought the cystic-looking body was due to distension of the sheath of the central hyaloid artery, and that the white mass on the inner side was some abnormal development of fibrous tissue in the vitreous, such as was found in congenitally defective eyes.

Mr. C. A. WORTH showed (per Mr. HARMAN) a case of Granuloma (?) of Conjunctiva.

Mr. R. E. BICKERTON showed an Electrical Method of Rotating a Testing Block in place of Cords.

Mr. J. H. TOMLINSON showed a new form of Gouge for Extracting Foreign Bodies.

Mr. LAWSON showed a Swelling around the Optic Disc of doubtful nature.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Fibroid Myoma.—The Teaching of Midwifery.

A MEETING of this section was held on Jan. 14th, Dr. HENRY JELLETT, the President, being in the chair.

Professor ALFRED J. SMITH exhibited specimens of Fibroid Myoma of the Entire Uterus and of Calcified Fibromyoma.

Dr. FREDERICK W. KIDD read a paper entitled "Some Hints and Suggestions on the Teaching of Midwifery and Gynæcology."

Professor SMITH said he had recently taken up an American journal, which, in indicating the correct course for a student to learn midwifery, did not indicate the method of Vienna or Berlin, but of Dublin. They should try to realise the importance which was attached to anything that went forth from the Dublin school, and therefore strive to keep up their standard. The great claim of the Dublin school was that it was essentially practical. The main trend of midwifery examination was to educate the sense of touch so that they could realise the factors present in a case. They had in Dublin ample opportunities in the big maternities for such education. He was an advocate of the three months' system, but it must be a full three months. He believed in a clinical examination in gynæcology, but he did not think they would get much farther forward by a clinical examination in midwifery. Gynæcology and midwifery should not be taught together, but in separate three months' courses.

Dr. RICHARD D. PUREFOY said that the practice of note-taking by students had not been developed as it should be. The accurate description of a case which would give a realistic picture of the main features of a case to a person who had not seen it was very often a matter of considerable difficulty. He thought the change to three months was most unfortunate, as it might lead students to estimate the importance of the subject by the time given to the study, and would make it practically impossible to provide the necessary material for enabling students to qualify for a certificate. He was strongly of opinion that the clinical examination in midwifery would be improved. The more the students practised palpation and educated the sense of touch, the more advantage they would derive in other departments of their profession.

Dr. A. DEMPSEY said that note-taking in a certain number of cases ought to be made obligatory. Even without its being compulsory students could be got to take notes much better if the physicians in charge would show more attention to the notes that had been taken. He thought that the fact that classes would be smaller in a three months' course, and that students would, therefore, have greater opportunities for becoming acquainted with the work, was a point in favour of the short course.

The PRESIDENT said that the reputation of the Dublin school was one of the greatest in Europe, but some things in connexion with it required stringent treatment. Professor Smith did not really want to alter the period of midwifery and gynæcological training to three months, but to make it two periods of three months each. The suggestion permitted the student to make use of the very large amount of material to be found in general hospitals, and it increased his opportunities of acquiring a practical knowledge of gynæcology. The difficulty was how to combine general and special hospital work in a single course. They were unanimous as to lectures preceding practice; but if a man who did not satisfy his examiner had to be put back his whole course would be impeded. He thought that in the teaching of gynæcology diagnosis should come first; it was the most important thing for a general practitioner with limited opportunities. Next to diagnosis came the indications for treatment, and the teaching of the treatment itself came last of all, as there were few gynæcological conditions that could be treated satisfactorily in general practice.

Dr. MICHAEL J. GIBSON, Dr. BETHEL SOLOMONS, Dr. WM. PEARSON, and Dr. J. SPENCER SHEILL also spoke.

LIVERPOOL MEDICAL INSTITUTION.—A pathological meeting of this society was held on Feb. 3rd, Dr. Thomas R. Bradshaw, the President, being in the chair.—Mr. George P. Newbolt and Dr. D. M. Alexander showed two cases of Pylorectomy for Carcinoma of the Pylorus; in the one the growth was colloid, while in the other it started at the edge of a deep ulcer.—Mr. W. Thelwall Thomas and Dr. William W. Mackarell showed specimens of: (1) Adenoma of the Breast removed from a patient aged 27 years, with "colloid" degeneration of the intracystic growths; (2) Chondro-sarcoma of the Femur from a girl aged 17 years, which had commenced in the internal condyle and contained giant and spindle cells and much cartilage; and (3) a section of Undescended Testicle to demonstrate the atrophic character of the epithelium and to emphasise the need for the removal of such structures.—Mr. F. A. G. Jeans showed the Wall of an Old Hydrocele which closely resembled a giant-celled sarcoma.—Mr. Frank T. Paul showed a Malignant Tumour growing from an improperly removed sebaceous cyst in a man aged 43 years.—Dr. R. J. M. Buchanan read a note on Syphilis of the Heart. After classifying the clinical varieties of cardiac syphilis, he said that valvular lesions with their accompanying murmurs were the least important feature, and that alterations in rhythm, anginal attacks, and toneless sounds were more often present, these with signs of alteration in size. When there was a history of syphilis in cases of heart disease anti-syphilitic treatment should be pushed to the limit of tolerance, accompanied by the ordinary measures for combating heart failure. Even albuminuria and dropsy were no contra-indication to the use of mercury. An illustrative case was described in which at the necropsy the heart was found to weigh 2½ pounds; there were no murmurs and the sounds were so distant and fœtal in character as to justify the term "silent or whispering heart." The patient died suddenly. The heart was studded with gummata, one of which encircled the right auriculo-ventricular orifice; all the valves were healthy; the endocardium and pericardium were much affected and there were marked myocarditis and endoarteritis, but the orifices of the coronary vessels were free. There were no other signs of visceral syphilis, but there were old nodes on the tibiæ.—The President said that in his experience the commonest seat of syphilitic lesions of the heart was the aortic valves. He thought that the danger of the use of mercury had been exaggerated; in fact, he had known chronic albuminuria to disappear under its administration.—Dr. J. Hill Abram said that he could not accept the view that the "silent heart" meant a syphilitic lesion; this simply indicated muscular weakness. Mercury was extremely useful in cases with a definite rheumatic causation, and not only in syphilitic lesions of the heart, but when definite signs of nephritis were present he thought that mercury was contra-indicated.——A general meeting of the society was held on Feb. 10th, the President being in the chair.—Dr. Thomas Bushby read notes of two cases of Prostration following Seasickness. The prostrate condition persisted after landing; in both cases acetone and diacetic acid were present in the urine. Treatment was directed to the relief of the acetonæmia and speedy recovery followed. Dr. Bushby suggested that if the acetone bodies could be credited with a share in the causation of continued prostration and nausea in cases such as he had related it was also probable that they might play an important rôle in the etiology of prolonged sea-sickness.—Mr. Colin Campbell related the case of a man, aged 21 years, suffering from Bronchiectasis and treated by the intratracheal method. Difficulties in the way of treatment were that the patient had subluxation of the jaw and was tongue-tied. He also suffered from vomiting of a dense ropy mucus caused by swallowing putrid sputum. Treatment was commenced in November, 1908, and from then till now he had had 4 ounces of a 10 per cent. solution of izal in glycerine. For the past four months there had been no fœtor. The discharge had diminished from 30 ounces daily to a dozen small expectorations. The chest expansion had increased from 1 to 3 inches, and he could now run 600 yards in two minutes. A cast of the hand showing osteo-arthropathy and a radiogram of the lungs were exhibited.—Sir James Barr spoke from personal observation of the efficiency with which Mr. Campbell carried out this special form of treatment.—Mr. F. T. Paul reported two cases of Malignant Stricture of the Ileum in men, aged 63 and 58 years respectively. The first was too advanced for excision, and the bowel was short-circuited. The second was excised and the bowel was joined end to end; both recovered well. The growth was a small-celled carcinoma.—Mr. Paul also described three cases of Villous Tumours of the Bladder. He advocated early and thorough operation for these cases and referred to the necessity of subsequent cystoscopic examination to watch for possible recurrence which should be dealt with promptly.—Dr. Henry Briggs reported the completely successful treatment of a Villous Growth of the Bladder in a spinster, aged 68 years, by suprapubic cystotomy and excision of the growth; the patient lived nine years after the operation and died from cerebral apoplexy. Under the base of the tumour three-eighths of an inch of the ureter were removed in the bladder wall.—Dr. Briggs also exhibited an Extensive Villous Growth treated by removal of the whole bladder per vaginam and the implantation of the ureters in the vaginal roof. The patient, who was 58 years of age, lived for 22 months and died from "surgical kidneys." Dr. Briggs was doubtful if this treatment was to be commended.—Mr. George P. Newbolt said that he had treated several cases in the advanced stages of the disease, and in one instance had removed eight ounces of growth from the bladder. This gave relief for some years, but the patient died from hæmorrhage.

Medico-Chirurgical Society of Glasgow.—A meeting of this society was held on Jan. 14th, Professor Robert Muir, the President, being in the chair.—Professor Noel Paton delivered an address entitled "The Significance of Certain Changes in the Composition of the Urine." He said that when abnormal constituents such as sugar and albumin made their appearance in the urine their significance was fully recognised by the physician, but that the meaning of quantitative changes in the normal constituents was not yet properly appreciated. He then proceeded to consider these changes, especially alterations in the distribution of the nitrogen in the urine. The urinary nitrogen, derived as it was from the protein of the food and body, was normally distributed as follows: about 90 per cent. in urea, 4 per cent. in ammonia compounds, 4 per cent. in creatin and creatinin, and 2 per cent. in the purin bodies (uric acid, &c.). As to the mode of formation of these nitrogenous bodies from the protein, experiment showed that protein subjected to the action of a mineral acid could be broken down into various substances which differed according to the method of breaking down employed. In the analogous breaking down of protein in the body the first step was denitrisation; ammonia was split off and went to form ammonia salts. These dehydrated in the liver and the resulting product was urea. Most of the nitrogen of the protein went to form mon-amino acids, but di-amino acids were also formed. The arginin compounds were denitrified, forming ammonium carbonate, which was dehydrated to form urea. Creatin in muscle, on the other hand, was dehydrated to form creatinin, which appeared as such in the urine. The purin bodies were derived (1) in muscle as xanthin, (2) from nucleins as amino compounds such as adenin. Professor Paton discussed the conversion of these bodies into uric acid and the further fate of that substance. The fate of the benzene compounds was considered specially in relation to alkaptonuria and to their combination with sulphur, and the appearance of non-oxidised sulphur in cystine was explained.

Nottingham Medico-Chirurgical Society.—A meeting of this society was held on Feb. 2nd, Dr. Adam Fulton, the President, being in the chair.—Dr. William Tibbles read a paper entitled "The Bacterial Disturbances of Digestion and the Consequences thereof." He first sketched the normal process of digestion and showed how carbohydrates were converted into dextrose, lævulose, and galactose, fats into fatty acids and soaps, and proteins into amino-acids, the latter being reconverted in the intestinal mucous membrane into proteins. He said that bacteria played a great part in digestion, breaking down complex bodies into simpler substances; putrefactive organisms split proteins into amino-acids, aromatic bodies, purin bodies, ptomaines, and ammonia compounds. Many of these set up a train of morbid symptoms and ultimately organic disease, and it was chiefly due to antagonism of these poisons that auto-intoxication was not constantly present. In disease bacteria in the alimentary canal produced (1) gases and acids and (2) alkaloids, the first causing flatulence and acidity, and the second auto-intoxication. In treating flatulence and acidity all carbohydrates should be withheld for two or three days, meat and vegetables being given. Rice, sago, tapioca, and arrow-root, with stewed fruit should then be gradually added, and finally bread and potatoes. The best medicine was a mixture containing hydrochloric acid to promote the formation of gastric juice. The chief considerations in treating bacterial disturbances of digestion were: (1) that the food should be free from undesirable organisms; (2) that it should not favour bacterial action; (3) that it should be moderate in quantity, especially as regards animal food; and (4) that the carbohydrates should be cut down. Drug treatment consisted in the use of aperients, cholagogues, and intestinal antiseptics, and sour milk should be added to the diet.

Brighton and Sussex Medico-Chirurgical Society.—A meeting of this society was held on Feb. 3rd, Mr. G. Morgan being in the chair.—Dr. Charles F. Bailey showed a case of Capillary Nævus of the Forehead in an Infant treated by refrigeration with solid carbon dioxide. He also showed a woman with progressive muscular atrophy, whose hand movements were distinctly benefited after treatment by potassium iodide and high-frequency currents.—Dr. Walter Broadbent showed a case of Stokes-Adams Disease. The symptoms included a pulse-rate of about 30 and syncopal attacks. In tracings from the veins of the neck the auricular waves were quite independent of the ventricular waves, and were more than twice as numerous, being 70 to the minute.—Mr. H. N. Fletcher read a paper on Ectopic Gestation, referring especially to its early occurrence in the tube. Stress was laid on the fact that the ovum was primarily intramural, and that when rupture occurred it was either inwards into the lumen of its tube or outwards into the peritoneal cavity or broad ligament. He pointed out that the former was the most frequent ending of pregnancy in the wide ampullary portion of the tube, and the latter almost the rule in the narrower isthmic and interstitial portions. Out of 25 cases on which the paper was based, 16 were cases of tubal abortion, 6 of them "complete," i.e., with the extrusion of the entire ovum through the ostium abdominale into the peritoneal cavity, and 10 were "incomplete," i.e., with the whole or a portion of the ovum retained in the tube. Rupture was nearly always early. In 13 out of 16 it was at five weeks or under. Of the 9 cases of rupture outwards, 5 were into the peritoneal cavity, and 4 into the broad ligament. There were no fatalities in the series.

Reviews and Notices of Books.

Modern Problems in Psychiatry. By Ernesto Lugaro. Translated by David Orr, M.D. Edin., and R. G. Rows, M.D. Lond. With a Foreword by T. S. Clouston, M.D. Edin., LL.D. Manchester: At the University Press. 1909. Pp. 305. Price 7*s.* 6*d.*

The task of the investigating scientist becomes increasingly difficult. The more research work that is done the greater is the need for the verification of that which has already been recorded, and the plane upon which any given piece of work is carried on depends upon an investigation into the security of the planes below. The investigator is therefore at the outset confronted with problems which are in many instances off the immediate line of his work, and for the solution of which he is fitted neither by temperament nor by training. To these problems he may well, through ignorance, devote a disproportionate amount of attention, sometimes too much and sometimes too little. Indeed, there is considerable danger that the more complex problems may apparently be approached along a path paved with bed-rock facts which a succeeding generation recognises as no path at all, but as a dangerous area of shifting sands. The study of the literature of a generation or two back shows this to demonstration. So vast has become the range of human effort that only a most exceptional intellect can grasp the value of a few of the problems that confront us and can coördinate from the various sciences the facts which bear upon some particular inquiry. In no branch of science are these difficulties perhaps more clear than in psychiatry. The study of mental disease involves the most intricate problems, chemical, physical, anatomical, physiological, medical, and sociological, while it involves further a certain knowledge of the humanities, without which our Science becomes sterile at the point where our Art begins. Professor Lugaro with truth points out that the alienist must, so far as in him lies, take an active part in work developing in neighbouring fields of research in order to further progress in his own. This justifies the many-sided activity which young alienists display at the present time, and which carries with it sometimes the reproach of studying everything except psychiatry, of analysing everything save the patient. On the other hand, our author points to the danger which lurks in certain forms of research. Researches into the chemical modifications of the urine, of the blood, or into the alterations in material exchange have provided us with an abundant literature, but many works of this sort are truly documents of sesquipedalian ignorance. The complexity of the questions which are being investigated, the uncertainty of the clinical criteria, the difficulties of the special technique, and the lack of the necessary technical skill on the part of the observers have led to but few conclusions of any value. Much of the work must be done again.

Professor Lugaro does not, in the present treatise, set himself to give a full exposition of the state of modern psychiatry, but rather attempts, to use his own words, to point out the practical programme for the tasks of to-day and to give some hint regarding the programme of to-morrow. With this view his book contains special chapters upon the problems of psychology, of the anatomy of the nervous system, and of pathogenesis, etiology, and nosology, as well as upon such practical matters as treatment and prophylaxis. Each chapter forms a brief abstract of such knowledge as we possess, together with suggestions as to the lines upon which research might be most advantageously prosecuted. In the chapter upon Psychological Problems the author deals with the conception of determinism, psycho-physical parallelism, and with the theories of current metaphysics. He rejects as illusory traditional solutions such as those of *materialistic monism*, *idealistic monism*, *dualism*, or *scepticism*, and, indeed, denies the legitimacy of the metaphysical problem altogether. His position is that philosophy, extricating itself from the vicious circle of metaphysical doctrines, should aim at developing the conception of a pure realism. This realism, which is based on experience and refuses to acknowledge metaphysics, neither can nor should differ essentially from the primitive realism which is common to man and to the higher animals, and which is the spontaneous product of the normal development of intelligence—a realism rendered more and more intelligible and more profound by a minute analysis of psychic processes, more perfect by a criticism based on knowledge and its mechanism, and carried to a greater precision in its practical conclusions by being made to depend upon a greater number of experiences. According to this realism experience coincides with consciousness, and the existence of a reality outside consciousness is a pure hypothesis. But it is the most legitimate of all hypotheses, because there is no experience which does not support it, and there is none which contradicts it. Moreover, it is a necessary hypothesis, and its application is as universal as the products of experience are constant. It, therefore, not only imposes itself on consciousness, but its negation is inconceivable. It may be said that this is, after all, a metaphysical hypothesis because it recognises a hypothetical reality outside experience. Nevertheless, it does not seek to penetrate into the intrinsic nature of this reality; to accomplish this is the brave aspiration of the metaphysical hypotheses which are examined and rejected. Psycho-physical parallelism must be regarded as a simple result of experience and not as a principle which necessarily implies adhesion to metaphysical doctrines.

In the chapter on the Problems of Anatomy it is shown how, on the one hand, psychiatry requires normal anatomical data, without which neither the normal nor the pathological mechanism of psychic phenomena can be made clear, and, on the other hand, it demands objective demonstration of the changes in nutrition which affect the nerve elements and which depend on causes analogous to those usually injurious to the integrity of any other organ. Modern pathology has revealed that connective tissues possess much more important functions than the name would tend to imply. In the chemical interchange of the normal organism, in defence against external and internal toxins and micro-organisms, the connective elements perform functions of the highest importance. The hypothesis that the rôle of neuroglia is merely passive is evidently defective. Etiological problems in psychiatry are likely to form a promising field for research, but one scarcely yet occupied, so arduous are the inquiries to be faced. The causes of mental disease do not apparently essentially differ from the causes of other diseases, but the connexion between the morbid cause and the cerebral lesion is very difficult to trace because of the complexity of the mechanism by which it reaches the brain. In the past too much importance has been attached to the so-called psychic causes, but more recently the internal factor has been so much exaggerated that it has appeared as though the external cause was simply an incident which revealed a fatal predestination. If our observations are extended so as to include not only the patient's organisation but also the organisations of his ancestors, it would appear that an anomaly is the result of the marked effects produced by an external cause which has acted on it directly or through the organism of a progenitor during development.

On the vexed question of dementia præcox Professor Lugaro suggests that under this term is included a collection of closely allied psychopathic syndromes based on very similar anatomical changes; that it depends on systemic and selective lesions of cortical neurons, which, however, do not absolutely correspond either in extent or degree; and that the predisposition is not of the same importance in all cases, and often requires the coöperation of endogenous and exogenous causes of different nature and efficacy.

Professor Lugaro is to be congratulated upon the masterly and judicious survey of his subject which he has given to the world in this work. Not only have we a succinct and clear exposition of the present state of our knowledge, but we are confronted with a tale of the inexhaustible work that lies before us. The efforts of the individual worker or generation of workers seem to count for nothing when that which has been done is compared with that which there is yet to do. Our author remains, nevertheless, confident that while the joy of research will be without end, research itself will have no other aim than to constantly go on increasing that complex of positive ideas by means of which man, more and more every day, asserts his dominion over nature.

The translation appears to us to be well done and there is but little internal evidence that the work was not originally in English.

The Family and the Nation: A Study in Natural Inheritance and Social Responsibility. By WILLIAM C. DAMPIER WHETHAM and CATHERINE DURNING WHETHAM. London: Longmans, Green, and Co. 1909. Price 7*s.* 6*d.* net.

AMONG the words of Jesus, the son of Sirach, we find, "Desire not a multitude of unprofitable children, for from one that hath understanding shall a city be peopled." The lesson of this book is that our cities are being peopled from the unprofitable.

The study of heredity is difficult; it demands a certain mathematical quality of mind, a knowledge of biology, and some acquaintance with psychology, while its literature has, alas, been overlaid with technical verbiage and far-fetched phrases. "The Family and the Nation" presents a broad, and yet concise, summary of modern thought and work on this subject, which is sound, judicial, and yet easy of perusal. Such an exposition is at this moment of the highest value, for there exists to-day a disquieting tendency on the part of social reformers and doctrinaire political leaders to revert to views upon the equality of mankind inculcated by the encyclopædists and perpetuated by the individualists of the later nineteenth century, though opposed to the developments of psychology. The platform orator is fond of assuring modern audiences that all infants are of equal value if they were given equal chances in life. It is not true: ability is hereditary as surely as wealth often is, though in neither case can the great influence of environment be denied or belittled. The scientific study of heredity is only just beginning: the scientific breeder of animals has only been at work for a century. The patient labours of Mendel have only been dragged into daylight in the last few years, and Galton's great work, which proves the transmission of ability, lay for 40 years unnoticed. The examination of the influences tending to favour the growth of the more suitable strains of the human race has been exalted by Sir Francis Galton into a real science. In the laboratory bearing Galton's name Professor Karl Pearson and his assistants are laying down stores for the study of mankind from this point of view, and from no class in our social scheme could more material aid be obtained than from practitioners of medicine, who are now gaining a ground knowledge of the subject and who, in time soon to come, will acquire the complete familiarity necessitated by the demands of other official duties.

In no other university yet save that of London is there any systematic provision for the study of heredity, though in Cambridge, as this valuable book abundantly shows, important lines of thought have been followed under the direction of Professor Bateson, Professor Punnett, and others. Between Mendel with his simple mathematical conception of heredity and Galton the statistician there is a wide range of writers, each with his own field and point of view. To collate Darwin, Mendel, Galton, Weismann, Nägeli, and de Vries is no easy task, but if we are to gain any conception of the problem of variation in man it is essential to grasp the simpler problem as presented in plants and lower animals: Mendel's peas, Biffen's wheat, Bateson's Andalusian fowls, Professor Cossar Ewart's zebras, all provide their quota of evidence. This multifold influence of variation and heredity is dissected with great skill in the volume before us. The analysis leads to an excellent understanding of Sir Francis Galton's work, and to a complete acquiescence in the irrefutable arguments in proof of the inheritance of ability. Galton has taken nearly all his evidence from modern periods; he has traced the relations of all the judges of England for two centuries; has sifted the peerage; followed the families of the statesmen of the eighteenth century; and cited through many chapters the origin, descendants, and collaterals of painters, poets, soldiers, divines, and men of science. There were years of patient labour, and much close and careful reasoning is required before he reached the final chapter of hereditary genius which deals with its generalisation, the influences which affect the natural ability of nations. Here Mr. and Mrs. Whetham pick up Galton's thread and lead us into new ground, the birth-rate of the civilised nations of to-day.

The birth-rate shows that the average number of children in the great mass of the more successful part of the nation has fallen below one-half its value of 40 years ago. "The landed gentry, the more eminent of official, professional and commercial classes show the same result, while it extends equally to the thrifty and provident skilled artizans." It has persistently been claimed that love of ease and pleasure is the motive which leaves the cradle empty, but the more prosperous, provident artizans have never shown any objection to "Scorn delights and live laborious days." None the less the birth-rate of the country has dropped, and this national loss is a graver one than some even thoughtful people perceive, though the solatium to industrious fathers of families, offered as a rebate under Schedule D in the Budget still before Parliament, indicates that the seriousness of the matter has attracted the notice of the Chancellor of the Exchequer. But if the failure in offspring of the upper working classes is a subject of disquietude the same reduction in the ranks of the intellectual workers is of far greater moment. Skilled artisans can be evolved in one generation, but the data afforded by Mr. and Mrs. Whetham go to show that the loss which has been already incurred by the nation in hereditary intellectual output is irreparable for a century at least. The mental ability of some men, in the mathematical estimation of certain Cambridge *savants*, must be reckoned as a hundred times the average, and if this element of a people dies down in numbers more than the rest it will soon cease to exercise a dominant influence on the whole. It is common knowledge that in all civilised European countries the relative birth-rate has steadily diminished in proportion to the population. In England, France, and Belgium the ebb began about 1875, in Germany about 1890 or 1895, but even now the relative birth-rates of Germany and Great Britain are 33 and 26 per 1000. In all countries the restriction of births affects first the more intellectual sections of the nation, but the returns of birth among the members of the leading friendly societies, as sifted by Mr. Sidney Webb, show that the rate of reproduction among the higher artisans, the aristocracy of labour, has declined by more than half in 23 years. If to this be added that some of our defectives are relatively extremely fertile, the danger to the State will be seen to be increasing in a ratio far greater than that of arithmetical progression. With an almost stationary population "one generation of the more successful classes has halved in number, while the unsuccessful have continued to increase. The relative burden of incompetence carried by the nation is heavier, and judged by the returns of pauperism and insanity, tends to increase yet more." This is the statement of Mr. and Mrs. Whetham, and to a great extent it cannot be resisted.

As to remedy, we find little of hope in the volume before us. Hints as to the education of public opinion, suggested legislation for the segregation of the feeble-minded, appear to sum up the weapons before us. There is a great despair about the authors' final chapter. We have destroyed natural selection of the old sort, red in tooth and claw. There is no doubt of it, and medicine must accept a large responsibility. It is not our duty to offer attempts at a solution of a problem which concerns the constructive politician. He must probably be allowed time for his problem. The views of these authors will not meet with acceptance in some political quarters, but they are the expressions of the scientific economist, rather than the party politician. On p. 194 they say: "The rearing and education of children, in a fashion appropriate to the positions they are capable of occupying, is a matter of primary importance to the State at all times, and particularly at the present day. The cost rises rapidly with the importance and responsibilities of the careers for which the children are fitted." In the matter of education there is none which is longer or more costly than our own, the career of medicine. The authors continue: "As far as expense is responsible for the declining birth-rate of the best stocks it is certain that exemption from income-tax of all moneys spent in any rank of life on the maintenance and education of children would in the end greatly benefit the one real source of national credit, the composition and character of the life of the people. It would be well, too, that the graduation of death-duties should be transferred to the taxes on legacies. It is the amount a man receives, not the sum his father leaves, that should be taken as the basis. A fortune divided among ten children should be taxed less than one that goes to an only son or daughter."

All the more civilised countries of Europe, excepting England, are provided by their Governments with machinery which furnishes at the cheapest rates the opportunities for technical training in the higher branches of intellectual knowledge. England has little, almost no such machinery. We are dependent upon the accumulated property of the intellectual classes as a national fund from which reserves of intellectual power are in each generation to be drawn. Until some such national provision as other countries possess is made, and, indeed, for at least a generation after such provision is made on a scale good in form and adequate for our requirements, the infertility of the more intellectual classes is a great source of risk. Taxation which falls unduly on those classes may provide a bare existence for the least effective types, enabling them to multiply in unrestrained numbers, and so to inflict upon the nation an error of development from which it will take centuries to recover.

Even if our readers do not all see eye to eye with Mr. and Mrs. Whetham, particularly on the points of contact of their subject with practical politics, we think that they will find in this volume a valuable and trustworthy guide to an important and interesting branch of thought, one of especial interest to the members of our profession.

Tuberculosis. A Treatise by American Authors on its Etiology, Pathology, Frequency, Semeiology, Diagnosis, Prognosis, Prevention, and Treatment. Edited by ARNOLD C. KLEBS, M.D. Illustrated. London: D. Appleton and Co. 1909. Pp. 939. Price 25*s*.

THE editor states in his preface that a continuous and systematic discussion of the whole subject of tuberculosis, in all those phases of interest and value to the practitioner, by a single author has become an impossibility. In view of the enormous literature—nearly 3000 publications of 1908 alone have been collected in Dr. Klebs's office—the task of sifting the important from the unimportant could only be undertaken by those able to devote much time exclusively to one distinct phase; therefore several authorities were invited to take part in producing this volume. Each chapter deals with a distinct part of the subject, and is written by an author whose particular familiarity with the subject-matter is well recognised. Although the fullest attention had been paid to the fundamental work done in other countries, it is but natural that in an American treatise a full consideration is afforded to work carried out in that country. The completeness with which the work has been performed is indicated by the "addenda" at the end of some of the chapters, containing a summary of the principal communications presented at the International Congress on Tuberculosis held at Washington in 1908.

A full account of the tubercle bacillus is given by Dr. M. P. Ravenel (Madison, Wisconsin). The modes of invasion are discussed at length, and stress is laid upon the evidence now at hand, and constantly accumulating, in regard to infection by means of the alimentary tract. It is rightly pointed out that in children especially it occupies a position almost, if not quite, as important as respiratory infection. Dr. Ravenel remarks that it must not be understood that the source of such infection is always food. He thinks that dust which reaches the upper air-passages and mouth is constantly swallowed with the saliva and nasal secretion, and so bacilli may enter in this way. The frequency with which the bovine tubercle bacillus has been found in children shows, however, that food is often responsible for the infection. The possible infection of food and drink by tuberculous persons is not touched upon, and such a source of possible danger has scarcely received the attention which it merits.

The morbid anatomy of tuberculosis, more particularly of the pulmonary variety, is considered by Dr. Ludvig Hektoen (Chicago). He draws attention to "fibroid, quiescent, and healed tuberculosis of the lungs," and remarks that anatomically areas of healed tuberculosis most often appear as slaty indurations, usually apical and subpleural, flat or nodular, and inclosing small calcareous masses, fibroid tubercles perhaps being present in the adjacent tissue. He mentions, however, that mere slaty indurations are not sure signs of healed tubercle, as they may arise from inhaled dust, in the healing of infarcts, and after non-tuberculous pneumonia. Dr. E. R. Baldwin (Saranac) is responsible for a contribution on Resistance, Predisposition, and Immunity. The subject of immunity is carefully analysed, and attention is particularly drawn to the leucocytes and lymphoid tissue as being subject to changes during the "immunisation" process, by which a more vigorous defence is presented to invading bacilli. He concludes his remarks with the following summary: "The biologic processes of specific immunity against tuberculosis are at least twofold: (*a*) a bacteriolytic function, involving in all probability agglutinating and opsonifying action by the serum; (*b*) a toxin-binding or digesting function which establishes tolerance after a period of susceptibility, provided the amount is correctly adjusted to the capacity of the individual's cells and their nutrition is well maintained."

The Frequency of Tuberculosis is discussed by Dr. A. C. Klebs (Chicago). He is of opinion that amongst the white races it is difficult to come to a final decision as regards the frequency of the disease either during life or after death. The proof of its presence after death has been differently laid down by various observers, and the occurrence during life is often difficult to establish. However, if von Pirquet's cutaneous reaction is accepted as being specific, the vast majority of individuals have at some time been affected. Dr. T. D. Coleman (Augusta) quotes some interesting statistics as to the incidence of the disease among the dark-skinned races of America, and points out its appalling frequency. For instance, the United States census for 1900 gives the death-rate of 239 per 100,000 living Japanese, as compared with 173 in the white population.

The Symptomatology and Diagnosis of Pulmonary Tuberculosis are excellently described by Dr. C. L. Minor (Asheville). In clear language he explains the various means of ordinary physical examination and also the accessory methods (sputum examination, tuberculin, and so on). The different symptoms are considered in detail, and numerous hints are given which will be found useful by the practitioner. The importance of Prophylaxis of Tubercle is ably considered by Dr. Hermann M. Biggs (New York City). He first deals with individual prophylaxis, and lays down some sound principles as to the management of the general life of children, and the measures which should be adopted in the care of tuberculous individuals. He makes some interesting remarks on the compulsory notification of tuberculosis and on the work of the "health department" in relation thereto. This portion of the work is well worthy of study, but the subject is treated in such detail that a summary would be of but little value. It forms one of the most complete accounts of the compulsory notification of this disease in actual practice which we have yet received.

A large portion of the volume is very properly devoted to the Treatment of Tuberculosis. Dr. Lawrason Brown (Saranac) discusses the specific treatment by tuberculin. He describes the varieties of tuberculin used clinically and the methods of administration. He sums up his opinion thus: "Tuberculin when properly given does no harm, may produce no apparent result, and may markedly benefit an individual patient, who can follow at the same time hygienic-dietetic treatment while in a health resort, at home and at rest, or at work. Small doses and careful increase are most important, and by following them very closely some patients, even in advanced stages, reap great benefit." This article was apparently written before the introduction of the opsonic index as a guide to the use of tuberculin, but in an addendum the value of the index is considered and criticised. Dr. G. B. Webb (Colorado Springs) contributes a short article on the specific therapeutics of mixed and concomitant infections; his results have been encouraging. Hygiene, diet, and open air in the treatment of tuberculosis are discussed by Dr. T. D. Coleman, and interesting information is given in regard to the American sanatoriums. An account of climatic treatment is given by Dr. H. Sewall (Denver).

The part of the work dealing with Surgical Tuberculosis is divided into seven chapters. They are as follows: Tuberculosis of the Lymph Glands, by Dr. Leonard Freeman (Denver); Tuberculosis of Bones and Joints, by Dr. L. L. McArthur (Chicago); Tuberculosis of Muscles and Fasciæ, by Dr. Freeman; Tuberculosis of the Brain and its Membranes, by Dr. McArthur; Intestinal Tuberculosis and Tuberculosis of the Peritoneum, by the same author; and Tuberculous Ischio-rectal Abscess and Anal Fistula, by Dr. Freeman. All these chapters contain much interesting information, and complete an excellent treatise, embodying the most recent advances made in the study of tuberculosis in the United States, with due references to the work done in other countries on the same lines. The book is well printed on good paper, and the illustrations are beautifully reproduced. We can cordially recommend it to those of our readers who wish for a good work of reference on tuberculosis.

LIBRARY TABLE.

Clinical Memoranda for General Practitioners. By ALEX. THEODORE BRAND, M.D., C.M. Aberd., and JOHN ROBERT KEITH, M.D., C.M. Aberd. London: Baillière, Tindall, and Cox. 1909. Pp. 207. Price 3*s.* 6*d.* net.—This is a small handbook designed to be of service to general practitioners and to help especially the junior commencing practice. The subject matter, though mainly original in form, has been carefully selected and compiled by the authors from medical works and journals, both British and foreign, in odd moments during a busy professional life, and the results of their personal experience have been embodied. Those for whom the notes are intended are presumed to be well acquainted with the general principles of their profession and to be possessed of standard text-books for reference, hence only those points are referred to which the authors hope, recollecting their own experiences, may be found helpful to others in the treatment of perplexing and atypical cases. The work is divided into five sections—medical, surgical, obstetrical and gynæcological, therapeutical, and "aphorisms"—and in every section the audience to whom the book is addressed will find valuable information and suggestions. The type is good and the index shows careful preparation.

A Handbook of Venereal Diseases. Being an Outline of these Affections and of their History and Treatment. By A. C. MAGIAN, M.D., B.Ch. Vict., Ancien élève de l'Hôpital St. Louis, Paris. Manchester: John Heywood, Limited. 1909. Pp. 159. Price 3*s.* 6*d.* net.—This small handbook is interesting and instructive. The histories of cases of gonorrhœa and syphilis are well put together and clearly expressed. The author also gives his opinions forcibly—but not too much so—upon the question of marriage of patients suffering from either of the two diseases, and quotes disastrous cases of those who have married against the advice of their medical attendants. The book is specially valuable in that it mentions nearly every known drug, metal, and salts of the metals which have been recommended for the cure of venereal disease in its various forms, but as regards treatment, the reader may be disappointed by the fact that nothing new is recommended. We would point out that this is not necessarily a fault and may be a virtue in a book which certainly deserves a place in every medical practitioner's library. The type is good, but there are some printer's errors. The index has been carefully made.

Home Nursing. With Notes on the Preservation of Health. By ISABEL MACDONALD, Cert. Roy. Inf. Edin., M.R.B.N.A., A.R. San. I., Lecturer on Nursing and Hygiene to the County Committees of Fife and Haddington, to the County Councils of Stirling and Kinross, and to the Carnegie Dunfermline Trust; late Lecturer on Home Nursing, Scottish National Exhibition, 1908. Illustrated. London: Macmillan and Co. 1909. Pp. 326. Price 2*s.* 6*d.*—This is a sound little book. It is in no way technical and is thus well suited for the family circle. As a rule, the woman who buys a medical book and proceeds to prescribe for herself usually "gets a fool for a patient," as is aptly pointed out in the preface of this work, but the danger thus indicated has been on the whole avoided. The chapters dealing with the observation of the sick and the care of patients are particularly to be commended. The sections dealing with the administration of enemata, the preparation of special baths, contain some debateable points, and the "food table for a healthy infant" would receive some remodelling from many physicians. Chapter XVII. contains much valuable and important matter connected with the "care of the dead," which is not much touched on in works connected with the surroundings of the sick-room, and the writer must be highly commended in her handling of this delicate subject. The book is well printed and free from clerical errors, but as it is intended for "reference in time of need" by non-professional readers, and not for "consecutive perusal," it is specially to be regretted that there is no index provided.

The Recognition of Minerals. By C. G. MOOR, M.A., F.I.C. With Monographs on Geology, Ore Deposits, &c., by DONALD A. MACALISTER, Assoc. R.S.M., F.G.S. London: *The Mining Journal.* Pp. 231. Price 7*s.* 6*d.* net.—In this work Mr. Moor has provided what will prove to many a new and most interesting, if not lucrative, recreation. "It is specially intended," he writes, "for persons who do not possess an intimate knowledge of minerals, but who may be travelling or residing in districts where mineral wealth exists." The book is therefore addressed, not exclusively to those engaged in the mining industry, but to those who take a practical interest in discovering for themselves what the minerals are which may lie at their feet in the districts in which they may happen to be, and the quest might well form an agreeable one for any man possessing some scientific knowledge when away upon a holiday. The instructions seem to us to be clear and practical. The reader or "prospector" *in posse* is warned first of all that, generally speaking, certain minerals are usually associated with certain geological formations, so that it would be idle to look for a mineral in a locality which shows geologically no reason for that mineral's occurrence. He is then introduced to a clear outline of the sedimentary, igneous and metamorphic rocks (a section which has been well written by Mr. MacAlister). Next follow chapters on mineral and non-metalliferous deposits until one of the most interesting chapters is reached—namely, that on the recognition of minerals. Their chemical and physical characters are clearly described, and the monographs on the metallic and non-metallic elements themselves are written in an interesting manner. The search for, and identification of, minerals and metals is a very interesting subject, and a word of gratitude is due to the authors for bringing its practical study within the ken of all possessing the necessary, and not very elaborate, equipment.

International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, &c. Edited by W. T. LONGCOPE, M.D., Philadelphia, U.S.A. Vol. III., Nineteenth Series. Illustrated. London and Philadelphia: J. B. Lippincott Company. 1909. Pp. 296.—This number contains 23 articles and is divided up into sections dealing with treatment, medicine, surgery, gynæcology and obstetrics, orthopædics, pædiatrics, radiography, otology, neurology, ophthalmology, and pathology by American and French writers. The article on the Treatment of Tuberculosis by Dr. A. P. Fransine, in which rest in bed is insisted upon when the temperature is 100° F. or over, is dogmatic but sound in its principle. A historical note on Mesmer and Perkins' tractors by Dr. Davina Waterson of Baltimore shows that human nature a century ago was much the same as it is now as regards suggestive treatment. Graves's disease is lucidly treated from the medical and surgical point of view, but the writers do not agree except in the matter of the importance of early diagnosis. Professor G. Dieulafoy, M.D., of the Paris Faculty, gives an interesting description of some cases of gonococcic septicæmia treated by vaccine therapy with considerable success. Other articles of interest are: Some Post-Operative Complications, by Dr. D. M. Eisendrath and Dr. C. D. Straus of Chicago; Unforeseen Deaths in Scarlet Fever, by Dr. Gouget and Dr. Dechaux of Paris; Clinical Observations in Five Hundred Cases of Typhoid Fever, by Dr. Joseph A. Barach of Pittsburgh; The Radiographic Examination of the Gastro-Intestinal Tract from a Practical Standpoint, especially in connexion with the Diagnosis and Treatment of Gastro-Enteroptosis, by Dr. Henry K. Pancoast of Philadelphia; and Exotic Dysenteries, by Dr. Paul G. Woolley of Omaha. The volume is well printed, has a good index, and as a whole is a useful and readable issue.

The Phonographic Record. Issued Bi-monthly. Vol. XVI., No. 1. February, 1910. London: Sir I. Pitman and Sons, Limited.—This number contains "A Few Words from the New President," Dr. David Goyder, an informatory article by Sir W. R. Gowers on "The Neurology of the Eyelids," and "Some Thoughts on Appendicitis" by Mr. Norman Porritt, the keynote of which seems to be a warning against a too hasty diagnosis of appendicitis. The new President is a veteran who began the study of phonography in 1849 and he says it has been of incalculable assistance to him. The present generation hardly seems sufficiently to appreciate its benefits judging from the somewhat gloomy report of the honorary secretary (Dr. O. C. Gruner), whose tone is typified by the remark, "Whether anything can be done to persuade the coming student at any rate to give phonography a fair trial is problematical, but one feels that the question is of the greatest importance if the cause of medical shorthand is to be maintained." Perhaps the explanation of this falling off in the present day is the enormously increased percentage of medical lectures which find their way into print in medical journals, pamphlets, or books, saving the student the trouble of taking notes himself. Another difficulty must be the multiplication of technical terms and therefore the necessity for an extended vocabulary of conventional contractions.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B.; ALEXANDER MACALISTER, University of Cambridge; ARTHUR THOMSON, University of Oxford; ARTHUR KEITH, Royal College of Surgeons of England; and ARTHUR ROBINSON, University of Edinburgh. Vol. XLIV. Third Series. Vol. V., Part II. January, 1910. London: Charles Griffin. Annual subscription, 21*s*.—This number opens with a plate illustrating Professor A. M. Paterson's note in the October number of the journal on a case of Obliteration of the Left Common, External, and Internal Iliac Arteries. The articles contained in it are the following:—1. The Development of the Auditory Nerve in Vertebrates, by John Cameron, M.D., D.Sc., lecturer on anatomy, Middlesex Hospital Medical School, and William Milligan, M.D., lecturer on diseases of the ear, University of Manchester, with 20 figures in the text. The authors describe the auditory nerve and its several divisions as being brought into direct anatomical continuity with the hind brain by means of a nucleated tract of cytoplasm, to which they have applied the term syncytium, and they regard as the fundamental divisions of the auditory nerve, not the cochlear and vestibular portions, but the three that are distributed to the three semicircular canals and the three distributed to the utricle, saccule, and cochlea. 2. The Arrangement of the Bursæ in the Upper Extremities of the Full-term Fœtus, by Charles Whittaker, F.R.C.S. Edin., senior demonstrator of anatomy, Surgeons' Hall, Edinburgh. 3. The Morphology of the Testis, by D. T. Barry, M.D., F.R.C.S., professor of physiology, University College, Cork, with nine figures in the text. 4. Note on the Influence of Posture on the Facets of the Patella, by J. C. Lamont, M.B., Lieutenant-Colonel, I.M.S. (retired), lecturer in histology, University College, Dundee. 5. Abnormal Ossification of Meckel's Cartilage, by Arthur Keith, M.D., conservator of the Museum of the Royal College of Surgeons of England, with three figures in the text. 6. On the Carotid Sheath and Other Fascial Planes, by F. G. Parsons, with two figures in the text. Mr. Parsons is unable to find the sheath usually described as surrounding the carotid artery, jugular vein, and vagus nerve, and doubts its existence. 7. The Development of the Larynx, by J. Ernest Frazer, F.R.C.S., senior demonstrator in the Anatomical Department, King's College, with 19 figures in the text. This is a good memoir not adapted for abstraction. 8. The Embedding of the Embryo Guinea-pig in the Uterine Wall and its Nutrition at that Stage of Development, by E. Emrys-Roberts, M.B., Ch.B. Vict., M.D. Liverp., demonstrator of pathology, University of Bristol, with three plates and six cuts in the text from microphotographs. 9. Anatomical Notes, by Professor E. Fawcett and by Douglas G. Reid, M.B.

Revue de Médecine. Edited by M. L. LANDOUZY and M. R. LÉPINE. Thirtieth year, No. 1, Jan. 10th. Paris.—This number contains the following original papers: 1. Scarlet Fever in Children at the Claude Bernard Hospital in 1908, by Professor A. Gouget, comprising an account of the featnres of the disease in 858 cases, with 30 deaths. 2. The Pathogenesis and Treatment of Hæmophilia, by M. P. Nolf and M. A. Herry. This paper is their second contribution to the subject, and deals with the coagulability of the blood in this condition. 3. Radio-therapy and Basedow's Disease, by Professor R. Lépine. The patient was treated by the application of the rays to the neck. No definite improvement seems to have resulted, and the proportion of phosphoric acid to the urea of the urine increased in a manner similar to that occurring in animals after administering thyroid, from which it appears probable that the X rays increase the output of the thyroid secretion into the blood. 4. Spleno-pneumonias, by M. Mosny and M. Malloizel. This is their fourth paper on this subject and is devoted especially to diagnosis. 5. Professor Lépine contributes a note on the Utility of the Intravenous Injection of Alkalies in the Premonitory Period of Diabetic Coma. This note is written to combat the recent statement by M. Henri Stark that these solutions were of no value. This number also contains the Proceedings of the French Association for the Study of Cancer.

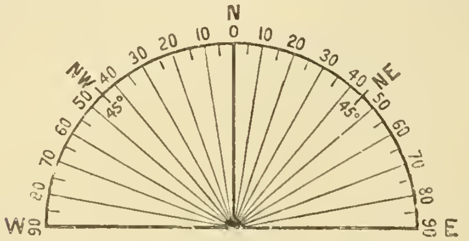
School Hygiene. No. 1, Vol. I. January, 1910. London: Published by the School Hygiene Publication Company, Limited. Monthly, 6*d*. net.—The January number of this new magazine contains interesting articles on numerous subjects covered by the inclusive title of school hygiene. Dr. James Kerr, educational medical officer for the London County Council, writes on elementary schools in relation to tuberculosis, saying that the prime need of many a child in London is room to sleep in, room to play in, and cleanliness, the burden of the essay being that the isolation of advanced tuberculous cases, especially of parents with four or five children all of whom are likely to become shortly affected, would greatly diminish the massive infection and would be advisable, despite its cost. The headmaster of Eton has some very shrewd things to say upon the criticism to which our public schools are now being subjected, and Dr. Luther Gulick of New York writes interestingly on athletics for girls. The magazine arrives among us at a time when the numerous problems which it proposes to deal with are exciting the maximum of interest.

New Inventions.

A NEW AXIAL NOTATION FOR CYLINDRICAL LENSES.

THERE is not the least likelihood of any standardisation of the axial notation of cylindrical lenses being arrived at as long as the present methods of angle markings of the arcs of the trial frames are followed. The matter has recently attracted some attention in this country for two reasons. First, because the Optical Society have pledged themselves to one method; and secondly, because the International Ophthalmological Congress have recommended another. This position of affairs has led to a somewhat unedifying controversy. Slight reflection, however, must show that there is nothing surprising in this divergence of opinion and methods, inasmuch as each method is purely an arbitrary one, having no recognised principle, or standard, upon which it has been designed. To attempt to create an arbitrary standard, with a view to its adoption by all ophthalmic surgeons and opticians throughout the world, is doomed to failure, for the practical reason that, apart from individual preconceptions, such a standard would have to be proved to possess advantages over all those methods at present in use. That is the difficulty of the whole question. Every method in vogue is a workable method; but there is no uniformity, because there is no common standard; and because these methods lack the basis of a standard which is known to the world, about which no confusion could arise, it is impossible to expect any universal agreement upon the subject. Fundamentally the difficulty has been primarily created by the markings of the horizontal line upon the arcs of the trial frames. These markings are zero at one extremity and 180° at the other. Why the horizontal line should have originally been chosen, instead of the vertical one, as the basis upon which to indicate the axes of cylindrical lenses in the trial frame, is difficult to conceive. The fact that this is the case has led to the confusion of having to deal with degrees higher than 90°, whereas such a custom is quite unnecessary. But now it may be asked, Is there a standard known alike to ophthalmic surgeons and opticians throughout the world which could be utilised in this connexion? I submit that there is—namely, the compass. Taking the mariner's compass in illustration, the poles are marked zero and the equator or horizontal line as 90°. Clearly, then, the axes of cylinders would simply require to be indicated as so many degrees from zero in approaching the equator, north-east, or north-west, according as the axis was downwards and outwards or downwards and inwards. The simplicity of this method is self-evident. There is no room for confusion, no matter how, when, or where an ophthalmic surgeon's prescription should be presented to an optician for preparation. If in doubt, all that the optician would have to do would be to refer to a compass. Moreover, by this method it would be immaterial whether the arc of the trial frame, provided it indicated the compass markings, was fixed above or below, forasmuch as in each case the axis of the cylinder would show the number of degrees from zero, except when it was vertical.

I append below a few illustrations of prescriptions inscribed upon this basis.



Right Eye.	*Left eye.*
+ 1 cyl. axis 0°	+ 1 cyl. axis 0°
+ 2 cyl. axis 15° N.E.	+ 2 cyl. axis 15° N.W.
+ 3 cyl. axis 45° N.W.	+ 3 cyl. axis 45° N.E.
− 1 cyl. axis E.	− 1 cyl. axis W.
− 2 cyl. axis 75° N.W.	− 2 cyl. axis 80° N.E.
− 3 cyl. axis 85° N.E.	− 3 cyl. axis 85° N.W.

For some weeks past I have adopted this method of marking the axes of the cylinders in my prescriptions, using the ordinary trial frame, but substituting the markings delineated thereon for those of the compass.

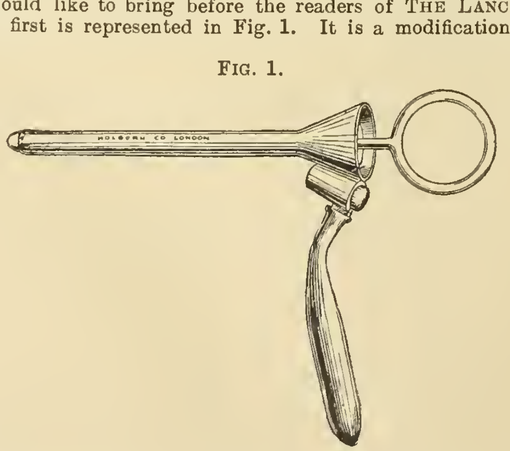
A trial frame, with the compass markings, is now in preparation for me with the arc above, an illustration of which I will take leave to send to THE LANCET as soon as the device has been completed. It will be known as the "Compass" Trial Frame, and will be obtainable from E. B. Meyrowitz, Old Bond-street, whose manager, Mr. John B. Reiner, has taken the matter in hand.

PERCY DUNN, F.R C.S. Eng.,
Senior Ophthalmic Surgeon, West London Hospital;
Lecturer on Ophthalmology, West London
Wimpole-street, W. Post-Graduate College.

A MODIFIED URETHROSCOPE AND A RUBBER STERILISING STOPPER.

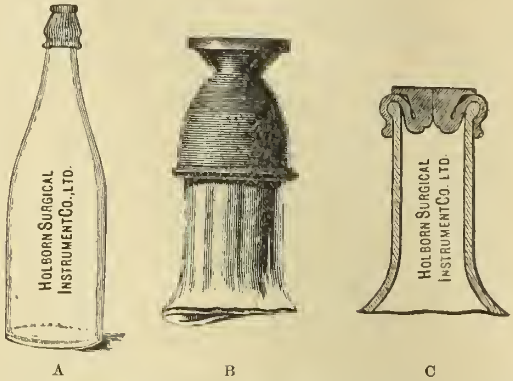
THE Holborn Surgical Instrument Company have made two appliances to my specification with satisfactory results which I should like to bring before the readers of THE LANCET. The first is represented in Fig. 1. It is a modification of Kelly's urethroscope which may be appreciated by those who are compelled to study economy of space in packing the instrument bag or steriliser, for one detachable handle serves for each of the three regular sizes—viz., 5, 7·5, and 10 millimetres diameter. The 5 millimetres bore urethroscope without the handle forms a convenient speculum for viewing the penile portion of the male urethra and for the securing of material from the deeper portions of that canal for microscopical or bacteriological examination. The larger sizes with handle *in situ* can be used for the female urethra and bladder, and also for the vagina, and the 10 millimetre instrument will even serve in emergency as a rectal speculum.

FIG. 1.



The second appliance is the rubber sterilising stopper represented in Fig. 2. The cap is shown sealing the mouth of a bottle containing fluid which has been sterilised by steam (A). The cap is made of soft rubber, the lower part, dome-shaped with thin walls, being slipped over the neck of the bottle (B). The upper part is solid, but with a sharp clean cut running from the centre of the disc to the top of the dome. During sterilisation the air in the neck of the bottle, expanded by the heat, is driven out through the valvular aperture in the solid portion of the stopper. On removing the bottle from the steam chamber the liquid contracts as it cools, and the pressure of the external air forces together the lips of the slit and drives the solid piece of rubber down into the neck of the bottle (C). Thus sealed, the bottle will preserve its contents sterile for an indefinite period.

FIG. 2.


HOLBORN SURGICAL INSTRUMENT CO., LTD.
HOLBORN SURGICAL INSTRUMENT CO. LTD.
A
B
C

J. W. H. EYRE, M.D., M.S. Durh.
Bacteriological Laboratory, Guy's Hospital, S.E.

THE CLEANING OF LONDON SCHOOLS.—Included in the education estimates of the London County Council for 1910–11 is a sum of £120 to meet the cost of a thorough weekly cleansing with soap and water of six infants' schools as an experiment. It is estimated that if all the infants' schools are cleaned in this way weekly the additional cost will be £10,500, but if an improvement in the health of the children results the increased attendance grants received from the Board of Education will compensate in a large measure for the extra expenditure. Dr. Beaton, a member of the Council, drew attention to this subject about a year ago (THE LANCET, March 20th, 1909, p. 881), when he suggested that more frequent cleansing of schools would tend to check epidemics. At present schools in London are swept once a week and the floors are washed once in three weeks.

ROYAL VICTORIA HOSPITAL, LEWES.—H.R.H. Princess Henry of Battenberg opened recently the new Royal Victoria Hospital, which has been erected on the downs near by the Sussex county town. It is intended that the new building shall eventually take the place of the present dispensary which is situated in the heart of the town, in a hollow surrounded by houses at an enclosed and noisy spot. What will become of the old building will be a matter for the consideration of the governors at some future occasion. Including the site the cost of the new building has been £6750. The architecture is of the Georgian style, but no pains have been spared to make the institution a thoroughly efficient modern hospital. The windows of the wards have been constructed so as to permit of the patients being wheeled out on to a covered verandah. It is hoped to equip the new building with entirely new furniture instead of utilising any from the old institution, and an appeal for £1000 is being made towards this end. The site and buildings of the hospital are free of debt.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 19, 1910.

The Admission of Women to the Examinations of the English Conjoint Examining Board.

THE last step has now been taken to make it possible for women students of medicine to present themselves as candidates for the examinations held by the Royal College of Physicians of London and the Royal College of Surgeons of England. Many years have elapsed since the attempt was first made to induce the Royal Colleges to examine women medical students. It may be remembered that so long ago as 1876, when the College of Surgeons was in the habit of granting a Licence in Midwifery, the Council decided to admit to the examination for this diploma some women candidates, but the Council had reckoned without the examiners, for Dr. ROBERT BARNES declined to examine these women candidates. The Council decided to postpone the examination, and no more examinations for a Licence in Midwifery were held, though not till 1888 was the Board of Examiners in Midwifery formally abolished. Meanwhile the two Royal Colleges had united to form the Conjoint Examining Board, and in all matters concerning the Licence of the Royal College of Physicians and the Membership of the Royal College of Surgeons the two Colleges acted together. In 1895 a widely signed petition was presented from the London School of Medicine for Women to the governing bodies of the two Royal Colleges, asking that their examinations should be thrown open to women. The petition was rejected by the Fellows of the College of Physicians, and the Council of the College of Surgeons expressed its regret that it was unable to accede to the request of the petitioners in consequence of the vote of the College of Physicians. In 1908 a second petition was presented, still more widely and even more influentially signed than was the first. The College of Physicians on this occasion expressed its willingness to admit women candidates, and the Council of the College of Surgeons, before replying to the prayer of the petitioners, decided to take a vote of its Fellows and Members. The result of the voting was that, though a majority of those recording their votes was opposed to the admission of women candidates, still the majority was but small and the larger number, both of Fellows and Members, did not express any opinion. The Council of the College of Surgeons, after consideration of this vote, decided to admit women students, not only to the Membership in conjunction with the College of Physicians, but also to the Fellowship of the College of Surgeons. This resolution was carried in January, 1909, but the elaborate procedure required by the Charter postponed the carrying into effect of the wording of the resolution for several months; but at last, a year later, by the recognition of the London School of Medicine for Women and of the Royal Free Hospital, the way is open for the admission of women candidates to the College of Surgeons.

In discussing the arguments for and against the admission of women students to the Royal Colleges, it was often forgotten, both by those who supported and those who opposed the movement, that the question was not whether women should be allowed to practise medicine at all, but whether they should be permitted to obtain these special diplomas. That women might practise medicine had been decided many years before, and the number of avenues by which they may obtain a diploma conferring the right to practise is now great; there is a variety of choice before them. It may well be asked, and indeed it has been asked by some who opposed their admission to the Colleges, why if so many other degrees and diplomas are open to women should they strive to force the doors of the London Colleges? Others, who favoured the change that has just taken place, argued with no small degree of justice that the wish of medical women to possess the diplomas of the two Royal Colleges was rather in the nature of a compliment. This certainly seems to us a more probable view than that which attributed to the women students a mere hankering after something which they had not got. With the University of London free to them, with many licensing boards welcoming them, it was surely an evidence of their appreciation of the value of the diplomas of the London Colleges that they should strive to obtain the right to compete for them. In admitting women to the examinations of the College of Surgeons the Council availed itself of the Act of 1876, by which any examining body capable of conferring registrable diplomas was allowed to admit women to its examinations while withholding from them the corporate privileges associated with these diplomas. Some of the Members of the College of Surgeons have contended that the Council had taken advantage of the Act of 1876, so as to avoid the need for an application for a new Charter. They argued that a lower form of diplomates had been established with none of the rights belonging to the Members, and that the Fellows who were women would have no power to vote for the election of members of Council. All this is true, but the accusations brought against the Council were neither accurate nor tasteful. And all must allow that the privilege of obtaining either the Membership or the Fellowship of the College of Surgeons is so great that successful women candidates can afford, for the present at least, to disregard the lack of other privileges which might have been expected to belong to those diplomas. At the present time a majority of the students of the London School of Medicine for Women present themselves for examination at the University of London, while only a few remain content with the Licence of the Society of Apothecaries or the qualifications of the Scottish Colleges. Although the percentage of successful women candidates at the University of London is high there are not wanting signs that the difficulties which have oppressed the London student in this connexion are beginning to make themselves felt, so that the English

Conjoint Board offers advantages to women which cannot be neglected. What proportion will avail themselves of these examinations cannot be said, of course, but we think it not unlikely that many women students will follow the example set them by most men students, and will take the diplomas of the Colleges whether or no they proceed to a degree of the University of London. A beginning has been made, for three candidates have succeeded in passing the examination in anatomy and physiology.

So much for the examinations of the Conjoint Board. For the higher examinations for the Fellowship of the Royal College of Surgeons of England there will not be wanting candidates. All the chief hospitals of London and many in the provinces require that the members of their staff must possess, if the post be medical, the Membership or the Fellowship of the Royal College of Physicians of London, and if the post be surgical the Fellowship of the Royal College of Surgeons of England. We are not here discussing the justice or even the convenience of this arrangement, but merely stating the existing situation. Those few hospitals which have up to the present been willing to appoint women members of the staff have been unable to insist on a similar rule for medical women, for these higher diplomas have been hitherto absolutely inaccessible to medical women. Now that it is possible for women candidates to present themselves for examination for the honour diplomas we may expect that the same qualification will be insisted on both for men and women candidates for staff appointments, and this in itself must create a demand for the diplomas. The industry and ambition of women students may, however, hardly need the extra incentive. Already one woman has taken the Membership of the College of Physicians, and it will not be long before candidates present themselves for the first examination of the Fellowship of the College of Surgeons. It will be of interest to see whether women candidates will show as high a proportion of failures as is now shown by men, for at the first examination for the Fellowship usually two-thirds of the candidates fail, and at the examination for the first Fellowship which was held in November only 33 candidates were successful out of 108 who presented themselves.

◆

Recent Studies on Acute Anterior Poliomyelitis.

AT intervals during the last five years epidemics of acute anterior poliomyelitis have appeared in different parts of the globe, some of them of peculiar severity and extent. Norway, Sweden, New York and the New England States, Australia, various parts of Germany and Austria, France, Holland, and England, have all been visited. In 1907 over 1000 patients were affected in New England, and again about 300 in 1909; in the latter year an epidemic of 200 cases occurred in St. Paul, Minnesota. In 1909, further, Rhenish Westphalia, Hesse-Nassau, Vienna, and Lower Austria were visited, and the cases were numbered by hundreds. In Upminster, Essex, an epidemic of eight cases occurred in the summer of 1908; in the same year 200 people were affected with the disease at Lewistown, Pennsylvania; and there was a small epidemic in the neighbourhood of Upsala. As a natural consequence of these somewhat alarming occurrences—for the mortality throughout has been considerable—attention has been concentrated on the disease, and the problem of its nature and etiology has been attacked with redoubled vigour. Contributions on the subject have been appearing in medical journals almost monthly, and an immense advance has been made in our knowledge of this distressing malady.

The first thing which impresses itself upon us is that we must widen our conceptions of the disease as far as its seat in the spinal cord is concerned. Hitherto too much reliance has been placed on the study of chronic instances of the complaint, whereas in all the epidemics innumerable opportunities have presented themselves of observing it in the earliest stages. Thus it has become quite certain that meningeal symptoms are far from uncommon, as exemplified by pain and stiffness of the neck, pain on any movement of the head, sometimes a degree of opisthotonos, pains and stiffness along the spine, and sometimes on pressing the vertebræ. Kernig's sign has not been wanting in numbers of cases. As an almost invariable rule, however, these meningeal symptoms have been confined to the spinal cord. The meningitis, moreover, has been easily recognisable post mortem in many cases, consisting in infiltration of the meninges, some thickening of the membranes, and engorgement of their blood-vessels. In a small number of cases, relatively, the posterior horns and posterior root ganglia have been invaded, although the main seat of the disease remains in the anterior cornua. For this reason, among others, it is desirable to describe the disease as acute or epidemic poliomyelitis; the designation "infantile" must be absolutely abandoned, and perhaps also "anterior." In many cases during life lymphocytosis of the cerebro-spinal fluid has been noted, and it may well be, as PETRÉN and others maintain, that this fact will prove one of the chief points in the differential diagnosis of poliomyelitis and epidemic cerebro-spinal meningitis. It is undoubtedly the case that these two diseases have certain features in common, and some of the Norwegian investigators are undecided on the question of their identity or otherwise. Curiously enough, epidemics of the former have followed the latter in France, the United States, and Holland; in Rhenish Westphalia an acute outbreak of 500 cases of poliomyelitis followed an epidemic of spotted fever, and the two have been coexistent in Scandinavia. There is much to suggest that the virus of poliomyelitis reaches the nervous system viâ the respiratory system, perhaps by the nares and cribriform plate of the ethmoid. In the Australian epidemic cough was a common prodromal symptom; in Germany faucial inflammation was very frequent, also angina and bronchitis. In other cases intestinal symptoms have been present.

It is obviously certain that several types of the disease may occur. Statistics show that the lower extremities are more commonly involved than any other part of the body, and these results of the epidemics are substantiated by an analysis of 171 cases from the records of the Hospital for Sick Children, Great Ormond-street, published in our columns last week by Dr. KARL BREMER. An ascending form, remarkably like Landry's paralysis, has been fairly frequent, and this fact alone makes reinvestigation of that complaint, and in particular its etiology, imperative. Polioencephalitic symptoms have been met with in a number of instances and ataxic symptoms to a much less extent. The most important and most interesting feature of the work which these epidemics have inspired has been the attempts to isolate and cultivate the toxic agent. LEINER and VON WIESNER, RÖMER, LANDSTEINER and LEVADITI, FLEXNER and LEWIS, and others, have published the results of experimentation. In the present number of THE LANCET will be found a report of the investigations into the etiology of epidemic poliomyelitis prosecuted at the Rockefeller Institute, and we may briefly recapitulate by noting that the organism, whatever it is, does not belong to the group of readily stained and easily cultivated bacteria; the toxin or toxic agent obtained from poliomyelitic cord emulsion can be transmitted to apes, producing the characteristic symptoms of the disease, but the potency of the virus is not thereby lessened; after a slight attack reinoculation is almost impossible. It may be stated that in all probability the descriptions of diplococci and other organisms found in various cases must be taken with reserve. We feel that the mystery of one more infectious disease will shortly be solved, and its avenue of infection demonstrated; then will our methods of prevention, of immunisation, perhaps, and of treatment become much more effective than they are at present.

◆

The Control of Scarlet Fever.

IN an address delivered before the Epidemiological Section of the Royal Society of Medicine early this year, which we publish in another column, Dr. F. G. CROOKSHANK drew attention to the doubts which had been expressed in many quarters as to the utility of isolation hospitals to control the course of an epidemic. He expressed his own opinion on this matter in no uncertain terms, saying, as will be seen, that even if it should be proved that the removal of cases of scarlet fever to isolation hospitals did not necessarily lessen the incidence in a particular community of the disease, yet the provision of such hospitals remained "about the cheapest thing in practical insurance offered to the small ratepayer. ...... For about 5*s.* or 6*s.* a year it insured him against all expense in the event of his household becoming stricken with infectious disease, and safeguarded him against business or professional loss." We believe that this economic view will be generally supported not only by our readers but by those members of the public who have had practical experience. A case of scarlet fever occurring in a small house involves the householder in an expense usually incommensurate with his income if the patient is nursed at home, especially if the family is a large one for the size of the house, whilst if the patient be at once removed to an isolation hospital the sanitary authorities will do all that is possible to stamp out the infection and relieve the householder of enormous responsibilities and anxieties. Dr. CROOKSHANK, however, went on to express the view that the removal of cases of scarlet fever, if properly carried out, does reduce the incidence of the disease in the community served, and here again we believe he will have both medical and public opinion on his side, though with reservations. He considers that every notified case, however mild, should be admitted to an isolation hospital, unless, of course, absolute isolation can be guaranteed at home, for from his experience he believes that the seasonal prevalence is greater when a few mild cases are treated at home. His contention that cases are not necessarily infectious in proportion to their severity should certainly be borne in mind, for it is probable that the early, atypical, intensifying cases are those in which the virus has the highest infective potency, although the amount of virus (but not the degree of potency) may be greater in the later cases of an outbreak. According to these views, therefore, every effort should be made to encourage early and confident diagnosis and the immediate transference of "first" cases to hospital, however mild or irregular they may seem to be. But Dr. CROOKSHANK appears to us at this point to leave out of all calculation the particular needs of these early cases in his apprehension lest they should prove the focus of an epidemic, and both individual members of the public, as well as their medical attendants, would be free to argue that in many cases such general advice would be unsound. There are, surely, many of these mild cases which can be treated at home with advantage to the patient, and great saving of anxiety to the parents, and to remove these cases from the care of the family medical adviser must often be not only unnecessary but unwise. The situation, as it arises, should always be made the subject of discussion between the medical officers of health and general practitioners, and should never be dealt with according to any general rule. No general rule is applicable, and it may be pointed out that there is a growing tendency amongst medical officers of health to adopt a practice quite opposite to that suggested by Dr. CROOKSHANK and to carefully select cases for hospital isolation according to the circumstances which obtain in the home—that is to say, to give up the attempt to isolate every case in hospital.

Dr. CROOKSHANK's remarks on the details of the management of cases of scarlet fever upon admission to hospital are particularly worth attention. The old plan for the general arrangement of hospitals for infectious cases has been: "one disease, one ward-block, one staff." This has necessarily involved great expense and a large number of nurses. Dr. CROOKSHANK raises the question whether, in small hospitals at any rate, all diseases (excluding, we imagine, small-pox) may not be safely treated side by side, and has given this plan a partial trial with success. At Mortlake he has had to make use of pre-existing buildings —separate pavilions, separated by considerable open spaces and providing 36 beds on a site of four acres. Having there several ward blocks at his disposal, he has not as yet deliberately placed cases of scarlet fever and diphtheria side by side, but he has treated cases of diphtheria, typhoid fever, and erysipelas or puerperal fever in one ward, and in the admission of doubtful cases of scarlet fever or diphtheria into the wards nominally allotted to those diseases he has not transferred them when the diagnosis has been found erroneous. Further, the distinction between diphtheria and scarlet fever nurses has been done away with. His method is to isolate patients without any mechanical apparatus such as glass walls or barriers, but by "ritual observance" only; in other words, each patient is isolated in his or her bed, the only safeguard being minute attention to cleanliness. Dr. Crookshank maintains that if proper technique is observed infection can be entirely avoided. The details of this technique are related in his lecture, and should be read by all interested in this most important subject. They show how carefully the whole matter has been thought out before the responsibility implied in the change of treatment was incurred. Our knowledge of the manner in which infectious diseases are spread tends to support Dr. Crookshank's views. It is generally admitted that scarlet fever is not spread to any distance by aerial conviction; the theory that the infection is mainly derived from direct inhalation of the breath, or of air charged with minute droplets of mucus or saliva projected from the mouth or nose, and not from particles of the cuticle shed during desquamation is also accepted; so that by careful attention to the nasal discharge risk of infection is greatly lessened. With regard to the danger of patients suffering from scarlet fever contracting diphtheria some interesting considerations arise. A recognised case of faucial or laryngeal diphtheria seems rarely to cause other cases in a well-ventilated scarlet fever ward, and as Dr. F. Foord Caiger has pointed out, the circumstances connected with the appearance of post-scarlatinal diphtheria in certain hospitals frequently suggest that a predisposition may be engendered by the operation of some more general and widespread influence, such as an atmospheric or soil condition. The same authority also states that statistics go to prove that the incidence of the affection bears no relation to the proximity of a diphtheria ward. A similar line of argument might also be applied to the infectivity of diphtheria, for in the days that many of our readers will remember, before the identity of "membranous croup" and diphtheria was demonstrated, nearly all the cases were treated in the wards of the general hospitals, and yet the spread of the disease to other patients in the wards rarely took place.

At first Dr. Crookshank's proposals may seem startling, but if the principles he insists upon are fully comprehended and carried out and his results, so far as they go, may be provisionally regarded as suggesting that there is but little danger to be feared. It cannot be denied that by by mixing the cases better and cheaper hospital results can be secured a great step in advance will have been made, but, naturally, far more extended experience will be necessary before general action on the lines foreshadowed by this interesting paper can be regarded as in any sense justifiable. Of course, if these principles can be thoroughly carried out in private practice the expense to the local sanitary authorities might further be lessened; but when minute details are essential for the prevention of infection, they are more likely to be successfully brought into action under specialised nursing than when the care of the patient rests with unskilled attendants. It is obvious that for "bed isolation" scrupulous attention to cleanliness is essential and that considerable training for the nurses would be required before complete reliance could be placed upon them. Anything approaching a general adoption of the proposal here in question on the relatively slender evidence at present adduced would be absolutely unjustifiable, more especially as parsimonious sanitary authorities would be only too glad of an excuse for the adoption of an economical procedure such as is here under consideration. Nevertheless, the scheme is a hopeful one, and we trust that Dr. Crookshank will duly report on the further results which he obtains.

Annotations.

"Ne quid nimis."

YELLOW FEVER AND ACQUIRED IMMUNITY.

It is generally accepted as a well-established fact that in countries where yellow fever is endemic the native population is practically immune to the disease, and that Europeans who have continued to reside in the locality acquire also in time some degree of this same immunity. On the other hand, it is well recognised that the persons most liable to fall victims to the malady are those who have recently arrived within the endemic area. Up to the present time not much evidence has been brought forward respecting the nature of this acquired immunity or how it is produced. It has been suggested by Sir Patrick Manson and other writers on tropical medicine that it may be due to the occurrence in childhood of a mild attack which exhausts the susceptibility of the individual to the malady, second attacks of yellow fever being admittedly of extremely rare occurrence. Recently some interesting information on the subject has been contributed by three medical officers belonging to the French Colonial Military Service in a report,[1] which was jointly prepared by them, on an epidemic of yellow fever in 1908–09 in the West Indian island of Martinique. Prior to this outbreak the disease was believed to have been entirely absent from the colony for a period of nine years or more, and it was thought therefore that there had been a fresh importation of infection from without. Inquiry, however, showed that for many years there has prevailed in the island a febrile illness, often affecting children in a mild form, and also attacking adults occasionally, known locally under the name of "fièvre inflammatoire." This ailment occurs in varying degrees of severity, ranging from a comparatively insignificant indisposition in young children to an acute attack in adults, attended sometimes, in specially severe cases, with albuminuria, jaundice, and even black vomit. It is contended that this mild malady is in reality true yellow fever, although in the majority of instances it is not a very serious affection, and although, even in aggravated cases, it fails often to present those clinical features described by the older observers as inseparable from yellow fever. It is asserted that yellow fever is ordinarily a mild disease and that the severe symptoms given in the text-books as typical of "Yellow Jack" are the exception. An attack of "fièvre inflammatoire" is stated to give protection in the majority of people not only against a second attack of the mild disease but also against typical yellow fever, the protection generally lasting a long time, in some cases throughout life. In certain individuals this acquired immunity tends to disappear with the lapse of time, and they become again susceptible to a second attack, but it appears to be extremely seldom, even in the presence of epidemic influences, that a person who has had a mild attack of "fièvre inflammatoire" in his youth dies later from yellow fever. The protection thus secured resembles in some measure that conferred upon a child by vaccination against small-pox; the protection in either case may need to be renewed by a subsequent inoculation at puberty or in adult life, and the immunity is more lasting according to the severity of the primary attack of "fièvre inflammatoire." In the epidemic of 1908–09 at Martinique, during the first four months of the year, the attacks of "fièvre inflammatoire" were numerous, but the type was not severe. With the advent of the hot season, however, an increasing severity in the symptoms was observed, and ultimately the virulence resulted in producing cases which showed the clinical characters of yellow fever as described in the text-books. The summer of 1908 was exceptionally hot, and the number of mosquitoes was noted to be far in excess of previous years. The French observers at Martinique hold the opinion that heat and moisture not only favour the multiplication of mosquitoes, but that these conditions lead also to an intensified virulence in the yellow fever virus, which intensification they think takes place within the body of the stegomyia mosquito itself. The multiplication of the stegomyiæ is thought, too, to aggravate the seriousness of the yellow fever attack in another way. If a number of infected insects bite a non-immune individual a larger quantity of the virus must be inserted into the victim's body than if he had been bitten by a single stegomyia; that is to say, the administration of a larger dose of the infective material will naturally be expected to give rise to a more severe attack of the malady. The thesis of the reporters on the Martinique epidemic is, shortly, that yellow fever is endemic in that colony, prevailing from year to year in a mild form under the name of "fièvre inflammatoire," an attack of which confers protection against the severer varieties of the disease; that the type becomes more severe in the summer season, and when that season is exceptionally hot and mosquitoes have greatly increased in numbers the disease may become epidemic and cases assume a higher degree of virulence, presenting the serious symptoms of yellow fever which are described by the older observers. The latter cases are, in these circumstances, observed mostly in Europeans who have recently arrived in the island, or in creoles who have returned to the colony after a prolonged sojourn in some temperate zone. These views, as might have been expected, have not altogether met with general acceptance in Martinique, some members of the medical profession practising in the colony holding fast to the view that "fièvre inflammatoire" and yellow fever are two separate and distinct diseases. Unfortunately, since the specific organism of yellow fever has not yet been isolated and identified it has not been found possible to put this difference of opinion to the test—that is, by ascertaining definitely the presence or absence of the yellow fever germ in the system of those who are suffering from an attack of "fièvre inflammatoire." The facts as set out in the report on the 1908–09 epidemic in Martinique appear to justify in a great measure the opinion that the immunity acquired against yellow fever by a large portion of the population of that island is due to their having suffered in childhood from a mild attack of the disease in the form of "fièvre inflammatoire."

---

[1] Contribution à l'Étude de l'Épidémiologie Amarile: Origine, Causes, Marche, et Caractères de l'Épidémie de Fièvre Jaune de la Martinique de 1908–09. Par MM. Simond, Aubert et Noc. Annales de l'Institut Pasteur, Nos. 11 and 12, 1909. The paper was also printed in the Annales d'Hygiène et de Médecine Coloniales, No. 4, 1909.

BILATERAL TUMOURS.

IN the last issue of THE LANCET appears an article by Mr. W. Roger Williams on Malignant and Non-malignant Tumours of Bilateral Origin. Mr. Williams, as is well known, has devoted much attention for many years to the difficult problems of the nature and origin of tumours, especially those which are malignant in nature, and in the article which we have mentioned he has drawn attention to the fact that in some cases of tumours, both innocent and malignant, the growths are arranged with bilateral symmetry. In the case of non-malignant growths the fact that the tumours are situated symmetrically on the two sides of the body is at least evidence that something more than merely local causes have given rise to the growths. In the case of malignant tumours, unless the growths on the two sides of the body have appeared synchronously, there is always a possible objection that the growth on one side of the body appearing first has given rise to that growth which appeared later on the opposite side. The more numerous the tumours are, the more difficult is it to feel sure that there is any special factor leading to the symmetry. Mr. Williams quotes as striking examples of bilaterality cases of multiple fibromata of nerves. In some instances more than 2000 tumours have been present. We fail to see much force in this example, for it would have been much more remarkable if with so many tumours present there had been marked unilaterality in distribution. This is only a small criticism and there is a great deal of evidence in the article which deserves attention, but whether the observations recorded and quoted here will aid at all in the solution of the difficult problem of the etiology of new growths we should hardly like to say. The wealth of reference which Mr. Williams supplies will enable our readers to investigate at first hand most of the facts on which the article is based, and there can be no doubt that sufficient attention has not hitherto been paid to the fact that cases do occur in which tumours are situated symmetrically on the two sides of the body.

PELLAGRA IN ILLINOIS.

THE Peoria State Hospital for the insane was opened in 1902 and now consists of 30 buildings, with 600 acres of land, which represents a capital expenditure of over £200,000. Last August Dr. G. A. Zeller, the medical superintendent, discovered that there were several cases of pellagra among the 2150 incurable lunatics under his care. With praiseworthy promptness Captain J. F. Siler and Captain H. J. Nichols of the United States Army Medical Corps were despatched before the month was out to study the disease in coöperation with the local medical staff. Their able report has now appeared in the *Medical Record* (New York, Jan. 15th), and we have also received the "pellagra number" of the Illinois State Board of Health bulletin (August, 1909), which is richly illustrated with striking photographs of the disease. The well-marked symmetrical eruptions are doubtless due to the fact that the asylum is managed without restraint; the windows are not barred and the grounds are not enclosed by any wall or fence; hence the exposure to sunlight during the summer months is practically unlimited. After careful examination of all the inmates and excluding many doubtful cases it was decided that 175 of the men and women were pellagrous, and that some 70 per cent. of these had suffered from previous attacks. It is now calculated that the disease has been prevalent, but unrecognised, in the asylum for at least four years, during which time complaints have been received, from friends of inmates who had died, of sunburns on the backs of the patients' hands; coroners' inquests have been held on patients who were thought to have incurred severe scalds of the feet; and attendants have been dismissed for supposed carelessness while administering hot baths. Diarrhœa, dysentery, and ulcers in the colon at necropsies were present in some cases, but a faulty water-supply was held to be responsible for some of these symptoms. The patellar and plantar reflexes were abnormal in about three-fourths of the patients and were usually excessive. Cultures of the blood, spinal fluid, and spleen pulp were negative. There was no evidence that the maize, on which the patients were fed to the amount of two ounces per day, was diseased, but the investigators state, "The possibility of an intoxication from bacterial action on maize products in a damaged intestine is considered the most promising field for study." One of the arguments in favour of the protozoal nature of pellagra is the mononuclear increase in the blood of patients, but at Peoria this increase was not found. The complete freedom from pellagra in this asylum of the resident staff, physicians, attendants, and servants, makes it difficult to understand how the infection can have arisen through any biting insect, and as nearly all the pellagrous patients had been resident in the asylum for periods varying from two to seven years, we must agree with the report that there is "a strong indication that the exciting cause of the disease is present in the institution."

ENTERIC TRANSMISSION BY CHRONIC CARRIERS.

IN the Army Medical Department report for 1908, which we have reviewed at length recently, it is stated that special attention has been directed by the military medical authorities in India to the possibility of contamination of food by chronic typhoid carriers, that is, by persons who at some previous time have suffered from enteric fever and who continue to excrete the bacilli. In every suspicious case the blood has been examined for agglutinins, and in a number of these the urine and stools are also bacteriologically examined for the specific organism. Widal's reaction alone is no evidence that a man is a carrier. In one case, that of a regimental soldier cook who had suffered from enteric fever in 1896, it was found that he was intermittently excreting typhoid bacilli in his urine 12 years later, but no case of enteric fever occurred amongst the men whose food he cooked. The combined observations of a large number of investigators in different countries carried out in recent years tend to show that about 3 per cent. of all convalescents from enteric fever become chronic carriers, and a large proportion of these (70-80 per cent.) are women. In India some 1000 cases of enteric fever occur annually amongst British troops; of these about 200 end fatally and about 50 are invalided to England, so of the remaining 750 left in India it may be assumed that about 23 become chronic carriers. As, however, only 3 or 4 per cent. of soldiers are employed in connexion with either the cooking or preparation of food for their comrades, not more than one or two carriers can possibly be looked for as likely to be a source of infection to food supplies in the cookhouses. With a view to isolating convalescents recovering from enteric fever more completely than can be done in most stations, and at the same time providing opportunity for detecting chronic carriers with as much certainty as possible, convalescents from the Lahore, Mhow, Meerut, and Lucknow division are sent to Naini Tal. This depôt is about a mile from the civil station, and no other troops were stationed in their vicinity. The divisional laboratory is at Naini Tal under the care of a specialist officer in bacteriology. A steam disinfector for clothing and means for boiling all excreta before disposal are also provided. The urine and fæces of each man (unless he has already been found to be a carrier) are examined for about seven consecutive days, and no convalescent patient is sent back to his station until at least four months have elapsed since the cessation of fever. It was found that the great majority of convalescents cease to pass bacilli in their urine within a few weeks of convalescence. Of 190 men whose excreta were examined six were found to be still passing bacilli (five in the fæces and one in the urine) more than six months after cessation of fever; that is 3·1 per cent. of the convalescents. These men were invalided to England and were still excreting bacilli 18, 16, 12, 8, 6, and 6 months after cessation of fever. During 1908 no less than 310 convalescents from enteric fever were received at Naini Tal—that is, excluding those invalided to England—more than one-third of the convalescents from all India. During the year 1472 examinations of fæces and 1448 of urine were made. The effect of segregating enteric convalescents at Naini Tal has apparently proved beneficial in stopping the spread of the disease in other stations, for it has been found that the admissions for enteric fever from all stations in 1908 which sent convalescents to Naini Tal show a reduction of 9 per cent. on the figures for 1907, while the remaining stations show an increase of 26·6 per cent. At stations from which convalescents could not be sent to Naini Tal they were isolated locally as strictly as practicable, and where laboratories were available their excreta were examined. Five chronic carriers—two of whom were women—were discovered and also a temporary carrier who was a nursing orderly. At a conference of sanitary officers held at Poona it was recommended that all soldiers found to be typhoid carriers should be strictly segregated, and if the condition was found to be chronic that they should be invalided out of the service. As a result of the investigations at Naini Tal a similar convalescent depôt for the enteric convalescents for Southern India has been established on the same lines at Wellington in Madras.

INSANITY AND ASYLUM ACCOMMODATION IN RUSSIA.

AT the recent Congress of Russian Psychiatrists the President, Professor Bechtereff, in his address gave some striking information on the extent of mental disorders in Russia. He drew a picture of the terrible position of the neglected patients, for whom there is no room in the overcrowded hospitals and who are kept "in chains" in cheerless houses, and so on. In Russia, he stated, compared with other countries, there is less mental disease, which increases with civilisation. Whereas there is one such sufferer in 200 of the population abroad, in Russia the proportion is 1 in 450. And again abroad, whilst the number of mental patients under skilled care is, for example, 92 per cent. in England and 97 per cent. in Scotland, in Russia it is only 10; and since in Russia the number of the afflicted is at least 300,000 it follows that 270,000 are at liberty. He urged the necessity of colonies and the communal supervision of these people, as also for epileptics and other sufferers from nervous disorders who must be counted in millions and for whom nothing is done. The speaker referred to the war, the revolutionary movement, and economic and social misery as causes of the increase that has been noticed and as having produced a number of suicides and cases of drunkenness. As a radical method of reducing mental disease he advocated the suppression of the sale of alcohol. Professor Bechtereff's conclusions are very interesting. The smaller comparative number of the insane in Russia may be attributable to the fact that civilisation has not there reached the stage at which it has arrived in other countries, but the influence of civilisation upon the actual incidence of mental disease is at least a moot point, while there is little doubt that the apparent incidence of insanity is greater in the more civilised countries. Amongst persons of little education deviations from normal mentality are only classed as insane when such deviations are of the extremest nature, while deviations from the normal in the region of conduct tend to be ascribed to anything rather than to insanity. It is a current popular view that to the alienist all men are insane, and it certainly is the case that insanity betrays itself to the skilled observer when it is hidden from those of less experience. In the less civilised communities many persons pass muster as sane who in other communities would undoubtedly be regarded as mentally infirm. For such persons it is only natural that in the less civilised communities no provision is made, while in the more civilised communities much provision is made and palatial accommodation is provided. Protected in such institutions the insane often reach the normal term of the years of man's life, and indeed frequently exceed it; whereas if they had not been so protected, and if they had been exposed to the ordinary perils and stresses of life, they would have died earlier. This early protection of the insane must be remembered as an important factor in increasing the apparent number of the insane in a civilised country. On the whole, the picture drawn by Professor Bechtereff is not a bright one, and we sympathise with the psychiatrists of Russia in the labours which await them. At the same congress Dr. E. V. Erickson gave a description of the care of the mentally diseased in the kingdom of Poland. A population of 11,500,000 is served by 20 hospitals, which is clearly not sufficient accommodation. Each government is now trying to provide its own hospital, but great difficulties, it seems, are met with. Of the arrangements in Astrakhan Dr. P. I. Davigaieff gave a painful account, where for want of means to maintain a proper staff recourse has often to be had to the strait jacket and other harsh measures.

THE INCORPORATED INSTITUTE OF HYGIENE.

THE Incorporated Institute of Hygiene, which has for its object the promotion of hygiene and the preservation of health, held its annual general meeting at the Royal United Service Institution on Feb. 14th, when Sir William Bennett, K.C.V.O., president of the institute, occupied the chair. The annual report showed that good progress is being made by the institute throughout the country. A large number of lectures have been delivered in London, the Midlands, and in the North of England, and conferences have been held on subjects affecting the public health. A permanent museum of hygiene, the first in the provinces and modelled on that in London, has also been opened at Birmingham, where the character and constituents of foodstuffs and other articles in everyday consumption are explained and demonstrated. The report also pointed out that the examinations in hygiene held periodically in the leading towns of England, Scotland, and Ireland were of great and increasing importance, owing to the fact that the candidates were chiefly school-teachers who were consequently in a position to impart much of their acquired knowledge to the young. These examinations embraced such subjects as the hygiene of motherhood, the feeding and rearing of children, food and dietetics, cooking, the hygiene of the home, home nursing and first-aid, physical training, and school hygiene. It is, of course, impossible that work of this kind can be carried on without the expenditure of money, and there is great need of a wider public support if the institute is to fulfil its duties to the community. As was pointed out by the chairman in proposing the adoption of the report, the work is principally carried out by members of the medical profession, who give much time to it without reward, but there must be many people who are in full sympathy with the endeavours of the institute, who, though unable directly to take an active part in the work, might be willing to assist it financially. Referring to the necessity for the existence of such an institute, the chairman said that it was undeniable that the first desideratum in promoting education was a condition of physical fitness, which could only be attained when infants and children were reared in circumstances where healthy growth was possible. Unhappily, however, a large percentage of children in this country were reared in an environment which rendered healthy growth almost impossible. Thousands of children were annually condemned to early graves or doomed to a life of inefficiency or decay by the ignorance or indifference of parents. These defects could not be rectified by coercive legislation, and it was to education alone that we had to look with any sureness for a remedy. Dr. J. C. Thresh, who seconded the motion, said that although the results of the work of the institute had far exceeded expectation, the movement had overgrown its strength from lack of funds, and if the work was to continue there must be greater financial support. The report was then unanimously adopted. Subsequently brief addresses were delivered by Sir George Kekewich, Professor W. D. Halliburton, Surgeon-General Sir Charles Cuffe, Mr. Mayo Robson, and Dr. A. T. Schofield, Professor Halliburton remarking that he did not quite agree with the chairman with regard to the use of education alone—legislation was also necessary. On the motion of the Rev. E. Midwinter, Mayor of Marylebone, seconded by Sir Thomas Barlow, a hearty vote of thanks was accorded to the chairman and the proceedings terminated. Before the close of the meeting, however, the secretary announced that Dr. Thresh, chairman of the council, had given a donation of £100.

INTERNAL DERANGEMENT OF THE KNEE-JOINT.

MANY years ago Hey invented the expression "internal derangement of the knee-joint" to include some sudden change in the internal structure of the joint interfering with its working and accompanied by pain. The phrase is exceedingly convenient, and has been widely used, for it does not commit the surgeon to an exact diagnosis of the condition present. At one time it was thought that all cases of internal derangement of the knee were due to dislocation of one or other of the semilunar cartilages, but it is now known that many different conditions may be present capable of giving rise to the symptoms. In THE LANCET of Jan. 15th last we printed a paper by Dr. Kenelm H. Digby of Guy's Hospital on the Displacements of the Semilunar Cartilages, and in the *Annals of Surgery* for December, 1909, Mr. Robert Jones of Liverpool published an elaborate paper based upon his personal experience of more than 500 operations for derangement of the knee. This is a very large number of cases and has been equalled by few other surgeons, if by any. It is only when a case is examined after the knee-joint is opened that the surgeon can with absolute certainty state the exact lesion that is present. Every surgeon who has had experience in these cases knows how often he has discovered some condition to be present at an operation which he had not diagnosed before the operation. It is interesting to note how varied and how slight are the causes which may lead to derangement of the knee. Mr. Jones quotes as instances of the causes which he has noted, a young lady dancing, a cricketer hitting, an old lady pushing the bed clothes with her foot, a direct blow on the knee, a slight twist, and in each of these cases something was felt giving way in the knee. The symptoms which may be present also vary greatly; sometimes the joint may become firmly locked, sometimes it is moveable; in one case the pain may be very acute and lasting, in another it may be slight and temporary, and yet these differences in the symptoms manifested are not necessarily indicative of differences in the lesion present. In Mr. Jones's paper is contained a full account of the anatomy of the knee-joint, and here he expresses the opinion that the function of the semilunar cartilages is to assist the opposite lateral ligament in resisting lateral movements of the tibia. He tells us that in practically all cases of displacement the cartilage is displaced towards the middle of the joint (or, as he somewhat unhappily expresses it, "inwards"); when any definite protrusion is felt superficially it is due, he tells us, either to bruising or to a buckling of the cartilage. The wedge shape of the cartilage is responsible for the locking of the joint, because the thicker portion of the cartilage has been forced between the bones. The relative frequency with which the two cartilages are affected is, according to Mr. Jones's own cases, as follows: the internal is involved in 93 per cent. of his cases and the external in 7 per cent., and he ascribes this inequality to the anatomical fact that the internal cartilage is more firmly fixed by ligamentous attachments than the external, and therefore it is not capable of such give-and-take as is the external. Another reason he advances is that in a normal relation of femur to tibia the line of force is carried through the inner side of the knee; and again, owing to the shape of the internal articular surface of the tibia, the internal condyle of the femur can glide backwards on the tibia, and thus the range of internal rotation of the femur on the tibia, which is a direct strain on the semilunar, is greater than that of external rotation. Other conditions found in knees which were opened were synovial fringes nipped between the bone, loose bodies, lipomata, osteomata, and rupture of the crucial ligament, while in a certain number of the cases the most careful search failed to reveal the presence of any lesion. With regard to treatment Mr. Jones is very emphatic in insisting on the importance of early and complete reduction of misplaced cartilage, and he never operates unless recurrence has occurred. He discourages operation in those recurrent cases where the symptoms are transient and are not followed by synovitis, but he urges operation strongly in those cases where the recurrent displacement is followed by acute symptoms. He considers operation is absolutely imperative in the case of men who work or stand in dangerous places, where a giving way of the knee may lead to serious consequences. Many interesting cases are reported in the article from which we are quoting; perhaps the most striking is the following. For a long time a young woman puzzled all whom she consulted by intermittent effusions of the knee with locking of the joint but with hardly any local tenderness, and she was able to walk a mile with barely appreciable discomfort. When the knee was examined by the X rays it was found to be full of needles which she had intentionally introduced. It is interesting to note that Mr. Jones in operating on the knee never ties vessels, always uses a tourniquet until the dressings are bandaged, and never drains.

THE RATING OF HOSPITALS: A REASONABLE PROTEST.

A LETTER which appeared in the *Times* on Monday last over the signatures of Mr. Arthur Lucas and Mr. John Murray, respectively chairman and vice-chairman of the Hospital for Sick Children, Great Ormond-street, contained a protest which most people will regard as reasonable whatever views they may hold on the question of the rating of hospitals. As many of our readers know, the out-patient department of the Great Ormond-street Hospital has been provided with new accommodation by the generosity of Mr. W. W. Astor, and now that the improvements have been effected the hospital's rates have been raised as a direct consequence by £505 a year (from £795 to £1300). The authorities of the hospital complain that, whereas the charity should have shown a favourable balance of £200 on the year's work, owing to this imposition it is faced with an adverse account of £300, and they point out that the new department causes greater expenditure rather than increase of revenue, whilst the whole purpose and tendency of the hospital's work is to save expense to the community. They ask for a justifiable reason why the hospital should be mulcted to the extent of £1300 per annum for carrying out this purpose. The complaint seems to us a just one and we think that the borough should have been content with a lighter assessment, since it was obvious that no one gains any profit, pleasure, or privilege out of the additional accommodation save the sick poor, for whose relief the hospital exists. At the same time it may have occurred to the assessors that the hospital serves a far wider area than its own borough and that there was no reason why this should find municipal services for the benefit of poor persons from other boroughs without making the hospital pay for them. The whole question of the rating of hospitals is very difficult. The chairman and vice-chairman of the Great Ormond-street Hospital would solve the question by exempting all hospitals from municipal rates, and many of the medical profession are of this way of thinking. But there are counter-arguments of some force.

THE CHEMICAL LABORATORIES AT UNIVERSITY COLLEGE, LONDON: AN APPEAL.

AN appeal for funds for the new chemical laboratories of University College, London, has been made to the public through the lay press during the week. Signed by Sir Henry Roscoe, as chairman of the Equipment and Endowment Fund Chemistry Appeal Committee, it has received the warm endorsement of Lord Rosebery, Chancellor of the University, and will, we trust, obtain the immediate and favourable notice of the public. The whole scientific world will readily acknowledge the valuable work which has been done in the Chemical Laboratories of University College, London, and it would not be overstating the case to say that the present edifice of modern chemistry owes much of its superstructure to the labours of Sir William Ramsay and his colleagues and his pupils at University College. We all know now what a marvellous stimulus was given to our ideas of the knowledge of matter by the discovery of radio-activity, and nowhere has more earnest and fruitful work been done in regard to the development of the subject than in the University College laboratories. Radio-therapeutics have become possible largely through the researches of Sir William Ramsay, and his recent work promises to bring into the range of every-day application a sufficiency of material by which the curative properties of the rays may be more advantageously studied. The number of researches published during the past 22 years by members of the staff and students of the chemical department of University College amounts to 331, and of these 72 have been carried out by Sir William Ramsay and his collaborators, not the least known of whom is Professor Norman Collie. The total number of researches published from the department from 1887 to 1902 was 115, while the number issued since 1902, when the laboratories were enlarged, to the present time is already 216. In addition to the valuable results of researches obtained in these laboratories, it is important to remember also that men are passing through this interesting scene of original inquiry, preparing to go out into the world to pursue further afield their studies the foundations of which have been so well laid at home. There are very cogent reasons, therefore, why the appeal now made should find a generous response. Sir Henry Roscoe appeals for £70,000 in order that the present hampered accommodation may be supplanted by adequate and well-equipped laboratories worthy of the great work that is being done. The appeal is supported by many influential names in the worlds of literature, science, and art, and we beg to support it heartily. We notice also that, more than is usual, promptitude will be the essence of generosity in responding to this appeal. The authorities possess a short option for the purchase of a very desirable site for the proposed additions. It would be most regrettable if the money was not forthcoming until the site had been otherwise disposed of.

A DISCUSSION ON THE CRUET.

THE abolition of the cruet has been solemnly discussed. First salt is banned on the ground that it delays digestion or has an unfavourable action akin to a mild poison and can further act as an emetic; next pepper is convicted of an irritant effect on the gastric organs, as well as upon the organs of secretion, and, besides, contains an alkaloid; then vinegar may precipitate an attack of gout, while its use to produce a colourless complexion is quoted as evidence of its injurious effects; mustard, like pepper, is an irritant also and its effects as a blister are not forgotten, in addition to which it is a well-known emetic; lastly, olive oil is indigestible, coating food with oil and so preventing the gastric juices from doing their beneficent work. On the face of it we have here a series of serious indictments which might tempt some to regard the very old institution of the cruet as after all a great human error. The acceptance of such a view betrays little knowledge. Each item of the cruet is of decided service in dietetics, and we have something more than the argument that the use of condiments is merely instinctive to support this statement. The classic experiments of Pawlow have shown how important is the rôle of the condiments in diet, how it is they improve appetite and increase digestive power. Mustard, pepper, and salt, used, of course, in sensible amounts, assist the appetite, give a zest for food, and partly by reflex action as well as local action, stimulate the flow of digestive juices and ensure healthy assimilation. Even vinegar is known to have a softening effect on tough fibres, and hence its use is justified in so many instances. Lastly, the use of oil in a salad is a sound physiological procedure, for it supplies an aliment which is deficient in the salad vegetable, while as a vehicle for the uniform distribution of food materials in the human organism it does excellent service. The reasons for the existence of the cruet and of its continued use are, therefore, by no means merely empirical, the institution is physiologically justified.

A NEW OPERATION FOR HÆMORRHOIDS.

MANY are the operations which have been devised for the adical cure of hæmorrhoids, and the enthusiasm with which each in turn is praised by one surgeon is only equalled by the opposition which it meets with from other operators. For instance, Whitehead's operation has been, and is still, regarded by some as the very perfection of methods for the thorough removal of the hæmorrhoidal tissue, but others look upon it as needlessly mutilating and extremely liable to produce stricture. Similar opinions have been expressed in regard to ligature and to the clamp and cautery. The fact is that with any one of these methods a surgeon practised in its use can obtain excellent results, and the failures occur almost entirely in the hands of those who have had but little experience of the method. Success in most cases depends on attention to small points which are often not described in text-books, and are therefore liable to be neglected by those who have not practised the special method to any great extent. In a recent issue of THE LANCET appears an account by Mr. Norman Porritt of Huddersfield of a new operation which he has devised and employed successfully for the radical cure of hæmorrhoids. It consists essentially in the crushing of the base of the pile with a pair of crushing forceps, such as those devised by Kocher and modified by Corner for the appendix. The crushed pedicle is then covered in by drawing together the surrounding mucous membrane by means of a purse-string suture. The operation is a modification of the removal of hæmorrhoids by excision, the real difference being that the vessels of the hæmorrhoids are crushed instead of being tied. It does not appear that Mr. Norman Porritt has performed the operation in many cases, but we have no doubt that it is capable of producing satisfactory results. In all these operations, as in many others, the man who performs the operation is much more important than the method he happens to use. We should like to hear further on the subject when there is the necessary material, for the number of sufferers is very great.

VAGINAL SUTURE IN RUPTURE OF THE UTERUS.

THE best method of dealing with a case of rupture of the uterus is always a most difficult question for the practitioner to decide. In many cases the question is decided for him, since the patient is not in a condition to stand operative interference and her rapid death renders treatment of any kind impossible. At the same time a certain number of these cases recover without any treatment, and it would be easy to quote figures from the monographs written on the subject to prove the apparent efficacy of the different procedures adopted. Undoubtedly the ideal treatment, if the patient is in a condition to stand it, is the removal of the child and placenta by abdominal section whenever they have passed into the peritoneal cavity, and the subsequent removal of the uterus by complete hysterectomy. In this way perfect control of the hæmorrhage and free drainage through the vagina can be secured, and this method has the further great advantage that a source of possible septic trouble in the damaged uterus is removed. The high mortality following this operation, however, has led many surgeons to recommend less severe measures. Of these the one most frequently adopted and the most successful is the plan of plugging the tear with gauze, and so arresting the hæmorrhage and providing for drainage. It is a noteworthy fact that in most of the cases the hæmorrhage, although no doubt severe at the time, soon ceases spontaneously, and if the patient survives the immediate dangers of the accident she does not, as a rule, die from further hæmorrhage. Gauze plugging therefore probably acts rather as a drain than as a hæmostatic, and this may be the explanation of the good results obtained in these cases and the answer to the objection that any firm plugging of the tear is virtually impossible, since there is no means of making counter pressure, at any rate in complete tears. Naturally enough, when the tear has been readily accessible surgeons have made attempts to treat it by suture as well as by plugging. Cases of this kind are to be found in the literature and an interesting example is the one described by Mr. H. J. Paterson in this issue of THE LANCET. In his case the cervix and lower uterine segment were torn through for a distance of four inches, and there was as well a tear in the posterior vaginal fornix, through which a portion of the sigmoid flexure prolapsed into the vagina. The tear extended into the left parametrium, but was complete. The tear in the uterus was sewn up successfully with catgut sutures and the opening in the vaginal vault closed with a purse-string suture round a rubber drainage-tube; two large vessels which were bleeding were controlled by ligatures. Continuous proctolysis was carried out for 60 hours after the operation, and the patient made a good recovery. Mr. Paterson thinks that the advocates of hysterectomy lay too much stress upon the difficulty of controlling hæmorrhage, but in this he hardly does them justice. A considerable number of writers on this subject have pointed out that after the first severe bleeding there is often but little more, and not infrequently when the abdomen is opened singularly few vessels require ligature. In our opinion, besides the fact that any hæmorrhage can be easily and certainly controlled by the abdominal route, the extirpation of the uterus has the great advantage of removing not only a potent source of infection, and this danger is a very grave one, but it has the further advantage of removing a gravely damaged organ and one which, as the recorded cases show, is very likely to give way in a subsequent pregnancy. We quite agree with Mr. Paterson that whenever possible in a case in which it is decided not to open the abdomen an attempt may be made to suture the tear or part of the tear, in addition to carrying out drainage by plugging, but we think he goes too far in affirming that if suturing be practicable the performance of hysterectomy is an unsurgical procedure. There are certainly cases in which any attempt to perform hysterectomy can only lead to the death of the patient, but there are just as certainly other cases in which the patient will have the best chance of recovery if the abdomen is opened and the uterus removed, and in which her chance of recovery will be very poor indeed if the operator contents himself with attempting to suture the tear through the vagina, usually a very difficult operation, and one very likely to be carried out imperfectly. It is, indeed, impossible to lay down hard-and-fast rules for the treatment of these cases, each must be judged on its merits, and the best results will be obtained, not by the adoption of any one method of treatment in all cases, but by a judicious selection of one or other of the varying methods available in cases of varying severity.

RECURRENCE OF CANCER 18 YEARS AFTER AMPUTATION OF THE BREAST.

IN the *Boston Medical and Surgical Journal* of Jan. 27th Dr. C. A. Powers has reported a case of recurrence of cancer of the breast after a remarkably long interval. On April 14th, 1889, he assisted at an operation for cancer of the breast on a married woman aged 42 years. The operation was of the Volkmann type—excision of the breast with clearing out of the contents of the axilla. The growth was diffuse and irregular, of the size of a very small apple, and occupied the lower inner quadrant. Microscopic examination showed that it was scirrhus cancer. The axillary glands were enlarged but not malignant. During the first year the patient was examined every three months, during the second year every four months, and afterwards every six months. No evidence of recurrence was found until December, 1907, 18 years and 8 months after the operation, when a small, hard mass was found about the middle of the scar. This was excised and found by microscopic examination to be cancer. In May, 1909, 18 months after the second operation, a small, hard mass was found in the scar near the site of the previous recurrent growth. In June it was excised and the microscopist reported that it was a "carcinoma of relatively mild malignancy." Late recurrence of cancer of the breast after operation was discussed by the American Surgical Association at its Washington meeting in 1907. Dr. Ranshoff reported a case in which he found a relapsing nodule in March, 1904, 21 years after an operation by Professor T. A. Reamey for microscopically proven carcinoma of the breast. Such cases show that the three years' freedom from recurrence which has been laid down as an indication of the cure of cancer of the breast is unreliable. Mr. Thomas Bryant pointed this out in our columns not many years ago,[1] and stated that the interval between amputation and recurrence is most uncertain. In half of his cases of recurrence the interval was five years or less; in the other half the interval varied from 6 to 32 years, and in at least two-thirds of these was more than 10 years.

A TELEGRAM from our correspondent in Madeira states that the outbreak of enteric fever which has been reported from that island is local. 14 cases have occurred, which are all doing well. Drastic measures have been taken to prevent the spread of the epidemic.

THE Morison lectures of the Royal College of Physicians of Edinburgh will be delivered in the College Hall on Feb. 28th, March 2nd, and March 4th by Dr. William Aldren Turner, who will take for his subject Epilepsy.

WE regret to announce the death, on Feb. 14th, at Kibworth Harcourt, Leicester, of Sir Charles Hayes Marriott, M.D., F.R.C.S., consulting surgeon to the Leicester Infirmary, in his seventy-seventh year.

Dr. T. Kilner Clarke, formerly surgeon to the Huddersfield Infirmary, died in that town on Feb. 14th, in his sixty-seventh year.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 18th, 1832.

RELIEF OF THE SPASMS IN THE CHOLERA. EFFLUVIUM OF BARK.

To the Editor of THE LANCET.

SIR,—Permit me, through the medium of your Journal, to draw the attention of medical men to the use of frictions with tincture of opium, for the purpose of relieving those spasms in cholera which seem to be the chief cause of agony in this disease. I am subject to tonic spasms in the calves of my legs, which I believe arise from the peculiar condition of my stomach; on one occasion, when that organ was more than usually deranged, they became excessively painful, and so impeded my power of locomotion, that I had great difficulty in getting across the room with the help of two sticks. This affection was completely removed by rubbing into my legs about four ounces of tincture of opium, surcharged, however, with double the usual quantity of that substance, and did not recur again, though the state of my stomach continued unaltered for a long time afterwards. I may observe, that I dare not take the smallest quantity of opium internally, from an idiosyncrasy in my constitution relative to it.

I cannot help thinking, that if the quantity of a quart of the hot supersaturated tincture of opium was well rubbed into a cholera patient, it would at least have the effect of making him die easy. It is moreover well known, that in many cases the stomach will retain nothing.

I am, Sir,
Your obedient servant,
CHARLES R. GORING, M.D.

P.S. I once read in a book of travels (the title of which has escaped my memory) that in some very aguish district of South America, where it chanced that a large magazine of cinchona was accumulated, the persons who inhabited the building were observed to enjoy a complete exemption from intermittent and remittent fever; the *odour* of the bark, it seems, was sufficient to protect them.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of this association will take place, by the courtesy of Mr. Rothsay C. Stewart, at the new Leicestershire and Rutland Counties Asylum at Narborough, on Feb. 24th, at 3 o'clock, under the presidency of Professor W. Bevan-Lewis.

---

[1] THE LANCET, May 17th, 1902, p. 1397.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

By Harry Campbell, M.D. Lond., F.R.C.P. Lond.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

VII.[1]

The Ability of the Blood-vessels to withstand the Long-continued Strain caused by the Blood Pressure.

THE blood flows in its channels under varying degrees of pressure. In the larger arteries the pressure may sometimes reach 200 mm. Hg; even in the capillaries (e.g., those of the foot in the upright position) it may exceed 100 mm. Hg. This pressure causes the vessel walls to be put on the stretch. Now the long-continued stretching of organic tissue tends to cause a progressive, permanent elongation (i.e., elongation beyond the power of recoil) of its constituent elements; it is therefore evident that the elements composing vascular tissue must be pecularly adapted to resist such a tendency, for otherwise the blood-vessels would undergo a progressive yielding, laterally and lengthwise, becoming increasingly dilated and tortuous.

Consider how readily such an organ as the bladder yields before a few mm. Hg of pressure, reaching as it may beyond the umbilicus in the course of a few days. Consider, again, how a thick-walled ovarian cyst may by an equally low pressure be made to expand to enormous dimensions. Consider, further, how even bone may give way before the sustained action of quite moderate pressure: the dentist is able to expand the palatal arch by continued pressure of moderate degree, and we may observe the angle of the edentulous mandible, in spite of the great strength and resistance of this bone, gradually opening out in consequence of the altered incidence of the masticatory forces. I say nothing of the expansion which the frontal and maxillary sinuses undergo when, from blockage of their outlets into the nasal chambers, they are subjected to a *plus* internal pressure, since in these cases the factor of pressure-absorption may come into play.[2] If, then, dense bone yields before long-sustained strain of quite moderate degree, is it not strange that the soft vascular tissues, subjected as they are to a life-long stretching of considerable extent, do not likewise undergo progressive yielding? Seeing that they do not, it is obvious that they must be specially safeguarded against the liability; and, indeed, it will be found that not the blood-vessels only but all the cavities and tubes of the body, the walls of which are subjected to continuous or intermittent pressure from within (e.g., the stomach, intestines, trachea, bronchi, and gland ducts), are similarly adapted to resist the tendency in question.

It should be noted that mere strength of wall—mere ability to resist rupture under a high degree of internal pressure—will not *per se* prevent the blood-vessels from steadily giving before the long-continued pressure of the blood. It having been proved that it needs a pressure some 30 times the normal arterial pressure to rupture an artery, there is a temptation to assume that the object of this great strength is to render the vessel secure against rupture by the blood pressure. Such, however, is not the case, for there is no necessary relation between the strength of a blood-vessel and the amount of blood pressure it is called upon to bear. Thus, in spite of the fact that the aorta has to sustain a greater pressure than the inferior vena cava, its bursting pressure is actually less. Wintringham showed, as long ago as 1740, that while it required no less an internal pressure than 176 pounds to rupture the inferior cava of the sheep, the aorta, although possessing considerably thicker walls, gave way before a pressure of 158 pounds.

We must, in short, keep distinct in our minds the property by virtue of which a tissue can resist rupture under sudden and forcible stretching, and that which enables it to resist permanent elongation by long-continued stretching of moderate degree. This distinction is well shown in the case of bone; it would require great force to fracture the mandible at the posterior angle, but, as we have seen, the long-continued action of a comparatively moderate force is competent to widen out this angle in the edentulous. While, however, the pressure which a particular blood-vessel has to sustain and its bursting pressure are to some extent independent of one another, we shall find that those parts of the cardio-vascular system which have to resist the greatest blood pressure are, on the whole, the most stoutly built. Thus the walls and the valves of the left heart are thicker than the corresponding parts of the right heart; the systemic arteries are thicker than the pulmonary arteries, while both are thicker than the corresponding veins; similarly the blood-vessels of the lower extremities are more stoutly built than those of the upper extremities, in accordance with the difference in the amount of hydrostatic pressure each set is called upon to sustain.

We have now to attempt to explain the peculiar property of vascular tissue which enables it to bear long-continued strain without undergoing a progressive lengthening. One fact stands out prominently in this connexion—the fact, namely, that the ability of a tissue-element to resist being permanently lengthened by stretching is intimately related to, if not identical with, its elasticity. A non-elastic substance shows no tendency to return to its original length after being extended; it remains permanently lengthened, and if it be again stretched it undergoes a further permanent lengthening. Thus so long as the stretching force continues to act, so long does the process of elongation continue—there is a progressive yielding, or giving, of the stretched substance—a summation of individual elongations. This does not happen, however, with a perfectly elastic substance. Such a substance is not permanently lengthened by being stretched: it recoils to its initial length upon the removal of the stretching force; and this power of recoil inherent in a stretched elastic substance continually antagonises the tendency of the stretching force to cause permanent lengthening. Consequently the more elastic a substance the more effective is it in this respect.

Now the blood-vessels are pre-eminently endowed as regards elasticity. This high degree of elasticity they owe to their richness in two special kinds of tissue—yellow elastic and muscle tissue. The latter, though comparatively inelastic in the non-contracted state, assumes, as we have seen, a high degree of elasticity when under contraction. Yellow elastic tissue and muscle in its contracted state are, then, peculiarly resistant to permanent lengthening by stretching, and it will be found that the proportion of these tissues in both arteries and veins is closely related to the amount of blood pressure they are required to sustain.

Relaxed muscle being less elastic than contracted muscle is, for the reason mentioned, more apt to "give" permanently as the result of stretching than contracted muscle. The truth of this is attested by many facts. Thus the process of cardiac dilatation takes place during the period of diastole, when the muscle-fibres are in a condition of considerable relaxation; similarly, dilatation of the stomach results from the distension of this organ when its muscle fibres are relaxed—even in the absence of pyloric obstruction gastric atony may alone lead to the condition; again—what concerns us more particularly in this place—chronic hypotonus of the vascular media is, as we shall see, a potent factor in the production of arterial tortuosity as well as varicosis.

Among the tissues which oppose considerable resistance to permanent lengthening by stretching dense fibrous tissue occupies a prominent place. This is shown by the behaviour of tendons and scar tissue. Tissue of this kind is, however, quite incompetent to fulfil the many requirements of the vascular system. It is true that the blood-vessels contain a certain amount of fibrous tissue, but it is for the most part loosely arranged, and is, moreover, but rarely subjected to more than moderate strain, inasmuch as (except when the blood pressure is considerable) even moderate contraction of the media prevents all the non-muscular elements of the vessel wall from being more than slightly stretched.

My attention was first drawn to the important part played by active contraction of the media in preventing the blood-vessels from becoming dilated and tortuous when making observations on the temporal arteries. In early life these vessels as a rule present no tortuosity, but they become tortuous in course of time, sometimes earlier, sometimes later. On the one hand, commencing tortuosity may be observed in infancy, and on the other it may be all but absent in octogenarians. There seems, indeed, to be a tendency for tortuous temporals to recover something of their pristine straightness in advanced life owing apparently to a falling of the blood pressure.

---

[1] Nos. I., II., III., IV., V., and VI. were published in THE LANCET of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), 22nd (p. 256), and 29th (p. 318), and Feb. 5th (p. 388), respectively.

[2] That the skeleton is not distorted by muscular action is due to the antagonistic action of opposing muscles. When, however, the action of one set of muscles predominates over that of its opposing set, marked deformity may result, as in the kyphosis of paralysis agitans, in which affection the action of the flexors of the trunk predominates over that of the extensors.

I once thought, as some probably still do, that decided tortuosity of the temporal arteries, and tortuosity even in moderate degree of the radial arteries, indicated the existence of protracted high blood pressure; and contrariwise, that the absence of decided tortuosity in the former and of tortuosity, even moderate, in the latter was proof positive that the patient had not been the subject of it. This view had to be abandoned, however, when I found that marked temporal tortuosity and some degree—indeed, sometimes a considerable degree—of radial tortuosity may occur in subjects of habitually moderate blood pressure; and, again, that in subjects of protracted high pressure the temporals may present very little tortuosity, while the radials may be perfectly straight. As a matter of fact, the temporal artery may not only present extreme tortuosity in subjects of low blood pressure, but, what is even more remarkable, it may in such subjects be highly tortuous on one side and exhibit little or no tortuosity on the other. I have a case of this kind under observation at the present time: on the left side the vessel is one of the most tortuous I have ever seen, and this tortuosity is accompanied (as morbid vascular tortuosity always is) by dilatation and thickening; on the right side it shows very little tortuosity, dilatation, or thickening. How can this difference be explained in such cases? Obviously not by reference to the general blood pressure. I submit it is due to the fact that whereas on the one side the artery has been habitually in a state of normal tonus, or possibly even of hypertonus (so that none of the coats of the vessel has been permitted to be stretched beyond a certain narrow limit), on the other side the habitual condition of the vessel has been one of hypotonus, allowing not only the muscle fibres, but all the vascular elements, to be put on the stretch. This condition of hypotonus further predisposes to tortuosity by increasing the tension in the vessel-wall, which it does in two ways—by causing a widening in the lumen of the vessel, and, to a less extent, by diminishing the local resistance to the blood flow and thus increasing the local blood pressure. It is not, therefore, surprising that protracted hypotonus of the temporal artery should lead to a permanent yielding of its walls, for not only does hypotonic muscle fibre offer less resistance to permanent lengthening than vigorously contracted muscle fibre; not only, again, does it fail in its function of bearing off the strain of the blood pressure on the other vascular elements; but it further leads to an augmentation in vascular tension in the ways just mentioned.

The thickening observed in arteries which have become dilated and tortuous as the result of long-continued hypotonus is, I believe, mainly due to a hyperplasia of the connective-tissue elements resulting from the irritation set up by chronic over-stretching of them. We have seen that with normal tonus, and still more with hypotonus, the vascular strain caused by the blood pressure is largely borne off from the connective tissue of the vessel wall. With hypotonus, however, the connective tissue elements are subjected to considerable stretching, under the stimulus of which they increase and multiply.

From the foregoing it is obvious that marked temporal tortuosity (although perhaps more common in subjects of high blood pressure than in others) does not necessarily indicate persistent high blood pressure. The like is true of radial tortuosity. We are not justified in concluding that this is sure evidence of long-continued high blood pressure. Protracted hypotonus of the radials is competent to cause them to be tortuous even in the absence of a plus blood pressure. Nevertheless, radial tortuosity is more frequently the result of persistent high blood pressure than is pronounced temporal tortuosity. I say "pronounced temporal tortuosity," because the temporal arteries are normally slightly tortuous, in adults at least.

While it is possible to get marked tortuosity of the temporals, and even of the radials, in subjects presenting habitually moderate blood pressure, we may, on the other hand, find the former vessels but little tortuous and the latter perfectly straight in subjects presenting persistent high pressure. Shortly after I had observed that no constant relation obtains between marked temporal tortuosity and persistent high blood pressure, I came across a passage in one of Sir Clifford Allbutt's writings affirming that even in advanced cases of granular kidney the radial arteries may show no signs of dilatation and tortuosity, but, on the contrary, may be firmly contracted and perfectly straight. On looking back I was able to recall (as, doubtless, many physicians can) several such cases, and, indeed, at the present moment I have under observation the case of a medical man in an advanced stage of granular kidney who, although he has had for many years a phenomenally high blood pressure, and more than once threatenings of acute uræmia, nevertheless presents small and perfectly straight radials.

Now, seeing that hypertonic arteries remain undilated and straight even when subjected to long-continued high blood pressure, and that hypotonic vessels become dilated and tortuous, even in the absence of high blood pressure, we must conclude that the tonicity of the muscular media plays an important part in obviating dilatation and tortuosity.

The tortuosity (with its attendant dilatation and thickening) met with in the vessels carrying on the collateral circulation after ligature of a large arterial trunk, such as the iliac, admits of the same explanation as the tortuosity which affects the temporal and radial arteries as the result of chronic hypotonus. We may assume that directly after ligature the collateral arteries and arterioles relax so as to facilitate the flow of blood to the parts in which the supply has been curtailed, and that in consequence the hypotonic vessels yield before the blood pressure, becoming dilated, tortuous, and thickened, just as happens in the case of a chronically hypotonic temporal or radial artery.

Exactly how the collateral vessels are made to feel the necessity to dilate in these cases I cannot say. We must suppose that the affected tissues are in some way able to make their want of blood felt by the vessels supplying them; and, indeed, there is evidence to show that the circulatory activity of a part is in large measure determined by local needs. Some authorities, however, give a different explanation of the changes which take place in the collateral vessels after ligature of an arterial trunk. There can be no doubt that immediately after the ligature the circulation through the collaterals becomes quickened. This acceleration is, on my view, mainly due to a primary dilatation of the vessels, but Recklinghausen (whom Thoma follows) explains it differently: "After ligature the collateral branches have not only their own capillaries but those of the ligatured artery at their service. The capillary area open to the collateral branches has thus become larger," and inasmuch as "the resistance which the blood stream has to overcome is mainly in the capillaries," there takes place "a fall in the resistance which the blood in the collateral branches has to overcome," and this leads to a more rapid flow of blood in them. Now I admit that, even in the absence of any such primary dilatation as I have postulated, an acceleration of the collateral circulation would take place, although in my opinion not, as Recklinghausen assumes, as the result of an increase in the number of the capillaries available (seeing that the resistance which the capillaries offer to the blood-current is practically *nil*), but rather from an increase in the number of available arterioles. But, even so, I submit that the acceleration under discussion is mainly due to a primary vaso-motor dilatation of the collateral arteries and arterioles, for otherwise I do not see how we are to explain the pronounced dilatation, tortuosity, and thickening which these vessels undergo.

Thoma views the matter differently. He contends that the dilatation is a direct result of the quickening of the blood-flow in accordance with the following law, which his study of the development of the blood-vessels in the chick has led him to formulate: "The increase in the size of a vessel lumen depends upon the rate of the blood current." How or why mere acceleration in the blood-flow should cause such an increase he does not tell us. The thickening in the vessel wall he attributes to the augmented vascular tension resulting from the increase in vascular lumen; for, according to a second law enunciated by him, "the growth in thickness in the vessel wall is dependent upon its tension." Proof of this he finds in the varying strength of the arterial, capillary, and venous walls. In my view the thickening is due to the increased tension in the connective tissue elements of the vessel wall resulting from chronic hypotonus.

Enough has now been said to render it evident that an important function of the muscular tissue with which all the arteries in the body are endowed is, by its active contraction, to prevent them from progressively yielding before the ceaseless pressure of the blood within. Such being the case, it is no surprise to find that there is a definite relation between the amount of muscular tissue (as well as of the elastic tissue) in any given artery and the amount of blood pressure it is normally called upon to bear. Thus we find that the arteries of the lower extremities are more richly endowed with muscular (as well as elastic) tissue than are those of the upper extremities and of the head and neck, owing to the high degree of hydrostatic pressure they are required to sustain in the upright position.

In accordance with this function of the arterial muscular media we should expect the degree of contraction of the latter to vary with the degree of blood pressure the vessel is called upon to sustain; and there can be no doubt that it does so vary. When, e.g., the horizontal position is changed for the vertical the dependent arteries contract, not only to prevent their being sagged out by the hydrostatic blood pressure (thus obviating an undue accumulation of blood in dependent parts), but also for the purpose of preventing that progressive yielding which results in their permanent dilatation and tortuosity. Again, when, in consequence of a widespread arteriolar contraction in the systemic circuit, the blood pressure in the pre-arteriolar vessels rises, these latter tighten up in self-defence. This heightened tonus of the pre-arteriolar vessels may be observed in granular kidney, and so long as it persists, the vessels remain straight and undilated; if in such a case we examine the radial artery, e.g., we find that it is cord-like and perfectly straight. When, however, with arteriolar hypertonus the pre-arteriolar vessels remain hypotonic the latter undergo progressive yielding. The radials in such a case will be found to be dilated and tortuous, and the blood pressure *plus*.

I cannot, of course, prove that the largest arteries, such as the aorta and its main branches, tend to become hypertonic as the result of the heightened pressure brought about by generalised arteriolar constriction. I have little doubt, however, that such is the case, and that defect in this protective function may lead to injury in the vessel-wall. Whether, e.g., the aorta shall, or shall not, become dilated in granular kidney is not merely a question of whether it is atheromatous or otherwise diseased, but also of whether the muscular elements rise to the occasion and become sufficiently hypertonic to withstand the strain of the persistent plus pressure. I, indeed, incline to the opinion that the alterations in tonus manifested by the pre-arteriolar vessels (at all events in all arteries as large as, and larger than, the radial arteries) are in the main protective, and that they have comparatively little influence, either in regulating local blood-supply or in modifying peripheral resistance, with both of which functions the arterioles are essentially concerned. Thus, so far as concerns the blood-supply or the pre-capillary resistance in the upper extremities, it matters little whether the radial and ulnar arteries are hypertonic or hypotonic. In either case the tissues they supply can be either deluged with blood or altogether bereft of it by modifications in arteriolar tonus. I do not, of course, deny that when it is needful to bring about a maximum supply of blood to a part arteries of the size of the radial undergo active dilatation. My object is to emphasise the fact that an important function of tonus is to protect the non-muscular elements of the vessel wall from the strain caused by the blood pressure, and to obviate a progressive widening and lengthening of the vessels which the constant stretching to which they are subject would otherwise entail. I submit that the main purpose served by the muscular tissue in the larger arteries is to resist the strain caused by the blood pressure. Were the arteries devoid of muscular tissue the entire arterial tree would very soon become aneurysmal.

The part played by the muscular elements in the arterial wall in preventing a progressive yielding is further shown by the fact that arterial aneurysm only occurs when the medial coat has suffered serious damage.

(*To be continued.*)

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The 12-h.p. Adler Car.

MUCH has been heard of late years of the Adler Cars, owing to their success in reliability and other trials, among which are such feats as a first and second in the 1909 Scottish Reliability Run, four prizes and six reliability shields in the Prince Henry Contest, &c. The medical man more than any other class of motorist needs a car not larger than is absolutely necessary for his requirements, chiefly because of that one important consideration, the cost of upkeep; yet most hanker after comfort, a smart appearance, and an engine which will "pick up well," even when passing on a hill from a steep pitch to a gradient less severe. It is for these reasons so many desire a small four-cylinder. As the Adler Cars struck me as fulfilling these needs, I was glad to accept the invitation to sample one, kindly given me by Mr. Edwards, a director of Messrs. Morgan and Co., Limited, who are the sole concessionnaires for Great Britain for this make.

Usually I have taken a car through Kent for purposes of testing; for a change I decided to try the other side of London. It was in most unpropitious weather, with gloom, darkness, dirty mists, and muddy streets, that on a recent occasion I mounted one of these cars at Charing Cross—not pleasant for the tester, but even more unpleasant for the car to be put through its paces in. The roads were skiddy and unusually heavy. One turn of the starting handle and the engine commenced to work, but so silently that at first I thought it was not going. It started, too, on the magneto, the extra coil and accumulator ignition not being needed. Along the crowded streets, in and out of the traffic, the car flew, on top speed, too, even though frequently we had to pull up rather sharply, and what struck me as a special good feature was that even after an actual halt it started off again on the third (top) speed. Round by St. George's Hospital, along High-street, Kensington, through Hammersmith, which was in a state of "electionitis," so that the breaks had there a good testing as we twisted among the erratically driven voter-laden cars. On past Staines, up Egham Hill, ascending Sunninghill, then to the right by undulating roads to Bracknell, and so to Wokingham, and all but Sunninghill on the top speed—certainly a good performance for a small 4-cylinder, especially as there were three in the car, and as I, a novice at driving this make, was for part of the time at the wheel. Then to test the behaviour of the car on really rough cross-country roads we made for Barkham, up some steep bits that the second speed, however, laughed at, by Arborfield Cross, Shinfield, Three-Mile Cross, and so to Grazeley Court, the village known to so many through Miss Mitford's work. The roads were exceptionally rough and heavy, and yet so excellent is the suspension that no one could, I am sure, have desired more in the way of quiet, even running. I was astonished to discover, too, that though we had made a non-stop run of some 50 miles the radiators were so cool that I could easily keep my hand in close contact with them. The run back to town was made viâ Reading and Maidenhead, which demonstrated well the car's speed qualities on the road as well as the simplicity of control. In fact, I found that the driver has little more to do than to steer and manipulate the throttle, a conveniently located lever on the steering wheel. There is no timing lever to worry about and the ignition is fixed. There is no bother as to lubrication; it is automatic by a gear-driven pump in the crank chamber. The car seems one designed for the medico-motorist who is his own chauffeur, and though admittedly of low power it seems capable of going anywhere and of doing anything. The weight has been kept down—an important item when fuel consumption and tyre upkeep have to be considered. In short, I found that this little car leaves little or nothing to be desired, especially in regard to smooth running and suspension. I rather tried the springs on the homeward journey, for Mr. Edwards allowed another passenger, whom we picked up at Grazeley, to bring a huge box, which was fixed to a grille on the back of the car, but this extra weight did not in any way interfere with the smooth running. The body, while not large, is comfortable, and yet compact. The steering is easy, and, without any claim to experience, a novice could manipulate the gear, changing noiselessly, and, as already stated, an average speed, well up to the legal limit, can be maintained, and nearly all my 100 miles were done on the top speed; even severe hills were mounted on the second speed, and with the first any pitch could be negotiated. So much for my run; now as to the mechanical details.

The motor is combined with the gearbox, thus ensuring absolute alignment of engine, clutch, and gearbox under all stresses or strains of the chassis; and as provision is made so that the clutch can be taken out without dismounting any other parts, this unit system of construction obviates the loss of power which a universal joint between the clutch and gearbox necessitates, and is at the same time minus any disadvantage. The bore of the four cylinder is 75 mm. each, and the stroke is 100 mm. The cylinders are cast in pairs, and each pair is surrounded by a common water jacket. The combustion chambers are likewise water-jacketed. The distributing wheels for cam shaft, water pump, and magneto are driven off the crank shaft and are supported by long bushes in the motor case, and work in an oil bath. The valves are all on one side, mechanically operated, interchangeable, and the valve lifters are adjustable and work in short guides, thus obviating possible jamming of the lifter in the guide and the trouble that may occur if one sticks and perhaps fractures. The control is by a hand-operated throttle, the lever for which is conveniently placed on the steering wheel. The carburettor is of the spray type, with an automatic additional air valve, thus ensuring a correct mixture at all engine speeds. Ignition is by magneto of the high-tension variety, and coil and accumulator. Each mode of ignition has its own separate sparking plugs. Water cooling is by a centrifugal pump, which is accessible, and if needed it can be readily dismounted. The pipes are of ample dimension. A substantial radiator is fitted which struck me as free from the tendency of so many of its species, that is, a liability to leak. A fan at the back assists the cooling, and is mounted on an adjustable bracket, which automatically accommodates itself to the stretch of the belt by the aid of a tension spring.

Lubrication is by pump, through an indicator on the dashboard, to the various bearings and gears, which are thus kept constantly oiled, all excess of oil being returned to the pump in the crank case. The clutch is of the cone type, metal to metal, runs in oil, and can be detached without the disturbance of any other part. From actual driving I found its engagement most easy, and that it permitted of very gentle starting. The change-speed gear provides three forward speeds and a reverse. It is designed so that passage from each speed direct to neutral or any other speed is possible without the need to pass through any intermediate gear. The shafts run on ball-bearings, are short, and the change is effected by the now deservedly popular gate, all the locking parts being protected in the gearbox. The top speed gives a direct drive, and on that speed the secondary shaft is not driven. The transmission is by cardan shaft, which runs through a tubular casing, carried from a socket bolted to the differential gearbox. Angular stay rods extend from the universal joint to each end of the back axle, thus forming a perfect torque member. The drive is by the usual bevel wheel and the axle runs on very large ball-bearings, and two cast steel cases support the weight and contain the live axle to the ends of which the wheels are keyed.

Each car has two brakes, one acting on the cardan shaft and differential, and the other, actuated by a hand lever, operates on two brake drums which are fitted on both driving wheels. The frame is made of pressed U steel and is exceedingly strong, the springs are semi-elliptic, and on the four-seater inverted C springs are fitted at the rear; the wheel base is 7′ 10″ for a two-seater and 8′ 10″ for the four-seater; the track is 4′ 3″. As standard 760 mm. by 90 mm. tyres are supplied. The special Morgan two-seater, with a third seat at the back for the groom, fitted with high side-doors and their new wind screen, seems an ideal car; a side-entrance four-seater is also built, as well as a most cosy landaulette.

The Rebate on the Petrol Tax.

Drivers of commercial vehicles and medical men can, of course, claim the full rebate of 3*d.* per gallon on all petrol used by them up to Dec. 3rd last, and subsequently to that date a rebate of one-half of that tax. The claim must be made on Form No. 232 B, which can be obtained from the local officer of Customs and Excise, and each certificate or receipt for petrol bought must be worded as follows:—

> Sold to ...... of address ...... gallons of petrol spirit on which the full duty has been paid to the Crown.

This certificate may be printed or written on the invoice or delivery note. Claims may not be made oftener than once a month and the spirit must have been used within six months of the date on which the claim is made, but the first period has been extended to eight months, so allowing those who apply forthwith to obtain the rebate of the tax which was imposed in April last year.

THE ETIOLOGY OF EPIDEMIC POLIOMYELITIS: RESEARCHES AT THE ROCKEFELLER INSTITUTE.

IN 1907 there was a severe epidemic of poliomyelitis anterior acuta along the seaboard of New England. As a result there were many deaths, and over 1000 of the patients are now permanently crippled. Dr. Flexner and his associates at the Rockefeller Institute consequently had access to a large number of cases, and made numerous attempts to transmit the disease to monkeys by the inoculation of the subarachnoid fluid obtained by lumbar puncture of patients at different stages of the disease. They failed, as they had previously done with the other laboratory animals. But the non-transmissibility of the disease by this means made it probable that no ordinary bacterium was responsible for it. In 1909 there was a less extensive epidemic; it was more local, and there were only a few hundred cases. This time the Rockefeller Institute succeeded in obtaining material from the central nervous system from two patients who died. One of these children, a case of average severity as regards the paralysis, died on the seventh day, and from it they succeeded in obtaining one inch of the lumbar cord. From a severe case which died on the fourth day they obtained the whole cord, but in both cases the brain was refused. From this material Dr. Lewis and Dr. Flexner have now inoculated 11 series of monkeys, and the virus has in no way diminished in potency. The animals are susceptible whether the virus is introduced into the central nervous system or by the subcutaneous, peritoneal, or intravenous route. Injection down the trachea has not, however, yet produced the disease. The lesions are always in the same locality, that is, cord-bulb, spinal ganglia and roots, and the meninges covering them, and rarely in the cerebrum. The lesions tend to preponderate low down. Of the 81 cases, the legs were affected in 40, both legs in 20, all four limbs in 10, the arm in 31, and the neck alone in 1 case, although it was often implicated along with other regions. In only 8 cases were the bulb and cortex affected; in these facial paralysis was the feature. It is a blood-vascular disease apparently, not travelling by lymph channels, except that the glands in the neighbourhood of the site of subcutaneous inoculation become inflamed; but they never do so except in the neighbourhood, and never at all after internal inoculation. Moreover, little virus is found in the spleen, liver, or bone marrow. Even the blood is of low virulence, and that only early in the disease.

As regards the *nature of the virus*, it is very active, but invisible even by special illumination. It is not arrested by the finest filter. So far, the investigators have not succeeded in staining it nor in cultivating it, unless a transmissible cloudiness in certain media may be regarded as a culture. These cultures do not transmit the disease, thus differing from the invisible organism of pleuropneumonia. The question arises whether it is a saprophyte, for so far no invisible one is known. May it not be a bacterium after all, for it resists 30 days at − 2° C.? Drying for seven days over caustic potash does not diminish its virulence, nor does admixture with glycerine. It even resists 5 per cent. phenol. Numerous suspensions in water and long keeping do not render it inactive; but it is sensitive to heat, becoming inert at 45° C. In its transmissibility it shows many analogies with the diplococcus intracellularis; and Dr. Flexner believes that both organisms enter and leave the body *viâ* the nares, the cribriform plate, and the cerebrospinal fluid. It will be recollected that he proved the possibility of this with regard to the Weichselbaum coccus by introducing cultures low into the theca vertebralis and later finding the organism in the monkey's nares; and he has now found that at one stage of poliomyelitis the cerebro-spinal fluid does show virulence and suggests this route as worth inquiry. In this connexion recent work of Levaditi at the Pasteur Institute shows that the saliva is infective while still in the gland and suggests further investigation. Dr. Flexner, however, from the character of the lesions, thinks that poliomyelitis begins in the meninges. Even after a very slight attack an animal strongly resists re-inoculation. This is only in conformity with the rarity of second attacks in human beings, although there have been a few cases where, as far as clinical evidence goes, what appears to be a poliomyelitis has occurred in persons already showing infantile paralysis. Relapses or recrudescences are perhaps less rare. Whether the strictly abortive attack confers immunity is another question which Dr. Flexner hopes will very soon be decided by his experiments. It can be answered both by inoculation experiments and by the results of the immunity reactions. The material of this kind is still insufficient to permit report, but very soon there promises to be definite information, for several of the monkeys have manifested merely a slight general malaise without paralysis or even weakness. Those inexperienced in observing the animals might indeed have believed them in quite good health, as no fever is shown in the prodromal stage. But Dr. Flexner is unable to indicate as yet the clinical symptoms which precede the paralysis.

Incubation has varied from 4 to 33 days. The average is about eight days, as in human beings. The recovery of function, as in human beings, is complete after a slight attack, but only partial when the attack is severe.

The *mortality* seems to be higher than in human beings, 50 per cent. of the monkeys having died. As far as the, as yet, imperfect study of the symptoms permits, Dr. Flexner believes that Landry's ascending paralysis may be often due to this virus, as further observation will perhaps demonstrate.

It is interesting to note that although only monkeys are susceptible to this particular virus, other animals are attacked by a poliomyelitis; for instance, nervous distemper of the dog is of this nature, but pathologists have not yet succeeded in transmitting it; and the poliomyelitis of chickens has not been successfully inoculated. In rabbits the Shiga bacillus causes a hæmorrhagic poliomyelitis, generally cervical. So it is quite clear that there is a whole genus of organisms capable of producing this anterior horn syndrome, but it is pretty clear, too, from Dr. Flexner's researches that the human form is specific.

The post-mortem examination of the monkeys makes it quite clear, as clinicians and pathologists have for some time suspected, that the affection is not confined to the anterior horn. In the monkeys which died inflammation was always found in the intervertebral ganglia and spinal roots. The infection seems to be located in the pia and to spread thence *viâ* the trabeculæ into the central nervous system. Sections show a considerable small round-cell infiltration of the ganglia on the spinal roots. The cells are of the mononuclear type and occur also in the subarachnoid space, and in the cord, especially round the anterior horn, an abundant round-cell exudate, and dilatation, enlargement, and sometimes rupture of the blood-vessels are found. This implication of the roots and ganglia explains the severe pains of which adult cases often complain. In the child, of course, the general distress often masks the local pain.

It is interesting to note that in Weichselbaum's laboratory they have also succeeded in inoculating the monkey with the virus of anterior poliomyelitis. We may have strong hope that in a very short time the completion of these researches will provide us with a means of immunising human beings against still another contagious disease, or at least of cutting short an attack, as is now the case in cerebro-spinal meningitis. But even if this hope is not realised, Dr. Flexner's experiments will show us the path of infection, and thus furnish another means by which to prevent disease; for up to now we have had to fight quite in the dark against an unknown foe, and means of prevention cannot but lack in precision under such conditions. But when we know the avenue of infection means of prevention are often found to be very simple. Even in the case of poliomyelitis, where we scarcely know the child is sick until the disease is at its worst and paralysis has occurred, a way may now be found.

LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

SEVERAL matters of medical interest came before the Education Committee of the London County Council at a meeting on Feb. 9th.

Schools for Tuberculous Children.

The special schools subcommittee reported that the Paddington Dispensary for the Prevention of Consumption had applied for assistance from the Council in the establishment of a special school for children suffering from, or predisposed to, tuberculosis, and children discharged from sanatoriums and convalescent homes, and being treated by the dispensary. At present 300 children between the ages of 5 and 15 attend the dispensary and only a few go to school. The subcommittee were in favour of the suggestion of the dispensary, as the children would be under the constant supervision of the dispensary's medical officer and would be considerably benefited by being educated in rooms with open windows and under conditions in which the schoolwork could be arranged with due regard to the children's health. Premises known as Kensal House, Harrow-road, had been suggested for the purpose of the school. The house was a large one, standing in its own grounds near the Paddington Canal, and the first two floors, which alone were proposed to be used at present, would provide 120 school places. The committee of the dispensary would be responsible for adapting the premises, the funds necessary for this purpose and for the rent, having been guaranteed for three years. The Council would only be responsible for the annual maintenance, estimated at £796, against which should be set the Government grant, amounting to probably £500 a year, leaving only £296 to be met by the rates. The Education Committee approved the experiment for three years.

X Ray Treatment of Ringworm.

When the Council on Nov. 30th last approved arrangements for medical treatment of children at certain hospitals the question of the capitation grant to be paid in the case of ringworm treatment was reserved, as the cost of the X ray method was not known at the time. Experiments had been conducted at the Charing Cross and St. George's Hospitals with the object of ascertaining this cost. Each hospital provided treatment for 25 cases and the cost, apart from payments to clinical assistants, had worked out at 7*s.* a case at Charing Cross Hospital and 8*s.* 8*d.* at St. George's Hospital. The agreements with these hospitals provided that the amount of the capitation grant in respect of ringworm treatment should be fixed in accordance with the result of these experiments, and the subcommittee therefore recommended the payment of a grant to Charing Cross Hospital of £70 a year and to St. George's Hospital of £87, each institution having undertaken to provide treatment for 200 cases this year. This was agreed to. The subcommittee also dealt with the question of the recovery from parents of the cost of ringworm treatment. In the light of the two experiments mentioned above the cost of treatment (including clinical assistance) would appear to be from 15*s.* to 22*s.* per case, five attendances at the hospital on the average being necessary to effect a cure. As stated in a previous report,[1] the subcommittee considered it undesirable to vary the charges to the parents and therefore advised that the lowest estimate, 15*s.*, should be adopted in recovering the cost from parents, and that 3*s.* per attendance for not more than five attendances should be the full charge. Reductions would be made according to the poverty of parents in accordance with the scale adopted on Dec. 22nd. This report was withdrawn pending further consideration of the matter.

The Cost of the Council's Schools.

The greater part of a protracted sitting was devoted to consideration of the education estimates for 1910–11, representing an expenditure of between three and four millions sterling. The items included £68,985 for the provision of meals for necessitous children, and £20 was set down on the receipts side as likely to be recovered from parents. Medical inspection and treatment were estimated to cost £19,075 (£4000 being for treatment), and there were further provisional estimates of £4000 to meet the cost of extensions of treatment and £1025 in respect of extra medical inspection. £1000 was the estimate of the sum likely to be recovered from parents in respect of treatment. Mr. Bray moved, and Dr. Beaton seconded, an amendment to increase the provisional estimate of £4000 for medical treatment to £8000, in order that the Council might begin to deal with teeth, but the amendment was rejected by 19 votes to 8. Mr. Jay, in defending a policy of inaction, said the committee had not yet succeeded in inducing the parents to bring their children to be treated for the ailments the Council was dealing with. In some cases it was extremely difficult to get the children to attend at the hospitals, and it would be well not to extend operations for a time. Dr. Beaton also criticised an item of £100 for the maintenance of a laboratory concerned with the infectious diseases of school children. He urged that £100 were utterly inadequate for the purpose, and mentioned that the Water Board spent from £6000 to £7000 annually on its laboratory. The item, however, was passed.

---

[1] THE LANCET, Jan. 1st, 1910, p. 51.

The Provision of Meals for Necessitous School Children.

The Education Committee reported to the Council on Feb. 15th as to the difficulties which arise through the overlapping of the work of the Council in the provision of meals for necessitous children and of the London boards of guardians under the Acts dealing with the relief of the poor. There was no uniformity of policy or action (said the committee) amongst the 31 boards of guardians. For example, there could hardly be a wider divergence of principle and practice between public bodies than that which existed between such boards as Paddington, Fulham, and St. George-in-the-East on the one hand, and Islington and Poplar on the other. In Fulham the guardians, in assessing relief, took into account the extent to which school meals were supplied to the children of a family; in Poplar the guardians had informed the care committees that "the fact that a family is in receipt of Poor-law relief should not be a reason for not supplying the children with meals." Information was being obtained as to all cases of overlapping, but it must be remembered that the majority of cases were on the border-line and would need to be considered on individual merits. A further difficulty was the variation of home conditions. Out-relief adequate one week might be inadequate the next owing to the supervention of misfortune. The following appeared to be possible solutions of existing difficulties: (1) The Council should refuse to supply meals to children whose parents were already in receipt of relief from the guardians; (2) that in respect of children attending school the guardians should purchase from the Council school meals for the children of families receiving relief; and (3) that the Council should assume responsibility for, and bear the cost of, feeding such children on school days, allowing the guardians to adjust the relief accordingly. The Education Committee thought the second solution preferable, believing that some boards of guardians would be prepared to accept it. The committee recommended that representations be made to the Local Government Board and the Board of Education in accordance with its suggestion. This was agreed to.

The Health of the Council's Schools.

Reporting on Feb. 15th on matters of current administration during the December quarter, the Education Committee stated that during the period under review the health of the children attending the elementary schools had been very satisfactory. 45 schools had been under observation for diphtheria, 260 cultures were taken and tested bacteriologically, and as a result 28 children were excluded from school. The prevalence of diphtheria was far less than in the corresponding period of 1908. 148 schools were under observation for scarlet fever, but the severity of this complaint was less marked than in the Christmas quarter of 1908. 154 schools were under observation for measles—a complaint most prevalent, of course, in the spring. No serious epidemic of measles occurred from August to December, 1909, and the total number of cases was less than one half the number in the corresponding period of 1908. Between 600 and 1000 cases of ringworm were reported each week.

Lunacy Statistics for the County of London.

The returns furnished to the Council, in accordance with statute, by the London boards of guardians, show that on Jan. 1st, 1910, the total number (*a*) of lunatics under certificate in London county asylums, or in other county and borough asylums or licensed houses under contract, or pursuant to arrangements made by boards of guardians, and (*b*) of lunatics in workhouses (including those in the Metropolitan Asylums Board's asylums for imbeciles) or with relatives or friends, is 26,386, as against 26,293 on Jan. 1st, 1909, an increase of only 93. This is the smallest increase (the Asylums Committee stated in a report to the Council on Feb. 15th) recorded since Jan. 1st, 1901, and compares favourably with the increase of 678 recorded on Jan. 1st, 1909, of 403 on Jan. 1st, 1908, and of 400 on Jan. 1st, 1907. Dealing only with the number of lunatics for whom the County of London is responsible to find accommodation (excluding private patients at Claybury Hall), the total on Jan. 1st, 1910, was 19,919, as against 19,716 on Jan. 1st, 1909, an increase of only 203—the lowest increase since Jan. 1st, 1892.

MEDICINE AND THE LAW.

Keogh v. *The Incorporated Dental Hospital of Ireland.*

AN action was recently tried at Dublin in the King's Bench Division in which the plaintiff, Myles Keogh, sought to recover £5000 damages from governors of the Incorporated Dental Hospital of Ireland. The plaintiff in January, 1885, was bound apprentice to a dentist since deceased, and on the completion of his term as such worked for the same employer as a mechanical dentist. Evidence was given by the plaintiff that at intervals and up to 1908 he sought to be admitted as a student at the hospital, that he submitted himself for examination, and that a fee had been at one time accepted from him by the hospital. This, however, was apparently before its incorporation, and subsequently, in 1904, a cheque for the amount was forwarded to him by the authority of the board of governors and returned by him. The letter enclosing it stated that the dean of the school had no power to admit the plaintiff as a student at the time when the fee was paid, and subsequent applications of the plaintiff for admission met with refusal. The action brought by him was not, however, founded directly upon this refusal, but took the form of an action for libel based upon a resolution of the board of governors to the effect that he could not be accepted as a student which had been forwarded to him by the direction of the board in May, 1908, in reply to a communication from him. The letter containing the resolution arrived at a time when Mr. Keogh was away from home, his absence being explained by him in his evidence as due to the fact that he was practising dentistry, having a considerable number of patients, and attending as dentist at institutions round Dublin. He employed an assistant, Mr. Kelly, who in the absence of his employer opened and read the letter and resolution, this constituting the alleged publication of the libel. As to this the plaintiff's counsel argued that it was notoriously the practice of busy professional men to have their letters opened by others and that the risk was one which their correspondents must take account of. We do not find that in the report before us the judge negatived this rather novel view of the law as to publication, but it was submitted to him by Mr. T. M. Healy, K.C., for the defence that there must be knowledge in such a case that a clerk was kept, that there was no publication, that the communication was privileged, and that there was no libel. The judge was of the opinion that there was privilege and also that there was no evidence that the publication was made with malice, and directed the jury to find a verdict for the defendants. He, however, spoke of the probability that the case would not end with that verdict, and in the circumstances comment would be out of place.

LAUNCESTON (CORNWALL) INFIRMARY.—The annual meeting of the subscribers to the Launceston Infirmary was held on Feb. 8th. The medical report was satisfactory and showed that during the year a new wing had been added to the institution and an operating table had also been presented. A considerable discussion took place in reference to the suggested admission of paying patients, and eventually a committee was appointed to report upon the matter.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The County of Hants.—Dr. R. A. Lyster, the medical officer of this county, only commenced his duties towards the end of the year 1908, and he has not therefore been able to present a comprehensive report for that year, more especially so since the pressure of very important work such as the organisation of the medical inspection of school children throughout the county has absorbed a very large proportion of his time. Of the 38 district reports received by this county medical officer 19 were printed, 18 typed, and six were in manuscript—a not very creditable condition of affairs for a county such as Hampshire. In more than half the districts the councils would appear to take such little interest in sanitation that they do not encourage the printing and circulation of the annual reports of their medical officers of health. Dr. Lyster will, we trust, be able to gradually alter this condition of affairs, and we must say that we should like to see the printing of annual reports made compulsory. There are few things which stimulate the councils, their officers, and the public more than a vigorous annual report. During 1908 the three inspectors of weights and measures took 600 samples of food and drugs for analysis, and of these 27 were found to be adulterated. Of the samples of milk examined 8 per cent. were adulterated, but of course these figures do not relate to the percentage of the samples which contained the tubercle bacillus. In this county the inspection of midwives is carried out by the Hampshire Nursing Association, an annual fee of 1 guinea for each midwife up to 300 and 15*s*. for each above that number being paid. There are at present 198 midwives in the county. Eleven of these were reported as unsatisfactory during 1908 and one was removed by the Central Midwives Board. In Aldershot, which is not embraced in the county scheme, the 21 midwives are inspected by the medical officer of health. The infantile mortality in the administrative county as a whole averaged 84 per 1000 births, the rate for the urban districts being 98, and that for the rural districts 74. In the urban districts the rates ranged from 29 in Havant to 137 in Farnborough, and in the rural districts from 21 in Christchurch to 128 in Havant. Dr. Lyster refers to the alarming number of stillbirths which occur in the practices of midwives, and he expresses the view that notification and registration of such cases should be compulsory, since there is, he adds, reason to suspect the good faith of many of the midwives in this matter. The estimated population of Hampshire for 1908 was 406,933 and the general death-rate 11·4 per 1000. The birth-rate was 24·08, the zymotic death-rate 0·69, and the tuberculous death-rate 1·17—per 1000 in each instance. The body of the report is composed of illustrative observations from the reports of the district medical officers of health arranged under subject headings, and we shall doubtless in Dr. Lyster's next report have an interesting digest of all this material.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8416 births and 5311 deaths were registered during the week ending Feb. 12th. The annual rate of mortality in these towns, which had been equal to 14·8, 16·3, and 17·0 per 1000 in the three preceding weeks, declined again to 16·6 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 15·7 per 1000, and the mean rate in London during the same period was equal to 15·6. The lowest reported annual rates of mortality in the 76 towns last week were 7·5 in Willesden, 8·3 in East Ham, 8·8 in Halifax, and 9·0 in Hornsey; the rates in the other towns ranged upwards, however, to 23·7 in Swansea, 23·8 in Burnley, 24·6 in Devonport, and 26·5 in Rochdale. In London the recorded death-rate last week was equal to 17·5 per 1000. The 5311 deaths registered in the 76 towns last week showed a decline of 125 from the number in the previous week, and included 331 which were referred to the principal epidemic diseases, against 361 and 354 in the two preceding weeks; of these 331 deaths, 162 resulted from whooping-cough, 45 from diarrhœa, 41 from measles, 40 from diphtheria, 31 from scarlet fever, and 12 from "fever" (principally enteric), but not one from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases was equal to 1·0 per 1000, against 1·1 in each of the two preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, Blackburn, Leyton, Plymouth, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·2 in Swansea and in Coventry, 3·4 in Burnley, 4·9 in Devonport, and 5·1 in West Hartlepool. The fatal cases of whooping-cough, which had been 165 and 157 in the two preceding weeks, rose again to 162 last week; they caused annual death-rates, equal to 1·8 in Aston Manor, 2·2 in Walthamstow, 4·3 in Devonport, and 5·1 in West Hartlepool. The 45 deaths attributed to diarrhœa showed a slight increase upon recent weekly numbers. The fatal cases of measles, which had steadily declined in the four preceding weeks from 61 to 48, further fell to 41 last week; the highest rates from this disease last week being 1·5 in Hastings and 1·6 in Swansea. The deaths referred to diphtheria, which had been 44, 51, and 67 in the three preceding weeks, declined last week to 40; they included, however, 8 in Manchester and Salford. The 31 fatal cases of scarlet fever exceeded by but one the number in the previous week; 8 were recorded in London and its suburban districts, 4 in Liverpool, and 4 in Burnley, which were equal to an annual rate of 1·9 per 1000. Only 12 deaths were referred in the 76 towns last week to "fever," a lower number than in any recent week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the 17 preceding weeks from 2819 to 1937, had further fallen to 1881 on Saturday last; 212 new cases of this disease were admitted to these hospitals last week, against 193 and 213 in the two preceding weeks. The Metropolitan Asylums Hospitals contained but one case of small-pox on Saturday last. Of the 1632 deaths registered in London last week 425 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 285 to 392 in the four preceding weeks; these 425 deaths exceeded by 7 the corrected average number in the corresponding week of the five years 1905–09. The causes of 39, or 0·7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 48 other smaller towns; the 39 uncertified causes of death in the 76 towns last week included 8 in Liverpool, 8 in Birmingham, 3 in Hull, and 2 each in Birkenhead, Preston, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 908 births and 615 deaths were registered during the week ending Feb. 12th. The annual rate of mortality in these towns, which had been equal to 15·5, 19·1, and 20·5 per 1000 in the three preceding weeks, declined again to 17·0 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 18·2 per 1000, and exceeded by 2·5 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 11·7 and 12·4 in Paisley and Aberdeen, to 21·5 in Dundee and 27·6 in Greenock. The 615 deaths from all causes in the eight towns last week showed a decline of 129 from the high number in the previous week, and included 92 which were referred to the principal epidemic diseases, against 77, 99, and 100 in the three preceding weeks. These 92 deaths were equal to an annual rate of 2·5 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 1·0 per 1000. The 92 deaths from these epidemic diseases in the Scotch towns last week included 55 from measles, 13 from diphtheria, 11 from diarrhœa, 7 from whooping-cough, 3 from scarlet fever, and 3 from "fever," but not one from small-pox. The fatal cases of measles in the eight towns, which had been 54 and 46 in the two previous weeks, rose again to 55 last week, of which 43 were recorded in Glasgow, 9 in Edinburgh, and 2 in Greenock. The 13 deaths referred to diphtheria were within one of the number in the previous week, and included 4 in Glasgow, 3 in Edinburgh, and 2 in Dundee. Of the 11 deaths attributed to diarrhœa 4 occurred in Glasgow, 3 in Dundee, and 2 in Edinburgh. The fatal cases of whooping-cough, which had been 8 and 9 in the two previous weeks, declined to 7 last week, but included 5 in Glasgow. The 3 deaths from scarlet fever, against 11 in the previous week, were all recorded in Glasgow. The 3 deaths referred to "fever" were also recorded in Glasgow, and included 2 certified as enteric and 1 as cerebro-spinal meningitis. The deaths in the eight towns referred to diseases of the respiratory system, which had been 101, 123, and 150 in the three preceding weeks, declined again last week to 110, and were 27 below the number returned in the corresponding week of last year. The causes of 14, or 2·3 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 646 births and 575 deaths were registered during the week ending Feb. 12th. The mean annual rate of mortality in these towns, which had been equal to 19·1, 21·1, and 25·0 per 1000 in the three preceding weeks, further rose to 26·0 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these Irish towns averaged 22·3 per 1000, whereas the mean rate during the same period did not exceed 15·7 in the 76 largest English towns and 18·2 in the eight principal Scotch towns. The annual death-rate last week was equal to 26·4 in Dublin, 22·9 in Belfast, 26·7 in Cork, 20·4 in Londonderry, 16·4 in Limerick, and 44·8 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 33·4 per 1000. The 575 deaths from all causes in the 22 town districts last week showed a further increase of 23 upon the numbers returned in the three preceding weeks, and included 32 which were referred to the principal epidemic diseases, against 29, 30, and 34 in the three preceding weeks; these 32 deaths were equal to an annual rate of 1·4 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 1·0 per 1000, while in the eight Scotch towns it was equal to 2·5. The 32 deaths from these diseases in the Irish towns last week included 19 from whooping-cough, 7 from diarrhœa, and 2 each from measles, scarlet fever, and diphtheria, but not one either from "fever," or small-pox. The fatal cases of whooping-cough, which had been 18, 21, and 25 in the three preceding weeks, declined again to 19 last week, and included 15 in Belfast and 4 in Dublin. Six of the 7 deaths attributed to diarrhœa occurred in Dublin; and the 2 fatal cases of measles were recorded in Ballymena, the 2 of scarlet fever in Belfast, and the 2 of diphtheria in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 107, 131, and 140 in the three preceding weeks, further rose to 185 last week. The causes of 19, or 3·3 per cent., of the deaths registered in the Irish towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death did not exceed 0·7 per cent., and in the eight principal Scotch towns it was equal to 2·3 per cent.

VITAL STATISTICS OF LONDON DURING 1909.

IN the accompanying table the statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1909. The mortality figures relate to the deaths of persons actually belonging to the various boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to a rate of 6·1 per 1000 of the population, estimated at 4,833,938 persons in the middle of last year; in the three preceding years the rates were 7·5, 8·6, and 7·4 per 1000 respectively. Among the various boroughs the rates ranged last year from 3·3 in Stoke Newington, 3·8 in Hampstead and in Holborn, 4·0 in the City of London, and 4·3 in Kensington, to 7·0 in Poplar, 7·1 in Stepney, 7·3 in Bethnal Green, 9·0 in Lewisham, and 10·6 in Woolwich. 21 cases of small-pox were notified in London last year, against 8 and 4 in the two preceding years; these 21 cases included 8 belonging to Stepney, 3 to Islington, and 2 to Southwark. The prevalence of scarlet fever showed a considerable decrease last year, the number of cases notified being 17,251, against 25,925 and 22,072 in the two preceding years; among the various boroughs this disease was proportionally most prevalent in Paddington, Chelsea, Bethnal Green, Poplar, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2329 scarlet fever patients at the end of last year, against 3787, 4956, and 3498 at the end of the three preceding years; the admissions during the year numbered 16,183, against 23,953 and 20,862 in the two preceding years. Diphtheria also showed a markedly decreased prevalence last year; the notifications of this disease, which had been 8771 and 8002 in the two preceding years, declined last year to 6685, and were proportionally most numerous in Fulham, Finsbury, Shoreditch, Stepney, Lewisham, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1168 and 1241 at the end of the two preceding years, had declined to 904 at the end of last year; 5799 new cases were admitted during the year, against 7303 and 6797 in the two preceding years. Only 1042 cases of enteric fever were notified last year, against 1394 and 1357 in the two preceding years; this disease was proportionally most prevalent in Kensington, Islington, Holborn, Shoreditch, Bethnal Green, Battersea, Poplar, Deptford, and Greenwich. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals was 62 at the end of last year, against 119 and 147 at the end of the two preceding years; 539 cases were admitted during the year, against 768 and 708 in the two preceding years. The greatest proportional prevalence of erysipelas occurred in St. Marylebone, Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. The 287 cases of puerperal fever notified during the year included 34 which belonged to Fulham, 26 to Wandsworth, 16 to Lambeth, 15 to St. Pancras, and 15 to Hackney. Of the 111 cases notified as cerebro-spinal meningitis, 14 belonged to Lambeth, 8 to Poplar, and 6 each to St. Marylebone, St. Pancras, and Hackney.

During the past year 67,632 deaths of persons belonging to London were registered, being in the proportion of 14·0 deaths per 1000 persons living; in the three preceding years the death-rates were 15·1, 14·6, and 13·8 per 1000, the average for the ten years 1899-1908 being 16·3 per 1000. Among the several boroughs the lowest death-rates last year were 8·9 in Hampstead, 10·3 in Lewisham, 11·3 in Stoke Newington, 11·9 in Wandsworth and in Woolwich, and 12·0 in Fulham; the highest rates were 16·8 in Southwark and in Bethnal Green, 18·8 in Bermondsey, 19·0 in Shoreditch, 19·2 in Finsbury, and 20·3 in the City of London. In the western group of boroughs the mean rate was 13·2, in the northern 13·4, in the southern 13·5, in the eastern 16·4, and in the central 18·2 per 1000. The 67,632 deaths from all causes included 6285 which were referred to the principal infectious diseases; of these, 2 resulted from small-pox, 2324 from measles, 383 from scarlet fever, 605 from diphtheria, 1246 from whooping-cough, 146 from enteric fever, 2 from ill-defined pyrexia, and 1577 from diarrhœa, but not any from typhus fever. These 6285 deaths were equal to a rate of 1·31 per 1000, the rates from the same diseases in the three preceding years having been 1·93, 1·42, and 1·35 per 1000. The death-rates last year from these principal infectious diseases ranged from 0·52 in Hampstead, 0·58 in Lewisham, 0·63 in the City of Westminster and in Stoke Newington, 0·72 in the City of London, and 0·83 in St. Marylebone, to 1·67 in Hammersmith and in Southwark, 1·68 in Stepney, 1·99 in Bethnal Green, 2·36 in Finsbury, 2·37 in Poplar, 2·74 in Bermondsey, and 2·87 in Shoreditch. The 2324 deaths from measles were 466 in excess of the corrected average number for the five preceding years; this disease was proportionally most fatal in Hammersmith, Finsbury, Shoreditch, Poplar, Stepney, and Bermondsey. The 383

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1909.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1909.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	**4,833,938**	**21**	**17,251**	**6685**	**7**	**1042**	**20**	**287**	**4194**	**111**	**29,618**	**6·1**	**2**	**2324**	**383**	**605**	**1246**	—	**146**	**2**	**1577**	**6285**	**1·3**	**67,632**	**14·0**	**107**
West Districts.																										
Paddington	151,955	—	630	184	—	29	—	3	106	4	956	6·3	—	36	14	10	36	—	4	—	36	136	0·9	1956	12·9	108
Kensington	183,683	—	420	177	—	48	—	7	135	4	791	4·3	—	58	9	19	40	—	8	—	49	183	1·0	2440	13·3	119
Hammersmith	125,704	—	389	192	—	16	—	14	76	1	688	5·5	—	80	11	23	47	—	5	—	44	210	1·7	1791	14·3	125
Fulham	176,406	—	511	322	—	41	1	34	115	3	1027	5·8	—	74	10	40	49	—	4	—	99	276	1·6	2113	12·0	111
Chelsea	75,249	—	307	98	—	12	2	1	40	—	460	6·1	—	24	6	15	13	—	2	—	15	75	1·0	1084	14·4	114
City of Westminster	168,883	1	590	225	—	25	—	5	102	3	951	5·6	1	25	18	18	19	—	7	—	16	104	0·6	2212	13·1	103
North Districts.																										
St. Marylebone	126,027	—	458	113	—	21	—	3	134	6	735	5·8	—	33	8	9	25	—	1	—	29	105	0·8	1836	14·6	64
Hampstead	94,185	—	259	47	—	16	—	5	30	4	361	3·8	—	14	4	5	18	—	5	—	4	50	0·5	839	8·9	77
St. Pancras	237,422	1	771	320	—	50	—	15	155	6	1318	5·6	—	105	17	27	30	—	6	—	45	230	1·0	3510	14·8	109
Islington	351,202	3	1284	432	1	94	—	14	221	11	2060	5·9	—	199	26	30	86	—	13	—	69	423	1·2	4913	14 0	105
Stoke Newington	54,423	—	110	28	—	11	—	4	27	—	180	3·3	—	10	3	2	14	—	1	—	4	34	0·6	612	11·3	82
Hackney	237,601	1	784	264	—	59	1	15	271	6	1401	5·9	—	57	10	19	51	—	6	—	77	220	0·9	2988	12·6	98
Central Districts.																										
Holborn	53,802	1	97	47	—	16	1	3	41	—	206	3·8	—	14	3	3	15	—	1	—	9	45	0·8	836	15·6	70
Finsbury	95,289	—	240	167	1	13	—	5	132	3	561	5·9	—	85	11	14	51	—	3	—	60	224	2·4	1829	19·2	108
City of London	18,193	1	38	19	—	4	—	1	10	—	73	4·0	—	6	—	—	4	—	1	—	2	13	0·7	368	20·3	117
East Districts.																										
Shoreditch	114,802	—	341	186	—	50	—	14	144	2	737	6·4	—	130	9	22	72	—	6	—	89	328	2·9	2178	19·0	146
Bethnal Green	131,316	1	566	184	—	33	—	7	164	5	960	7·3	—	79	25	17	40	—	4	—	95	260	2·0	2201	16·8	134
Stepney	312,625	8	1038	583	2	71	2	13	487	4	2208	7·1	1	236	26	51	69	—	6	—	137	526	1·7	4759	15·3	115
Poplar	171,965	—	733	213	—	54	—	13	177	8	1198	7·0	—	156	23	20	84	—	13	—	109	405	2·4	2787	16·3	133
South Districts.																										
Southwark	211,125	2	590	256	—	35	1	6	224	5	1119	5·3	—	127	14	33	57	—	6	—	113	350	1·7	3528	16·8	124
Bermondsey	127,569	—	458	198	3	30	—	7	143	4	843	6·6	—	200	15	9	55	—	2	—	67	348	2·7	2388	18·8	140
Lambeth	324,188	—	1182	378	—	50	1	16	191	14	1832	5·7	—	104	27	58	85	—	9	1	103	387	1·2	4544	14·1	97
Battersea...	186,036	—	723	288	—	54	—	14	156	4	1239	6·7	—	90	8	22	63	—	7	—	49	239	1·3	2416	13·0	112
Wandsworth	297,646	—	997	371	—	66	2	26	193	4	1659	5·6	—	111	14	27	69	—	6	1	58	286	1·0	3524	11·9	87
Camberwell	283,022	1	1017	379	—	47	—	14	234	4	1696	6·0	—	105	17	43	52	—	5	—	84	306	1·1	3776	13·4	102
Deptford	118,583	—	374	195	—	33	6	7	181	2	798	6·7	—	67	12	15	47	—	6	—	31	178	1·5	1611	13·6	104
Greenwich	111,014	—	390	163	—	30	1	8	95	4	691	6·2	—	38	9	7	20	—	4	—	36	114	1·0	1350	12·2	100
Lewisham	160,749	1	927	388	—	18	1	4	105	—	1444	9·0	—	6	15	21	20	—	2	—	29	93	0·6	1656	10·3	75
Woolwich...	133,374	—	1027	267	—	12	—	9	101	—	1416	10·6	—	55	19	26	15	—	3	—	19	137	1·0	1587	11·9	81
Port of London	—	—	—	1	—	4	1	—	4	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

fatal cases of scarlet fever were 155 fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in the City of Westminster, Finsbury, Bethnal Green, Poplar, Bermondsey, and Woolwich. The 605 deaths from diphtheria showed a decline of 90 from the corrected average number; this disease was proportionally most fatal in Hammersmith, Fulham, Chelsea, Shoreditch, Lambeth, and Woolwich. The 1246 fatal cases of whooping cough were 179 below the corrected average number; the highest death-rates from this disease last year were recorded in Hammersmith, Finsbury, Shoreditch, Poplar, Bermondsey, and Deptford. The 148 deaths referred to "fever" were 105 fewer than the corrected average number; enteric fever was proportionally most fatal in Hampstead, Shoreditch, Poplar, and Deptford. The 1577 fatal cases of diarrhœa were less than half the corrected average number; the greatest proportional mortality from this disease was recorded in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey. Of the 2 fatal cases of smallpox, 1 belonged to the City of Westminster and 1 to Stepney. In conclusion, it may be stated that the aggregate mortality in London last year from these principal infectious diseases was 22·9 per cent. below the average for the five preceding years.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 107 per 1000 last year, against 131, 116, and 113 in the three preceding years. The rates of infant mortality in the year under notice ranged from 64 in St. Marylebone, 70 in Holborn, 75 in Lewisham, 77 in Hampstead, 81 in Woolwich, and 82 in Stoke Newington, to 124 in Southwark, 125 in Hammersmith, 133 in Poplar, 134 in Bethnal Green, 140 in Bermondsey, and 146 in Shoreditch.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: E. C. Sawdy to the *Jupiter*, and J. G. Watt to the *Sutlej*, both supernumerary. Surgeons: A. Davidson to the *Magnificent*, and G. C. Cross to the *Sutlej*, both supernumerary; A. Davidson to be transferred to the *Bulwark*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants are confirmed in that rank:—Gilbert G. Collet, Francis W. M. Cunningham, Harry R. Edwards, Rupert H. Nolan, William Mathieson, Gilbert H. Dive, Robert Gale, Alfred G. Jones, Kenneth Comyn, Arthur S. Cane, John M. Weddell, Charles M. Nicol, Arthur P. O'Connor, Thomas H. Dickson, Hugh G. Robertson, Herbert V. Stanley, Philip C. Field, Ronald M. Davies, Richard C. G. M. Kinkead, and Edward C. Stoney.

Lieutenant-Colonel J. J. Gerrard, who on return from Malta was appointed Medical Inspector of Recruits, Northern Command, has been selected as Deputy Director of Medical Services, Lines of Communication Staff, for an administrative staff ride to be held during March in the vicinity of Stockton-on-Tees. Lieutenant-Colonel J. M. Reid has arrived home from Hong-Kong, and Lieutenant-Colonel C. Birt from Malta. Lieutenant-Colonel J. M Reid has been appointed Senior Medical Officer, London Recruiting District. Major B. H. Scott has been transferred from the Scottish Command to the London District for duty at the War Office. Lieutenant-Colonel R. J. D. Hackett, Lieutenant-Colonel S. E. Duncan, Major J. F. Kelly, and Captain H. M. Morton have embarked for a tour of service in South Africa and Lieutenant H. S. Dickson for Gibraltar.

Supernumerary Lieutenant Charles T. V. Benson, from the Seconded List, is restored to the establishment (dated Jan. 30th, 1910).

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of the following officers, with effect from the dates indicated:—Surgeon-General Sir Gerald Bomford, K.C.I.E. (dated Jan. 1st, 1910). Lieutenant-Colonel Thomas Richard Mulroney (dated August 13th, 1909). Lieutenant-Colonel John Leopold Poynder (dated Dec. 12th, 1909). Lieutenant-Colonel William George Patrick Alpin (dated Jan. 6th, 1910).

The King has approved of the removal to the Temporary Half-pay List of Captain Arthur Falconer Hayden (dated Jan. 23rd, 1910).

His Excellency the Viceroy of India has selected Lieutenant-Colonel C. J. Bamber, Sanitary Commissioner of the Punjab, for the appointment of Inspector-General of Civil Hospitals in the Punjab, in succession to Colonel T. E. L. Bate, who will complete his tour of service in July. Lieutenant-Colonel C. C. Manifold, Civil Surgeon in the United Provinces, has been appointed to officiate as Inspector-General of Civil Hospitals in the United Provinces, with the reversion of the appointment, in succession to Colonel R. D. Murray, who retires on March 29th. The services of Lieutenant-Colonel G. W. P. Dennys, Agency Surgeon, have been placed at the disposal of the Commander-in-Chief and he has been posted to the North-West Frontier Province. On return from military duty Lieutenant-Colonel A. L. Duke has been appointed Civil Surgeon of Peshawar. The services of Captain R. Steen have been permanently placed at the disposal of the Government of the United Provinces. Captain T. G. N. Stokes has been appointed Sanitary Commissioner to the Central Provinces. The services of Lieutenant S. B. Mehta have been placed at the disposal of the Commander-in-Chief. Captain H. A. Mackenzie has been granted privilege leave for one month, Captain H. Falk leave for one year, and Captain Fayrer leave for six months.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd East Anglian Field Ambulance: Captain Josiah Oldfield to be Major (dated Jan. 6th, 1910).

1st West Lancashire Field Ambulance: The appointment of Captain Arthur J. Evans is antedated to July 14th, 1909.

3rd North Midland Field Ambulance: Ernest William Strange to be Lieutenant (dated Dec. 24th, 1909).

Attached to Units other than Medical Units.—Lieutenant James G. Miller to be Captain (dated Nov. 17th, 1909).

FIRST WESTERN GENERAL HOSPITAL: WEST LANCASHIRE DIVISION.

The annual dinner and concert of the *personnel* of the General Hospital took place in Liverpool on Feb. 10th, Lieutenant-Colonel Nathan Raw, commanding officer, being in the chair. There were present, among other officers, Colonel Richard Caton, Colonel Damer Harrisson, Lieutenant-Colonel Rushton Parker, Lieutenant-Colonel T. R. Glynn, Major Burns Gemmell (Registrar), Mr. Naldrett (Q.M.), Lieutenant-Colonel Knowles, O.C. 1st Field Ambulance, Lieutenant-Colonel Dawson, 2nd Field Ambulance, Lieutenant-Colonel Jackson, 3rd Field Ambulance, Major Barrow, R.A.M.C., Major Smart, Captain Evans, and Major Stevenson. Miss Glover, the principal matron, Miss Purves and Miss Oates (matrons), together with 81 sisters and nurses attached to the hospital, were also present. The total company numbered 176. After the loyal toasts had been proposed, the commanding officer reported that the hospital was recruited in all departments up to full strength—namely, 31 physicians and surgeons, 120 nurses, and 47 non-commissioned officers and men. The fact of so many nurses being present in uniform gave great brightness to the proceedings, and it is worthy of note that it is the first occasion in which hospital nurses have taken part in an official military function in Liverpool.

THE RED CROSS SOCIETY.

At a meeting held at Shrewsbury last week under the presidency of the Earl of Powis, Lord Lieutenant of the county, a scheme was drawn up for the organisation of voluntary aid for the sick and wounded in time of war. The county committee will consist of Lord Powis, Colonel Yate, Colonel Cureton, Colonel Cholmondeley, Colonel Lloyd, Major Lloyd, and also representatives of the sub-districts. Colonel Yate, who for many years was organising secretary of the Red Cross Society in India, was appointed county director of the scheme. Major-General Lloyd, commanding the Welsh Division, stated he knew that Mr. Haldane was peculiarly grateful to the country gentlemen of England for the way in which, irrespective of party, business, or pleasure, they had "put their backs" into his great scheme.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The first article in the February issue of the *Journal of the Royal Army Medical Corps* is a joint communication by

Colonel Sir David Bruce, F.R.S., Captain A. E. Hamerton, D.S.O., R.A.M.C., Captain H. R. Bateman, R.A.M.C., and Captain E. P. Mackie, I.M.S., on the Development of Trypanosoma Gambiense in Glossina Palpalis. The communication, which is reprinted from the Proceedings of the Royal Society, is illustrated with a coloured plate. Lieutenant-Colonel C. Birt, R.A.M.C., discusses Phlebotomus Fever in Malta and Crete, and Captain T. H. Gibbon, R.A.M.C., gives the results of 140 cases in which Fleming's method of serum diagnosis in syphilis has been used. He concludes that: (1) The diagnosis of syphilis can readily be made by means of a reaction in which rabbit's heart extract, sheep's red blood corpuscles, and the suspected serum alone are employed; (2) 80 per cent. of cases of syphilis diagnosed clinically have given positive results; (3) in 100 per cent. of non-syphilitic blood examinations the result has been negative; and (4) the reaction has not appeared in the blood of some of those patients who have undergone a prolonged course of mercurial treatment. Lieutenant-Colonel Simpson, C.M.G., continues his medical history of the South African war.

THE ROYAL NAVY LIST.

This quarterly has now reached its 129th issue and maintains its usefulness both by the amount of information which it contains and by its facility for reference. An important feature of the handbook is the alphabetical list of war services which embraces the details of the careers of 14,500 active and retired officers. There are also lists of the ships in commission and ships in the course of building and an article on the current history of the Royal Navy, as well as an extremely useful bibliography of naval literature. For everyone interested in the Royal Navy this handbook is indispensable.

Correspondence.

"Audi alteram partem."

ENTERIC FEVER IN INFANCY.

To the Editor of THE LANCET.

SIR,—I am glad to note the correspondence in your columns on this subject, for it is one of more than individual importance. From the public health point of view the matter deserves special consideration. There is no doubt that typhoid fever is often overlooked in young children. In the past (when I was a district medical officer of health) I have more than once, on having a case of typhoid fever notified to me, ascertained on inquiring into the matter that several children in the house had, for some weeks previously, been suffering from illness which had not been recognised as typhoid fever. However, official inquiry revealed that one child after another had failed at intervals of ten days or so, and the Widal test subsequently applied was in each case positive.

In an infant the disease is still more likely to be overlooked, particularly amongst the very poor who cannot afford to have a child under daily observation. In any case the clinical symptoms are often anomalous, and I am of opinion that infected infants not infrequently form a link in a chain easily recognisable when the evidence is assiduously sought and scrutinised. The following series of cases taken from page 47 of my Annual Report on the Health of the Borough of Southend-on-Sea for the year 1906 may prove of interest and illustrates this instructive point.

The primary case of what proved, to my view, to be a series, was a female, aged 21 years, who ate "cockles" of unknown origin obtained from an itinerant vendor. A fortnight later she began to be ill; unfortunately, the illness was not recognised or notified as typhoid fever until a late period of the disease. Two secondary cases occurred in the same house through two children occupying the same bed as the "cockle" patient, and then all three cases were recognised and notified. The special point of interest is in what I consider to be two further secondary cases *in another house* a few doors off. Only the second of these cases was notified, because the first (an infant) was not recognised as typhoid fever or even suspected until I made official inquiry. On preliminary inquiry by the sanitary inspector into the case notified in the second house the connexion between the two houses was not apparent, there having been no direct contact between the patient (a boy, 15 years of age) and the cases in the other house; but through the death returns which I obtained weekly from the local registrar I ascertained that there had been a previous *infant* death in the second house. This seemed to me a likely clue, and on pursuing it I was enabled to fit in the connexion between the cases in the two houses in the way of cause and effect. Briefly, I found that a baby had died in the second house about three weeks after the commencement of illness in the first house. The stated cause of death in the registrar's return (though medically certified) was that most unsatisfactory term "convulsions." (Convulsions being merely a symptom should never be given as a *cause* of death, but this is by the way.)

I now personally made close inquiry into this infant's death and ascertained that she had exhibited marked abdominal symptoms with fever and diarrhœa. I further ascertained that this infant before its illness had been taken into the first house and had been nursed by the first patient of all after she began to be ill, but before her illness had been diagnosed or notified. The infant began to be ill about a fortnight later, and after she had been ill about a week she died in a "convulsion." But during this week of illness she was frequently nursed by the boy aged 15, who had never been in the first house, but who himself developed typhoid fever about a fortnight after the infant's illness and death.

As nearly three weeks had elapsed since the infant's burial before the youth's illness was notified to me, I was unable to verify what I believe to be a justifiable conclusion that in this infant's illness was to be found a "missed" or unrecognised attack of typhoid fever which amply explained the origin of the infection which laid the boy of 15 low and completed the chain of connexion between the cases in the two houses. I am, Sir, yours faithfully,

J. T. C. NASH,
County Medical Officer of Health of Norfolk.

Norwich, Feb. 11th, 1910.

THE VACCINE TREATMENT OF PERIODONTAL DISEASE.

To the Editor of THE LANCET.

SIR,—In your article the Vaccine Treatment of Periodontal Disease, in THE LANCET of Feb. 12th, you say that "up to the present ...... no observations on the treatment of pyorrhœa by vaccines alone have been recorded. Nor has it been shown by the comparison of a number of cases that the use of vaccines either hastens the cure of periodontal disease or renders it possible to cure cases which are not amenable to local treatment alone."

Referring to the first statement, we would like to draw your attention to the fact that in the series of cases recorded by us before the Royal Society of Medicine more than 50 per cent. were treated by vaccines alone, unless indeed you consider removal of tartar from the teeth and the use of a mouth-wash as local treatment of such importance as to stultify the subsequent use of vaccine therapy. The local treatment that was carried out in our cases can only be compared with the removal of the necrotic centre of an anthrax pustule and the subsequent daily washing of the lesion with lotion.

Then in answer to the statement regarding a comparison between the results following the employment of vaccine and those where local treatment alone is adopted, we would refer you to three cases which had been subjected for many months to all the ordinary measures of local treatment short of extracting the teeth, without success. The teeth remained loose and suppuration persisted. On the employment of vaccines each of these cases showed rapid improvement, and after a few injections pus had disappeared and the teeth became firm. We therefore venture to claim that vaccine *does* hasten the cure of periodontal disease and render it possible to cure cases which are not amenable to local treatment alone. We are, Sir, yours faithfully,

Feb. 14th, 1910.
JNO. EYRE.
J. LEWIN PAYNE.

To the Editor of THE LANCET.

SIR,—May I be permitted to offer a few words of criticism upon two points of your excellent leading article on the Treatment of Periodontal Disease by Means of Vaccines?

Periodontal disease alone, unaccompanied by infection of the alveolar process, is comparatively rare except when associated with simple gingivitis. Whenever the so-called periodontal disease has progressed to pus formation the bony sockets of the teeth are involved; the disease is then not one affecting the periodontal membrane alone, but bone as well: the "pocket" is a sinus often leading to bare bone. Local treatment, I presume, includes all manner of lavage, removal of deposits, retained discharges, or sinuses (pockets). But why vaccines should be required to do in the mouth what they are incapable of doing in any other part of the body (i.e., the removal of already dead matter) is difficult to see. Local treatment, such as common surgical remedies, must always go hand in hand with immunising methods.

I am, Sir, yours faithfully,
New Cavendish-st., W., Feb. 15th, 1910. KENNETH GOADBY.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—I have been much interested in the correspondence on this subject originated by Mr. Sinclair White's letter of Jan. 22nd. The possibility of post-operative hæmorrhage from the margins of a gastro-enterostomy wound is, I believe, present in the minds of most surgeons who use clamps in the performance of the operation. Mr. H. Upcott has pointed out that it is the inferior lip of the incision in the stomach (that which is sutured last) from which the arterial hæmorrhage is most likely to be severe, and that if the mucosa be everted, any hæmorrhage occurring on release of the clamps may be checked by an interrupted suture; if, however, Mr. Sinclair White's statement that the hæmorrhage in his case was from a vein be correct, this contention does not apply.

None of your correspondents has drawn attention to what appears to me to be the essential factor in the avoidance of hæmorrhage—viz., the character of the inner line of suture. This should be a continuous stitch, preferably of thread, and should include *all the coats* of the stomach and jejunum. The individual sutures should be closely placed and be drawn very tightly. Neither Mr. Sinclair White nor Mr. R. W. Murray states whether this was the kind of suture employed in their cases, and the issue would be clearer if information on this point were afforded. If the incision in the stomach be a transverse one close to the greater curvature the risk of hæmorrhage is obviously greater than if the stoma be made almost, or quite, vertical as in the "no-loop" operation.

Whilst the majority of surgeons will agree that the use of clamps is calculated to make the performance of the operation more speedy, accurate, and cleanly, the occurrence of accidents, such as those related, more than outweighs the advantages to be gained by their employment if such accidents cannot be prevented. The prevention of hæmorrhage in the operation with clamps is entirely dependent upon the inner suture; if this cannot confidently be made hæmostatic the larger vessels must be ligatured, but even then considerable reliance must be placed upon the suture for complete hæmostasis. The inner suture I am confident can be so placed as to be truly hæmostatic, and in this way the only objection to the use of clamps be overcome.

I am, Sir, yours faithfully,
Leeds, Feb. 12th, 1910. HAROLD COLLINSON.

To the Editor of THE LANCET.

SIR,—The advice of your correspondents who recommend that the use of clamps during gastro-enterostomy should be abandoned assumes that the inner suture cannot be made hæmostatic. This is contrary to my own experience and that, I believe, of many others. The lesson of hæmorrhage appears to me to be not the abandonment of clamps but the application of the inner row with the definite object of hæmostasis as well as approximation.

I am, Sir, yours faithfully,
Liverpool, Feb. 12th, 1910. K. W. MONSARRAT.

To the Editor of THE LANCET.

SIR,—There is an objection to the use of clamps which is important from the point of view of the anæsthetist as well as from that of the operator. I refer to the production of reflex cardiac depression, which I have noticed to occur instantly on their application, even when the patient has been thoroughly anæsthetised, and ether or C.E. employed. As the subject is usually in a feeble state it need hardly be said that anything which may have such effect should be avoided if possible.

I am, Sir, yours faithfully,
Feb. 12th, 1910. J. D. MORTIMER.

THE ROYAL SOCIETY OF MEDICINE.

To the Editor of THE LANCET.

SIR,—The Fellows of the Royal Society of Medicine met in good numbers on Wednesday, Feb. 2nd, to hear from their President an account of the steps which have been taken to obtain a new and enlarged house for the society. Much labour and anxiety have been undergone, and as a result there is now a prospect of an ample building, worthy of its purpose, that of housing the great and amalgamated institution which represents scientific medicine in its various branches and departments in the premier metropolis of the world.

This is indeed a high object, for which it is surely most fitting that we should unite our efforts and count it well to make some sacrifice that we may lay down for ourselves and for those who come after us the basis of an ever-growing academy of the medical sciences. I must confess to a little disappointment that the tone of the meeting was not more enthusiastic and that the wholesome criticism which every proposal should receive tended in some quarters to become carping and pessimistic. I hope that our profession at large will be touched by a sense of the greatness of the issues involved and will take long views of them, and that each of the Fellows and members of sections, now spread over a wide area, will respond to the appeal which has been sent out, and recognise that we are called upon in our own interest, as well as in that of the profession at large, to give our help, that the work of our society may go forward.

The generosity of the medical leaders of the past, of such as Harvey, Radcliffe, and Erasmus Wilson, is still, I hope, amongst us. But let those also whose means are only moderate give as they can, that none may be able to say that we failed in our day to take occasion by the hand.

I am, Sir, yours faithfully,
Wimpole-street, W., Feb. 13th, 1910. R. HINGSTON FOX.

FREE NEMATODES.

To the Editor of THE LANCET.

SIR,—In Sir Thomas Oliver's interesting lecture on "Ankylostomiasis," published in THE LANCET of Feb. 5th (p. 356), he says: "Cultivated soils swarm with active nematode forms of life, at first sight not unlike ankylostoma larvæ." It may interest some of your readers to know that in 1865 in the Transactions of the Linnean Society there was published a fully illustrated "Monograph on the Anguillulidæ or Free Nematodes: with Descriptions of 100 New Species"; while in the Philosophical Transactions for 1866 there is also a memoir by me "On the Anatomy and Physiology of Nematoids, Parasitic and Free," in which some important details will be found concerning the remarkable differences existing among different species in regard to their vitality and power of surviving prolonged desiccation. This power is the exception rather than the rule, as multitudes of the free nematodes are killed by even the briefest desiccation. Sir Thomas Oliver speaks of "larvæ in the rhabditic stage." This, I venture to think, should be an obsolete mode of expression, as it has now no real meaning.

I am, Sir, yours faithfully,
The Athenæum, Feb. 8th, 1910. H. CHARLTON BASTIAN.

A SCHEME FOR THE COÖRDINATION OF THE PUBLIC HEALTH SERVICE AND PATHOLOGICAL RESEARCH.

To the Editor of THE LANCET.

SIR,—I ask the publicity of THE LANCET to three impending developments which merit attention as affecting our future seriously. Among the recent activities of the medical department of the Local Government Board none is of more far-reaching importance than the appointment of a pathological investigator, who is also a medical inspector, and the establishment of a research laboratory and staff.[1]

---

[1] THE LANCET, Jan. 8th, 1910, p. 111.

The appreciation of the medical officers of health thereat is expressed in the January number of *Public Health*, and it is said to foreshadow, and the last Local Government Board report confirms, (*a*) a systematic, organised, and continuous research on pathological problems more immediately concerned with public health administration emanating from the Local Government Board; (*b*) inspection, organisation, and coördination of public health laboratories, their staffs, and their work throughout the country. Should not the general approbation of the profession be suitably expressed at such a movement?

In my several papers on Coördination in Public Health and Pathology and on a Public Health Ministry and Service, and at meetings at home and abroad, I have advocated this appointment from the distant obscurity of the provinces, realised and coveted its possession and possibilities. The concentration of public health in one independent department with extension of its organisation and activities is proceeding sanely and surely, and the ideal is clearly not that of a visionary. If we look abroad, too, we see that it is a true question of practical politics. Those bacteriologists who have worked for fever hospitals, as I have, will agree that innumerable subjects for research stare them in the face, but routine duties absorb their time; hence the value of a loan from the central department of a trained investigator to local authorities and isolation hospitals, together with some practical form of encouragement. In the sister services official "pats on the back" and promotion for quiet spade-work are valued highly, why not in public health? Cold-water treatment is a bit old-fashioned now.

The second development is the dawn of research for the general practitioner in the suggestion, which has considerable support behind it, that the British Medical Association should have its (inexpensive nucleus) research laboratory, in which its members and research scholars might work, without discouragement to existing laboratories or to local research of its branches or divisions. This means that scientific interests are being levelled up to medico-political ones.

The third development is concerned with the momentous changes which will occur in our ranks when the State adds diagnosis and treatment to prevention and inspection. With the absorption of the Poor-law service a pathological service is inevitable. Doubtless this will receive the full consideration of the joint committee of the British Medical Association and the Pathological Society of Great Britain and Ireland, which is taking evidence and recommending on the conditions of service and tenure of office of medical bacteriologists and pathologists attached to public bodies. Some representative elected annually to watch the interests of the scattered members of such special branches of medicine as pathology might be an innovation worthy of consideration of the British Medical Association. Mr. Sinclair White has suggested that the Beit memorial scholarships should be apportioned in the same manner as those of the British Medical Association and associated with a research laboratory for medical practitioners under the same administration. I am, Sir, yours faithfully,

F. G. Bushnell.

Pathological Laboratory, Hove, Brighton, Feb. 5th, 1910.

THE "AUDIO": A DISCLAIMER.

To the Editor of The Lancet.

Sir,—Our attention has been called to an advertisement in certain papers of an apparatus called the "Audio," said to be designed for the electrical treatment of nerve deafness, and described as "combining in a simple form the treatment as applied at St. Bartholomew's Hospital."

We wish to disclaim all association with this apparatus and with the claims made for it. No such treatment is in use in the aural department of St. Bartholomew's Hospital. Some years ago trials were made of the effects of electrical treatment on various forms of deafness and were discontinued as being of no therapeutic value.

We are, Sir, yours truly,

C. Ernest West,
Aural Surgeon to St. Bartholomew's Hospital;
Sydney Scott,
Assistant Aural Surgeon to St. Bartholomew's Hospital.

Queen Anne-street, W., Feb. 12th, 1910.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of The Lancet.

Sir,—In your issue of to-day Mr. C. Mansell Moullin reasserts what Mr. Moynihan has recently insisted upon, the large proportion of cases of gastric cancer which give a history indicating the previous existence of gastric ulcer. This large proportion is absolutely contrary to my experience as well as to that of many careful observers. No one would for a moment think of impugning either the good faith or the ability of these two gentlemen, but it is permissible to suspect that there is some fallacy in their reasoning. I believe there is, and that it arises from the fact that both being distinguished surgeons who have earned a special reputation in the domain of gastric surgery, the stomach cases which come their way largely consist of old and recent ulcer cases. If an ophthalmologist were to write a treatise on Bright's disease based on his own personal observation he would naturally assure us that albuminuric retinitis is an almost invariable accompaniment of nephritis.

Such startling statements as that gastric ulcer precedes gastric cancer in 54 per cent., in 72 per cent., and in 90 per cent. of the cases will not be accepted by thoughtful people until substantiated by observers who see all sorts of gastric cases with and without indications for operation, or by a collective investigation of such *unselected* cases by a number of such observers. Till the question is thus settled most men, I believe, will prefer to abide by an estimate so much more in consonance with general experience as Dr. W. S. Fenwick's—3 per cent.[1]—an estimate made with as full knowledge of modern methods of investigation as is possessed by anyone.

I am, Sir, yours faithfully,

W. Gordon.

Exeter, Feb. 12th, 1910.

---

[1] Cancer and Tumours of the Stomach, p. 102.

Donations and Bequests.—Mrs. Wood of Liverpool has given £5000 to the Royal Infirmary, Halifax. —The Union Assurance Society, Limited, has sent £500 to the treasurer of St. Bartholomew's Hospital in response to the special appeal issued by the Lord Mayor in October last. —Under the will of the late Mr. Henry Minson of Green-lanes, London, N., the Earlswood Asylum for Idiots, the Royal Hospital for Incurables, Putney Heath, the London Fever Hospital, the Metropolitan Hospital, Kingsland-road, N., the London Hospital, the Great Northern Central Hospital, and the Royal Sea Bathing Hospital, Margate, will each receive about £400.

Durham University College of Medicine.—The annual meeting of the Court of Governors of the University of Durham College of Medicine was held in the College of Medicine, Newcastle-upon-Tyne, on Feb. 8th. The President of the College, Sir George Hare Philipson, was in the chair, and there were present the Duke of Northumberland, Lord Ravensworth, Dr. J. T. Merz, Principal Hadow, and others, besides representatives of the teaching staff of the College. The meeting was interesting in that it was the first one of the Court of Governors since the constitution of the College was formally changed last year (see The Lancet, July 17th, 1909, p. 193). The report of the Council on the working during the past year was received and approved, showing as regards the number of students an increase over the average of the past five years. It was reported that Professor S. McBean had resigned the chair of materia medica and therapeutics, and that steps will shortly be taken by the Council to appoint his successor. In connexion with the dental section of the College a scheme of examination has been drawn up (after consultation with the staff of the Dental Hospital, Newcastle); this is following the agreement by the Senate of the University to grant a dental diploma. The need of this diploma, granted locally, has been felt for some time past, since students can carry out their whole curriculum in the hospital and College, but have had to go to London, Edinburgh, or Glasgow to sit for their examinations. It was further announced that application had been made to the Board of Education for recognition of the College as a technical institution and for a grant in aid.

THE PUBLIC HEALTH AND THE PARIS FLOODS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Paris, Feb. 13th, 1910.

AT the Hôtel de Ville the authorities are so busy that it is no easy matter to find anyone who is free to talk quietly over the recent events, but I managed to obtain a good deal of interesting information. In the various offices occupied by functionaries who are responsible for some of the sanitary services the rush, the noise, and the crowds are immense. In the large courtyard of the Prefecture of Police there is an interesting confusion of strange objects. Here are rows of collapsible boats and carts with high wheels that rendered good service in maintaining communications in the streets when these were converted into canals, and barrels of all sorts of stores. The character of the crowd is also very different from what one usually sees, while the ordinary political police and the numerous detectives who keep order in the streets or endeavour to hold the criminal section of the community in check seem to have been brushed aside to make room for a totally different order of service. Broughams and motor cars arrive out of which jump men in frock coats, often with decorations in their button-holes. These are members of the professions concerned most directly in fighting the ravages of the floods—medical men, engineers, and architects. They all turn sharp to the left on entering, pass the municipal laboratory, and are lost in the stairs which at that corner of the vast building lead to the various offices devoted to the multiple sanitary services that depend on the Prefecture of Police.

Whether at the Hôtel de Ville or at the Prefecture of Police the floods have set much administrative machinery in motion which has been rusting in idleness for many a long year. Medical men who have never in their lives had occasion to go to either of these two great centres of local government have suddenly, and by reason of new and heavy responsibilities now thrown upon them, found it indispensable to see one or the other of certain functionaries able to give instructions or issue the materials needed in carrying relief to the victims of the floods. Everyone is working with a will, but the direction of the work seems sometimes a little vague, for to tell the truth everyone is a little in the dark what to do. So vast and far-reaching a flood is an unprecedented event—there are no lessons acquired in the past which can be utilised to-day. The flood of 1658, it is true, was as great a flood as that of to-day; but the one single practical lesson to be derived from it is that the preceding flood was quite as bad and yet it occurred only seven years previously. Consequently it would be extremely imprudent to imagine that we shall have to wait two and a half centuries before another flood of the same magnitude will occur again. On the contrary, past experience indicates that there may be another equally bad flood in a few years. Then, and besides the two great Paris floods of 1651 and 1658, there have been minor but very disastrous floods in 1740, 1802, 1807, and 1876. But the experience acquired during all these floods is of little or no use to us to-day, because the science of bacteriology has now taught us to combat dangers the existence of which was ignored when the previous great floods took place; besides, the complexities of civilisation have so increased that many more things in our daily life can now be put out of gear by a flood than could possibly be the case even in 1876. It is now felt that mere cleansing and drying do not suffice, but in many places rigorous disinfection is indispensable. Formerly Paris was a town almost exclusively of cesspools. There were but few sewers and they only drained away slop-water and rain-water. Now there are numerous sewers. Many of the houses have suppressed their cesspools and drain direct into these sewers which convey the sewage a long way into the country to various irrigation fields and sewage farms. A vast underground Paris has come into existence within the last half century and no one seems to have thought what would happen in this network of far-reaching subterranean thoroughfares if one of the greater floods recorded in history was to recur. No one could have believed that because a sewer burst on the southern side of the river, near the Chamber of Deputies, the escaped sewage would pass under the river by a railway tube and come bubbling up the steps of a railway station a mile away on the other and northern side of the river. Yet this is the explanation given of the inundations in front of the Gare St. Lazare, which is so familiar to the English visitors who come to Paris by the Dieppe or Havre routes. The proximity of tubes and main collecting sewers has brought about a new danger to health and life. At any moment a tube or an underground railway may be converted into a sewer. A flood, an earthquake, or simply a little jerry-building may produce such a catastrophe. Then, though we know how to clean and disinfect a room or a hospital ward, what experience have we in the purification of several miles of underground tunnelling?

Considering the new problems that arise it is perhaps fortunate the floods are subsiding slowly. Indeed, for the moment, they are not subsiding at all but rising again. This will give more time to plan proper measures. The need of time is all the greater, as there is no one supreme authority, but a multiplicity of departments, possessing different jurisdictions which have not even a common chief. Thus, if a private house is inundated, the Prefect of the Seine is responsible for the condition of the streets or dwellings. But if in that house there are tenants occupying furnished rooms then the matter falls under the jurisdiction of the Prefect of Police. If in the house there is a workshop or a restaurant, if a pastrycook, for example, or a baker works there, then the dwelling comes under the heading of an industrial building, for which there are special provisions according as the industries are wholesome or unwholesome. But supposing none of these conditions exist, and therefore the house is solely under the jurisdiction of the Prefect of the Seine, it suffices that one of the inhabitants should refuse to be vaccinated or should suffer from an infectious or contagious disease to bring the Prefect of Police on to the scene. The Prefect of the Seine performs many of the functions that would be the attributes of a mayor in a large English town, and he attends to the more purely local concerns of Paris or the small Department of the Seine, in which Paris is situated. The Prefect of Police, on the contrary, sees to the enforcement in Paris of the laws and regulations that apply not merely to Paris but to the entire country. As each prefecture is divided into numerous sub-departments, with their chiefs and sub-chiefs, many complications arise and much time may be lost in dealing with any situation. Thus, when a street is inundated, at the Prefecture of the Seine the Public Works Office and the Technical Service of Public Roads have to decide if the street is safe, and when the ordinary traffic may be resumed. The Sewers and Water-supply Departments see to the drains and mains in the streets, but it is the Direction of Architectural Works which deals by architectural inspectors with all that occurs within the houses, and is responsible for domestic hygiene. The Sewers Department sees to the soil-pipe within the house, the architect to the connexion outside between the house and the sewer; and as in many cases both are damaged by the floods the risk of confusion is great. Though it is the Prefect of Police who disinfects in case of transmissible disease, it is the Prefect of the Seine who disinfects if this is only desired from motives of cleanliness. Thus a child has a sore-throat. It may be merely a cold due to the dampness of the inundated house, but it may be the commencement of diphtheria. Therefore application must be made at the laboratory of Montsouris under the Prefecture of the Seine for a bacteriological diagnosis. If the result is negative, then the house remains under the Prefecture of the Seine, which has to disinfect, to provide any medical service or ambulance that may be thought necessary, because, though there may be illness, it is not an epidemic disease. But if the laboratory reports that it is a case of diphtheria then it is the Prefecture of Police which has to disinfect and provide medical services and ambulances. Thus two totally different and rival administrations are doing almost identically the same work side by side in the same streets, if not in the same houses. Obviously this must occasion unnecessary delay and work.

In the course of a week no less than 14,000 houses in Paris have been affected by the floods. In many cases it is only the cellars that have been invaded by the waters. In other localities the ground floors as well as the cellars have been completely under water. Never has there been so sudden, so widespread a catastrophe. But the worst feature of all has scarcely been noticed. The *dépotoire* at Billancourt is flooded and inaccessible. Here it is that the contents of the cesspools, the moveable tubs, and the metallic pails which retained the solids while allowing the liquid contents to escape to the sewer are taken and emptied, treated chemically, and converted into manure. Thus the disposal of the night soil of thousands of houses is suddenly rendered impossible. Many cesspools are full to overflowing, must be emptied immediately, and yet what is to be done with their contents now that the main sewage works are inaccessible? As a matter of fact, some of the great tanks on wheels that are loaded with the crude, concentrated sewage extracted from the cesspools had to be emptied straight into the river. Everybody agrees that this is a most abominable thing to do, no one would be personally responsible for such an act; every person concerned loudly denounced the bare suggestion of such a proceeding, yet they all had to tacitly admit that there was no other way out of the difficulty.

With the tubs or pails, especially now that the waters have partially subsided, the matter was easy to manage. Sewage was conveyed to a neighbouring sewer mouth and there emptied. But soon the people who lived close by clamoured against the horrible odour arising from this operation, though it had been proposed that a sewer mouth separated by the Tuileries Gardens from inhabited houses should be selected for this purpose. As for the remainder, probably some of it will be emptied in the Seine, but lower down the river. It is this somewhat extensive mixing of sewage with the waters of the floods that constitutes one of the principal dangers of the situation. Perhaps, after all, what is thrown into the swollen river and in mid-current will not do any harm. It will be carried along with such rapidity and diluted with such enormous volumes of water that the process of natural purification should be both rapid and effective. But the water that enters the cellar of a house remains there. The walls prevent its racing forward to the sea and exclude the purifying wind and light. At best this water can only escape by slowly percolating into the soil beneath, and then it leaves a deposit of slime in the walls and floor—slime which may be mixed with fæcal matter due to broken soil-pipes or overflowing cesspools. It has been suggested that such water when in cellars should be mixed with a disinfectant, so that as it sinks into the soil or penetrates the porous walls it would take the purifying chemical with it. But who is to see to all this? Imagine 14,000 houses simultaneously in need of aid or at least of surveillance, for it would be most imprudent to trust to private individuals to do all the work without some experts to watch that it is properly done. One of the first questions I asked was how the disinfecting staff had been increased, but I was met with the disconcerting reply that it had not been increased. How could it be increased? Strangers could not be employed, not merely because they were lacking in the technical knowledge of the work that had to be done, but more particularly because they could not be trusted. The first comer cannot be introduced under the responsibility of the public authorities into private houses, where he might steal many things, unless he was known to be trustworthy.

Paris, Feb. 15th.

The position is improving because it has been decided that for the moment no attempt shall be made to empty the cesspools thoroughly, but that only two to three cubic metres shall be withdrawn. Then permission is given to empty a certain portion of the contents of the cesspools into the sewers within Paris instead of taking them all to the sewage works outside the city. The only sewage works accessible are at Aubervilliers, as these can be reached by the tank barges of the St. Martin canal. On the other hand, the sewage works on the island of Billancourt are inaccessible because the barges cannot pass under the bridges of the swollen river. The position is as follows. There are 80,000 houses in Paris and of these 45,000 drain direct into the sewers. For the remaining 35,000 houses there are 29,200 cesspools, 11,800 metallic *tinettes* or pails that only retain the solids, and 8300 tubs or pails that retain everything. The tubs and *tinettes* are removed, on an average, once a week. This is done in the daytime by carts and causes little or no nuisance. The cesspools are emptied into huge tanks by pneumatic suction, produced by a portable steam engine. In normal times about 150 cesspools are emptied every night. But the floods have disorganised this service, and the waters of the floods having penetrated many cesspools these need to be emptied at once. Thus from Sunday to Monday this week no less than 215 fresh applications were received from householders urgently demanding that their cesspools should be emptied. In that interval 295 cesspools were partially emptied; this, then, is a gain of 80 on the demand. But there remain 595 cesspools that have been neglected, and it will require another week to make up for these arrears. The state of affairs in the suburbs just outside Paris is far worse. Of the 14,000 houses which have been affected by the floods, presumably rather less than half have cesspools. Even when these were watertight the flood waters entered from above through the small hole made to lift the stone that constitutes the lid or entrance to the cesspool. These cesspools therefore are overflowing, and the great difficulty at present is to prevent the sewage contamination of the basement and cellars of the houses.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Bristol Eye Hospital.

ON Feb. 3rd the Lord Mayor presided at the annual meeting of the Eye Hospital, held at the institution. During 1909 the in-patients numbered 441, and the out-patients 8628. The annual report, presented by Mr. Edmund King, showed that a balance of £1100 was due to the treasurer. The Lord Mayor called attention to the fact that a large number of outlying towns and villages sent patients to the hospital, and said that it would be well to ask for more contributions to the Hospital Sunday Fund from such places. Mr. F. Richardson Cross, in moving a vote of thanks to the Lord Mayor, remarked that ever since the hospital was founded the mayor or lord mayor had been a member of the committee, and spoke of the large number of former residents who were now acting as hospital ophthalmic surgeons in London and the large provincial towns. In June the hospital centenary is to be celebrated by a fête at the Zoological Gardens.

The Lord Mayor's Hospital Sunday Fund.

On Jan. 30th collections were made at the places of worship in Bristol and neighbourhood on behalf of the Hospital Fund. The accounts received up to last week reached a total of £582, about £28 more than at the corresponding date last year. The service at the cathedral on Sunday morning was attended by the Lord Mayor and Lady Mayoress, the Sheriff and Mrs. Riseley, four ex-lord mayors, and other members of the city council.

The Queen Victoria Jubilee Convalescent Home, Durdham Downs.

The annual meeting of the subscribers to this institution was held on Feb. 3rd. The medical report stated that during 1909 1847 patients had been admitted (1016 males and 831 females). Of these 1847 patients 611 were sent from the Royal Infirmary, while the General Hospital sent 652; 334 were free patients, 148 paying patients, and 68 came from the Bristol Dispensary, 17 from the Clifton Dispensary, and 17 from the Eye Hospital. The average daily number was 79, and the average stay 15¾ days. The financial statement showed the total income for the year was £3174, and the expenditure amounted to £2839.

The Bristol Naturalists' Society.

At the annual meeting of the Bristol Naturalists' Society which was recently held Mr. G. Munro Smith, L.R.C.P. Lond., M.R.C.S. Eng., was elected president for the ensuing year.

The Royal United Hospital, Bath.

The annual meeting of the subscribers of the Royal United Hospital, Bath, was held on Jan. 26th under the presidency of the mayor. The medical report stated that during 1909 the in-patients numbered 1385, against 1298 in 1908. 14,155 out-patients were treated, compared with 13,765 in the previous year. 279 patients were visited at their homes, an increase of 36 over the preceding 12 months. The financial statement showed that the income amounted to £6248 and that a deficit of £634 remained at the close of the year. The committee in the report state that "in October last Mr. T. D.

Ransford, the senior honorary surgeon, resigned his appointment after 27 years' service, to the regret not only of the managing board but also of all connected with the institution."

District Nursing Association for Exeter.

A meeting was held on Feb. 2nd, under the presidency of the mayor, to consider a scheme for the establishment of a district nursing association for the poor of Exeter, in conformity with the Queen Victoria Jubilee Institute for Nurses. There was a good attendance; amongst those present were a large number of the local medical men. The meeting unanimously decided that it was desirable such an association should be formed in Exeter, and it was also determined to shortly call a public meeting to bring the scheme before the citizens.

The Taunton and Somerset Hospital: The Centenary Year: The Abuse of Charity.

The annual meeting of the subscribers of the Taunton and Somerset Hospital was held on Feb. 10th. The financial statement showed a deficit of £744. The medical report was satisfactory. The President (the Hon. E. W. B. Portman) in his speech remarked that this was the centenary year of the hospital; the institution was founded in 1809, when the jubilee of the reign of George III. was celebrated. A certain Dr. Malachi Blake thought something of permanent value to the town should be done, and he called a public meeting. As a result a considerable sum of money was subscribed and the foundation-stone of the hospital was laid on April 11th, 1810. Dr. J. A. Macdonald said that the hospital was one of the most economically worked in the country, but he thought that 75 per cent. of the patients whom he saw there were not suitable candidates for hospital treatment as they could afford to pay a medical man.

Feb. 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Women and Residential Appointments at the Manchester Infirmary.

As one of the Manchester papers puts it, "the battle for the admission of women to residential posts at the Manchester Royal Infirmary has continued to rage during the current week," and will no doubt continue to rage for some time to come. Letters to the papers have been sent in shoals, pamphlets issued, and leading articles written. The advocates for the admission of women have some of them detracted from the sympathy felt for their cause by foolishly suggesting that subscriptions for the infirmary should cease or be cut down, showing that the cause of the women was in their minds more important than the good of the patients. However, the matter has been settled for a time by the motion carried on Friday last at a special meeting of the trustees held in the Mayor's parlour. Sir William Cobbett, chairman of the board of management, proposed the following motion: "That it is not desirable to appoint women to resident and surgical posts at the Manchester Royal Infirmary." Bishop Welldon seconded, and said "it embodied the unanimous feeling of the committee which inquired into the case for women," but also "the feeling which accorded with practically the universal custom of general hospitals to which medical schools were attached." He said the original claim was for complete equality with men in all cases, a demand which he felt it was the duty of the board unhesitatingly to resist, and in speaking of the structural changes that would be required said he thought it was a pity that the supporters of the women's claim had allowed the building of the new infirmary to proceed without first asserting their contentions. He urged that in a general hospital a woman doctor was not worth so much as a man in the treatment of general cases. After indicating the cases where the attention of women doctors would be undesirable, the Dean said that the natural delicacy and refinement of women were more precious to the community than the medical claims of women. Mr. J. E. Platt, chairman of the medical board, in supporting the motion, said the board was not absolutely unanimous on this question, but the great majority were opposed to the admission of women to resident posts, though they considered that they might be admitted to the gynæcological, ear, throat, and burns departments, provided that suitable accommodation could be found for them, which was not so simple a matter as had been supposed. Dr. E. S. Reynolds said the difficulty of having women resident doctors in all general wards was to his mind insuperable. He spoke of the sex difficulty, which some women doctors said did not exist in the profession of medicine. "It was incomprehensible that a medical woman should ever wish to be an attendant in a male ward. ...... The male patients did not want female residents, and the women were enormously in favour of male doctors." Several speakers were in favour of the claims of the women doctors, and some of them wished to postpone and refer the question back. Mr. C. P. Scott proposed as an amendment to add to the motion the words, "on the same terms as men," thus leaving it open for them to be admitted on some other terms. The amendment, having been seconded by Professor Herford, was put to the meeting and defeated, the original motion being carried by a large majority. Apart from the special question it would be unwise to carry this innovation out at present on account of the unknown expense it would involve, for the financial condition of the infirmary, both as regards the present and the future, is by no means free from anxiety.

The Manchester Ladies' Public Health Society.

The annual meeting of the Manchester Ladies' Public Health Society and Mothers' Guild was held recently, the Lord Mayor, Mr. Behrens, presiding over a large assembly. The report told of the increasing good work of the society in helping distressed cases in Manchester and Salford and in instructing and helping mothers in the poorest parts of the city. The institution does not give money, but gives help in the way of food, clothes, or milk. The Lord Mayor said that the society was doing part of the work of the corporation. Its health visitors were corporation officials, and the work done is under the supervision of the medical officers of health of Manchester and Salford. There is a happy combination of voluntary and paid help, as the lady visitors may be called honorary members of the staff. Mr. J. Howson Kay explained the means adopted by the society to familiarise poor mothers with the right methods to be used in the rearing of their children. He remarked that he would like to see a Chancellor of the Exchequer put a duty of 10*s.* a pound on tea, if only to prevent mothers giving it to their children, asserting no child under the age of six years should ever have either tea or coffee to drink. The Dean and the Mayor of Salford also spoke.

Feb. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Medical Referees.

THE Home Secretary has appointed Dr. A. Freeland Fergus and Dr. James Hinshelwood, both of Glasgow, to be medical referees under the Workmen's Compensation Act, 1906, with a view to their being employed in ophthalmic cases (including cases of miner's nystagmus) which may arise in the sheriffdoms of Lanark and Ayr respectively. The Secretary of State has also appointed Dr. Joshua Ferguson, of Paisley, to be one of the medical referees under the Workmen's Compensation Act, 1906, for the sheriffdom of Renfrew and Bute, and to be attached more particularly to the Paisley district, in place of Dr. Graham, deceased.

Scottish Poor-law Medical Officers' Association.

One of the advantages which medical practitioners derive from membership of a defence association is the obtaining of sound advice when they encounter legal or administrative difficulties. In the annual report of the Scottish Poor-law Medical Officers' Association, dealing with the events of the year 1909, several examples are given of cases in which such advice was applied for. In the first of these a Poor-law medical officer had signed certificates on which a person suffering from acute alcoholic insanity was removed to an asylum. In three days the patient was sufficiently recovered to be discharged, and then threatened the medical officer with an action-at-law for £1000 damages. The advice given in reply to an inquiry was that the medical man should inform the plaintiff's law agents that he was instructed by the inspector of the parish council (*Anglice*, clerk to the guardians) to make the examination, and that the council must be communicated with. This occurred nearly 12 months ago and no further action seems to have been taken. In another case a parish council asked a medical officer if he would reduce his fees to private patients if his official salary were raised. This apparently illegal course of action was brought under the notice of the Local Government Board for Scotland, but with an unsatisfactory result. Another inquirer was informed that if formally requested by the inspector to do so he must attend old age pensioners as part of his official duties as parochial medical officer. A statement of various disabilities and other grounds of complaint connected with the Scottish Poor-law medical service was laid before the recent Royal Commission on Poor-law, and is appended to the Report. Here we find mentioned a grievance to which allusion has on several occasions been made in THE LANCET, namely, that outdoor medical officers may be dismissed by their parish councils without cause being assigned. Complaint is also made that for vaccination only a minimum fee of 1*s.* 6*d.* is paid irrespective of the distance which the vaccinator may have to travel in connexion with a case; that no extra fees are paid for the treatment of fractures or for midwifery; and that no provision is made for superannuation. On all these points the Royal Commission supported the views of the association, and the report adds that an endeavour must now be made to get the recommendations of the Royal Commission incorporated in any legislative proposal which may be brought before Parliament. The secretary of the association is Mr. William L. Muir, 1, Seton-terrace, Dennistoun, Glasgow.

Grantown Inspector of Poor and Medical Officer.

At a meeting of Cromdale parish council held on Feb. 9th letters were read from the Local Government Board bearing on the recent inquiry into a pauper's complaint of ill-treatment at the hands of the local inspector of poor. The first was addressed to the late chairman and stated that the inquiry had revealed the substantial truth of the charges made against the inspector by Dr. A. Hutchison, medical officer. In another letter Dr. Hutchison was informed that the Board "have severely censured the inspector for the manner in which he treated the pauper, a blind and helpless person, notwithstanding your repeated remonstrances. The Board commend your personal action in the case. You have performed a necessary public duty in bringing the inspector's conduct under the notice of the parish council."

Dundee Town Council and the Sanatorium.

The public health committee of the Dundee town council, at a meeting on Feb. 8th, discussed the question of the assistance to be given the infirmary directors in their project of carrying on the sanatorium. In a communication on the subject the infirmary directors indicated that they hoped to work the institution at an annual cost of £2500. Against this they had from Mr. Caird's gift £1000; interest on investments £650; and paying patients and subscriptions £300; leaving a deficit of about £550. To meet this shortage the directors asked the town council's assistance, and it was suggested that its help would best take the shape of a guarantee, extending over the period covered by Mr. Caird's gift, of a minimum of seven patients at 30*s.* per week, the patients to be recommended from the municipal dispensary and to be approved by the medical officers to be appointed by the infirmary directors, and also to be under the control and subject to the rules of the directors during treatment. Dr. C. Templeman stated that this was equivalent to an annual payment of £546. The Lord Provost moved that the committee recommend the town council to grant a sum equal to the expenses of the board of the patients to be sent to the sanatorium through the municipal dispensary. This motion was agreed to.

Criticism of Inverness Infirmary.

A somewhat animated discussion arose at a meeting of Inverness town council on Feb. 7th regarding the giving of a donation of £25 to the Northern Infirmary. Councillor MacEwen moved that the council postpone giving the donation until it was satisfied that adequate steps were taken by the directors to restore public confidence in the management of the infirmary. Provost Gossip regretted exceedingly the attitude taken up by Mr. MacEwen. Those who happened to know, who attended the weekly meetings, could testify that there was no better conducted institution of its kind than the Northern Infirmary. The infirmary would be a great deal better off if it were not for an outside coterie of philanthropists of a kind who were willing to jump upon the institution upon every occasion. If any critic could put his finger on any spot that was not sound in connexion with the institution he (the Provost) was prepared to give £100 to the funds. It was agreed to give the contribution.

Aberdeen Medical Appointments.

At a special meeting of the board of directors of the Aberdeen Royal Infirmary, held on Feb. 9th, Mr. George Herbert Colt, of London, was appointed an assistant surgeon. The status of physician was conferred on Dr. John F. Christie, at present assistant physician in charge of the department for diseases of the skin. At a meeting of the Aberdeen town council held on Feb. 7th, Dr. A. T. Gordon Beveridge was appointed police surgeon in room of Professor Matthew Hay, resigned. The Watching Committee recommended Dr. Beveridge, Dr. A. R. Laing, and Dr. David Rennet as a leet, and the first vote of the council on the three names resulted: Dr. Beveridge, 16; Dr. Rennet, 9; Dr. Laing, 7. The second vote curiously gave Dr. Beveridge and Dr. Rennet 16 votes each. The Lord Provost gave his casting vote in favour of Dr. Beveridge, who was accordingly appointed.

Feb. 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Belfast Milk-supply.

THE Local Government Board has sent a communication to the Hillsborough rural council to the effect that the corporation of Belfast has applied for powers of inspection and control of dairies in outside districts from which the milk-supply of that city is drawn. While the Board said that it would not be disposed to give effect to this application where the council of a rural district had shown itself willing to carry out the administration of the Dairies, Cowsheds, and Milkshops (Ireland) Order of 1908, it thought the occasion suitable for impressing on the council and inspecting officers the necessity of affording all possible protection to consumers of milk alike in Belfast and elsewhere. The council should therefore instruct its officers to be energetic in the inspection of cowsheds and dairies, and to report all insanitary conditions which might be found to exist in connexion with such premises. Extracts taken from a statement furnished by the officer of health of Belfast giving the results of a recent inspection of certain dairies in the Hillsborough rural district, from which portion of the milk-supply of Belfast is derived, were enclosed by the Local Government Board for the benefit of the rural council, which at its monthly meeting on Feb. 11th considered the matter, when its sanitary sub-officer said that the small farmers were the greatest offenders and it was very difficult to catch them. Their practice was to meet the Belfast milkmen on the road and deliver their milk to them. If they happened to be seen they ceased for two or three weeks, but he and the veterinary inspector hoped to have some of them before the council very soon.

The Ulster Medical Society.

At a meeting of the Ulster Medical Society held on Feb. 10th Mr. A. B. Mitchell opened a discussion on Appendicitis, advocating operation as soon as the diagnosis was made. The following took part in the debate: Dr. J. R. Davison, Dr. H. L. McKisack, Dr. A. Dempsey, Mr. Robert Campbell, Dr. John Campbell, Dr. J. S. Darling, Dr. R. G. M. Clements, Dr. John Rusk, Dr. C. Kevin, Dr. A. Montgomery, and Dr. G. Robb. The discussion showed marked divergence of view, the surgeons urging early operation, while the physicians did not see the necessity for this course, as some said they had never had a patient die from the disease, others related cases of patients who had one attack and no recurrence, and others thought operation was best done not during an acute attack but in a quiescent period.

Obituary: William Stewart, M.D. Glasg.

Dr. Stewart, one of the oldest medical practitioners in Ireland, died at his residence, Portadown, on Feb. 11th, at the advanced age of 87 years. A native of County Tyrone, he studied, as so many Ulstermen did in his young days, in Glasgow, where he graduated M.D. in 1855, having in the year previous obtained the L.R.C.S. of Edinburgh. Shortly after graduating he settled down in practice in Portadown, where for many years he was dispensary medical officer and health superintendent. He had a large and lucrative practice and was a man of keen observation and of ripe experience. He was a leading member of the local Masonic organisation. Dr. Stewart was twice married, and one of his daughters is wife of a leading Belfast general practitioner, Dr. William Gibson, J.P. Dr. Stewart was buried in Portadown on Feb. 14th.

Medical Officer of Glenties, Co. Donegal.

Mr. W. J. O'Doherty, L.R.C.P. & S. Irel., was, on Feb. 12th, elected dispensary medical officer for the Carrick District of Co. Donegal.

Clonmel Asylum.

Further additions to the Clonmel Asylum are now in contemplation, although some £30,000 have already been spent in providing additional accommodation for patients in that institution.

Feb. 15th.

PARIS.

(From our own Correspondent.)

The Floods.

A welcome fall in the height of the Seine began a few days ago and little by little the flooded streets are resuming their normal appearance. They are not yet all of them open for traffic, for in many places they have either fallen in or threaten to do so; the basements also remain flooded in many parts of the city, and the heating arrangements, as well as the supply of electric light and gas, have not yet been everywhere made good. The meetings of several learned societies have been adjourned, but that of the Society of Medicine was held as usual. People shiver in the hospitals and in the large shops in consequence of the breakdown of the heating and lighting appliances; in the shops the assistants wear overcoats or mantles and the customers crowd together under some inadequate lamps, hastily improvised. All these discomforts, however, are borne with admirable patience because everyone feels that their end is at hand. The officially prescribed sanitary measures, details of which I gave in my last letter, have all been carried out, and at the present moment disinfection and disinfectors are to be seen everywhere. The water floods have been succeeded by floods of placards and circulars of disinfectors, and especially of business houses strongly recommending various systems of disinfection. The newspapers are full of advertisements on this subject. The conditions of medical life are resuming their ordinary course and the use of small boats in the streets is becoming less. Only the *banlieue* is still under water, but to a less extent than a few days ago; it is there that most damage has been done, small houses being either seriously injured or totally ruined, and many of those which the floods might have spared have suffered from the depredations of the criminal classes. The railway and tramway tracks are being gradually repaired. The unfortunate medical men can at last make their professional visits with less difficulty, but it is not yet possible to take back the patients to the hospitals which had to be vacated. Owing to the recent rains the Seine has risen to a slight extent, but this, it is to be hoped, is only temporary. It has already begun to give way, and no new devastation has occurred. Life is again taking its normal course, save in the unlucky *banlieu*, but the suburban hospitals have not yet been restored to working order. Memorable in the midst of the disasters are the admirable patience of the population, the immense extent of the charitable aid which was immediately forthcoming, and by which the worst difficulties of the situation were faced, and finally the fraternal spirit manifested universally without distinction of class, opinion, or rank. In the next place we have reason to be proud and thankful for the kindly and unanimous action of neighbouring nations, and even of some distant ones, who expressed their sympathy and sent financial support to assist us in this calamity.

Insanity Recognised as a Ground of Divorce.

A legal decision of interest from a medical point of view has just been delivered by the Fourth Chamber of the Civil Tribunal of the Seine. The question was whether insanity of a husband or wife would form a ground of divorce when this condition had existed before marriage but had been concealed from the other person. A woman who had been under treatment by professors of the Faculty of Nancy was married two years afterwards during a lucid interval in 1898, but a few weeks after the marriage she had to be sent to a lunatic asylum, where the medical officers declared her to be incurable. The court held that the wife's mental aberration previous to marriage had been concealed from the husband, that if he had known of it the marriage would not have taken place, and that a serious wrong had been done him. A divorce was therefore granted. Up to the present time insanity has never been recognised here as a ground of divorce, and it used to be said as a joke that this was for fear that all wives would say that their husbands were mad.

Mental Aberration in the Navy.

A circular on the subject of mental aberration in the navy has been recently sent by the Under-Secretary of State for the Navy to vice-admirals commanding-in-chief, to maritime prefects, to general officers, and to other officers of the higher ranks commanding at sea. After mention of the fact that mental diseases are particularly frequent in the navy as sequelæ of tropical diseases, insolation, paludism, and various toxic conditions met with abroad, the Under-Secretary points out the necessity of remedial measures. He will therefore appoint in the medical department of the navy lunacy experts who will remove from the fleet such men, whether *inscrits* or volunteers, as are the subject of mental defects, and will cause all men of actually unsound mind to be withdrawn from the service. Instruction in mental diseases with three months' attendance on the special clinical course of the Bordeaux Faculty of Medicine is therefore obligatory on all who are studying for the medical department of the navy. This instruction will be completed by a clinical and practical course at the École d'Application in Toulon, on leaving which the student must pass an examination and write a paper on a subject in psychological medicine. Appointments of specialists in neuro-psychiatry have also been made in the navy to the number of five for each of the principal hospitals of that service, and in addition there will be experts to advise councils of discipline and councils of war, and a special supervision of prisons. The medical examinations will be held in the ports; the candidates will write a paper on a subject connected with mental pathology, and their knowledge of neurology and psychiatry, as well as of the medico-legal and therapeutical applications of those branches of medicine, will be tested clinically.

Precautions against Industrial Lead Poisoning.

On the suggestion of the Minister of Labour the President of the Republic has issued a decree to the effect that in industrial establishments where the work involves danger of lead poisoning the employers, directors, or managers shall engage a medical man to examine the workpeople and shall pay his fees. No person may be employed on such work unless provided with a certificate from the medical man stating that he does not suffer either from lead poisoning or from any disease likely to be aggravated thereby. No person may be kept at such work if the certificate is not renewed once every three months. The employer must take care that the medical man examines every worker who either complains of indisposition due to his employment or is desirous of being medically examined. A special register, always available for reference and accessible to the inspector of labour, shall record for each worker the dates and duration of his absences from work on account of any indisposition whatever, the dates of the certificate giving the reason for such absences, notes of any medical treatment, the name of the practitioner in attendance, and the recommendations made by the medical man of the establishment. The decree will take effect three months after its publication.

Increase of Medical Fees.

For some months all the medical societies of the various districts of Paris have been considering the question of an increase in medical fees. Everything is becoming dearer. Rent and official permits cost more than they used to do, and at the same time the mutual aid societies, the system of insurance against sickness, and the giving of free advice at the hospitals have materially reduced the incomes of practitioners. A general increase in fees was therefore decided on, and the practitioners of the Twelfth Arrondissement gave notice that after Jan. 1st, 1910, their charges would be raised by about one-third, the lowest rates being as follows: advice at a medical man's house during his usual consultation hours, 3 francs; visit to a patient on ordinary working days from 8 A.M. to 7 P.M., 4 francs; visit on Sundays and holidays from 8 A.M. to 12 noon, 4 francs; visit by request from 6 to 8 A.M. and from 7 to 10 P.M., 5 francs; day visit of urgency, 5 francs; day visit at a time specified by the patient, 5 francs; visit on Sundays and holidays from 12 noon to 7 P.M., 5 francs; night visit from 10 P.M. to 6 A.M., 10 francs. When several practitioners are summoned to an urgent case each is entitled to charge a fee. As hitherto, operations, examinations, and special treatment will be charged additional. The Practitioners' Society of the well-known health station, Chatel-Guyon, have adopted the following scale of charges. The fees for the special treatment of patients requiring attendance in their homes are fixed at a minimum of 100 francs for five visits or fewer. The fees for thermal treatment including the first examination, the arrangement of the introductory stage, and four consultations at the medical man's rooms are fixed at a minimum of 60 francs. For extra consultations at the medical man's rooms during his usual hours of attendance the minimum fee is 10 francs; for consultations at the patient's hotel or at the medical man's rooms by appointment the charge is 20 francs. For single visits or for making the introductory arrangements for a course of treatment the minimum charge is 20 francs. Urgent visits and night visits from 9 P.M. to 7 A.M. are charged double. These fees are payable for each patient under treatment. The system of fees at half rates is no longer in operation.

Feb. 15th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Upper Chamber.

SUDDENLY the Prime Minister has recommended to the King the names of 33 distinguished compatriots for Senatorial honours—a step not merely of local but also of outlying interest, particularly in countries like Great Britain, where the conflict between the two Houses, Upper and Lower, has raised the question as to whether the former is needed at all, or, if needed, whether its membership should be hereditary or elective. In Italy the aristocracy, with few exceptions, hold aloof from public life, the number of the really patrician families who court a political career being told off on the fingers of one hand. The young Italian kingdom, therefore, while averse from single-chamber parliaments, has had to choose the members of its Upper House from the general body of citizens, selecting by preference those of the Lower House who had shown an aptitude for affairs, and after these those of the public, professional or lay, whose special knowledge and experience made them a desirable adjunct to such an assembly. Quite an exceptional number of the latter have been men of medical training and achievement, insomuch that few, if any, names of the highest distinction in medicine, surgery, or hygiene, have failed to receive Senatorial rank. In practical working, the system has more than justified itself, and Italy owes much of her undoubted progress in sanitation and civic well-being to the counsels and enactments emanating from a professionally and, *par excellence*, a medically reinforced Senate.

The Senator Camillo Bozzolo.

Universal satisfaction has followed the accession of this eminent clinician and consultant to the Upper House, belonging, as he does, to the great subalpine school, whose centre, Turin, has already contributed to the State such men as Moleschott, Concato, Bizzozero, Lessona, Giacomini, and Lombroso—to mention only the dead. Born of a noble family in the province of Como on May 30th, 1845, he studied medicine at Pavia, joined, while still an undergraduate, the Garibaldian contingent in the war of independence, returned to the classes on the expulsion of the Austrians from Upper Italy, took the *summos in medicinâ honores* at his Alma Mater, and entered on clinical work at the Ospedale Maggiore of Milan. Transferred to the chair of medicine in Turin, he wrought a beneficent change in the methods of study and teaching, replaced the traditional reliance on books by early, steady, systematic observation at the bedside, and succeeded in making his pupils proficient in what Baccelli has called the physician's *prima cura*—diagnosis. As a preliminary to this he insisted on a thorough drilling in what the older English school called the "institutes of medicine," and was the first to found in Italy a chair of "propædeutica medica," the business of which was to train the perceptive and inductive powers by contact with the living reality, responsive to his watchword, "facta, non verba." His published writings are all in keeping with his professorial work and are esteemed by the busy practitioner accordingly. I need only mention such suggestive and serviceable treatises as his "Bagno Freddo e Raffredato nella Polmonite" (The Bath, Cold and Cooled Down, in Pneumonia); on "Pericardite Latente"; on "Necrosi del Pancreas"; and on "Febbri Criptogenetiche." In hospital administration he has been a pioneer and rehabilitator; while in public hygiene he has contributed to the solution of many vexed questions. Eleven years ago he opened the *medicus annus* of the subalpine school with the masterly prolusion entitled: "Influenza della Civilt à sulla Durata della Vita Umana" (The Influence of Civilisation on the Duration of Human Life), which brought him congratulations from the chief seats of learning in Europe and, locally, gave him a place on the communal council of Turin, where he sits as "assessore per l'igiene."

The Senator Tommaso De Amicis.

Another professor and consultant in the medical faculty is the above-named Neapolitan physician, who, born in 1838 in the province of Aquila, has held with much acceptance the chair of Dermosyphilopathy in the University of Naples. His promotion to Senatorial honours is recognised throughout the profession as a well-merited tribute to exceptional proficiency in his special department—proficiency not only signalised at the bedside and in the lecture-room, but also in numerous publications and contributions to the "Atti" of medico-chirurgical societies and congresses. He has translated the well-known treatise of Belhomme on "Vénériologie," supplementing it with notes and excursus of which it has been said, *la sauce vaut mieux que le poisson.*

The Senator Luigi Pastro.

This veteran, who takes his seat in the Upper Chamber in his eighty-eighth year, having been born at Treviso in 1822, had, like Camillo Bozzolo, to suspend a brilliant period of medical study to serve in the war of independence. In 1849 he was one of the heroic defenders of the Venetian Republic under Daniel Manin, after which he was involved in trial for high treason with many other compatriots at Mantua. Condemned to 18 years' imprisonment, he withstood the rigours of an Austrian State fortress, heavily ironed and sometimes bastinadoed for his refusal to betray his confederates, till 1856, when he entered the Sardinian army as surgeon and rose by rapid stages to ever higher grades on the medico-military staff till in 1884 he retired on a pension. During his professional career he did splendid work on the occasion of the cholera epidemics, which (especially that of 1884) numbered many victims throughout Italy, and even in his septuagenarian and octogenarian years he was called in consultation at many Italian centres—Florence, Venice, Milan, and Rome. Just four years ago he published his "Ricordi di Prigione" (Prison Recollections), which will bear and reward perusal even after the classic work on the same theme of Silvio Pellico, "Le Mie Prigioni."

Other men of science indirectly connected with medicine have also been elevated to the Senate, of whom it will suffice to mention Giacomo Ciamician, professor of biological chemistry in the University of Bologna, where his contributions to his special subject have won him honourable recognition from the leading scientific associations of Europe—Italian and Continental.

Feb. 5th.

VIENNA.

(From our own Correspondent.)

An Unusual Case of Carcinoma of the Pharynx.

At a recent meeting of the Gesellschaft der Aerzte Dr. Koschier showed a woman whom he has had under observation for nearly ten years suffering all the time from carcinoma of the naso-pharyngeal space. At present the neoplasm fills the entire nose and the back of the pharyngeal space; the nose itself is much thickened and the right eye is amaurotic from retrobulbar neuritis; some portions of the tumour are superficially ulcerated, but otherwise the patient makes little complaint of her condition, no pain at all having been experienced since the beginning of the disease. An operation had been refused when the neoplasm was small, and at the present time when an operation was hardly possible the patient was still not inclined to permit it. Repeated examinations by competent pathologists had confirmed the diagnosis. Dr. Koschier pointed out the fact that it was necessary to be very careful as regards the prognosis of tumours of this region, for this case, if operated upon even nine years ago, would have been made use of to swell the statistics of cancer-operability, whilst its malignity was so small that it is doubtful whether an operation would not have lessened the chances of the patient's survival.

Painless Childbirth.

At the same meeting Dr. Eisenberg read a paper giving the results of his attempts to make labour painless. He said that the scopolamin-morphia method was not advisable because of its dangers and the prolongation of the period of expulsion of the fœtus. He employed a partial chloroform anæsthesia produced by inhalation of the vapour from 10 or 15 drops of that substance on a piece of gauze, which was removed every two or three minutes and only used during the intervals between the contractions of the uterus. In this way the pain was brought down to a minimum without the woman's consciousness being affected, and the power of the uterine contractions was not diminished. This sort of chloroform anæsthesia could be kept up for hours (in one case for 31 hours) without any harm whatever; it had been called "fractioned minimal narcosis," and at the surgical clinic of Dr. Schnitzler extensive operations had been done under it. A similar result might be obtained with ether, although its use is a little more difficult, because with it the induction of the slight but sufficient stage of narcosis requires more skill than with chloroform. Ether is perhaps even the better of the two, for chloroform has sometimes its dangers, as in the case of the idiosyncrasy, when a few drops may, it is said, prove fatal. The method which Dr. Eisenberg recommended is much used in France and some other countries.

Distribution of the Medical Profession in Austria.

The distribution of practitioners in Austria is, as everywhere, dictated by expectation rather than by actual need; it is, therefore, no wonder that in some districts medical men are relatively scarce. In a very interesting contribution to the *Klinische Wochenschrift* Professor Fraenkel mentions the difference of care taken by the State for the spiritual needs and for the bodily needs of the population. Whilst in every village there is a church, or at least a chapel, where a priest offers religious teaching and consolation to the peasantry, there are, on the other hand, many places inhabited by several hundreds of persons where medical help cannot be had, and from which it is a journey of several hours to reach the nearest medical man. In the cities the ratio of the medical men to the population is decidedly high, as, for instance, in Prague, where it is 1 to 300; in Vienna, where it is 1 to 750; and in Graz, where it is 1 to 560. In the country districts, however, there is an average of 1 medical practitioner to 2500 inhabitants, but with wide local variations, for in Galicia in the eastern part of the empire the proportion is 1 to 16,000, and in Görz in the south it is 1 to 17,000. If the districts are considered as regards their size it is found that the inner or central counties are better off. In Lower Austria, for instance, an area of about two square miles is provided with one medical man; in the north about eight square miles are expected to be served by one medical man, but in the southern coast districts there is only one medical man for a population distributed over 36 square miles. Naturally, such conditions must be explained by the inadequate remuneration of the public appointments or the unsatisfactory conditions of private practice. A few figures will be useful. In 1908 there were altogether in Austria proper, which has a population of 28,000,000, a total number of 12,070 doctors of medicine entitled to practise. Of these, 7510 held public appointments, of which 1800 were State appointments, 3910 were municipal appointments, and the remainder were in the service of other public corporations. The State appointments are whole-time appointments, no private practice being permitted; the rate of their remuneration is only moderate, and the other appointments are worth less in proportion. There is, therefore, little inducement for a young medical man to seek them. Various medical associations have repeatedly urged the public authorities to increase both the number of appointed practitioners and their remuneration in accordance with modern requirements as the only means of obtaining a sufficient influx of medical men into country practice.

Premiums for the Breast Nursing of Infants.

The establishment of the so-called Stillkassen (funds from which weekly payments are made to mothers nursing their infants at the breast) has had a very beneficial influence on the nutrition, and consequently on the welfare, of infants. In Vienna the enterprise is quite a private affair, but still it has been able to show that 210 women, who have been assisted in this manner, have not had a single death to lament amongst their infants. There is, however, one factor which must be improved, and that is the duration of breast-feeding amongst these assisted mothers. It is intended to raise the premium for each consecutive month, so as to induce longer nursing. At present the premium amounts to 21 kronen (about 1 guinea) per month. The number of primiparæ was 164, the rest had from two to five children each, and it is interesting to note that only 27 of the remaining multiparæ had suckled either their first or their subsequent infants, the others being induced to do so by the premium paid to them.

Feb. 14th.

NEW YORK.

(From our own Correspondent.)

The Federal Control of Serums and Vaccines.

Mention has been made in this correspondence of the Government control of serums manufactured for sale in the United States. When this Federal law was adopted there was a large traffic in serums prepared by speculating firms, and the quality of the articles which they placed on the market was very variable. At the first inspection it was found that irresponsible persons were making and marketing biological products without sufficient care or knowledge to ensure safety and reliability. The law provides for a complete system of Governmental supervision over the establishments producing vaccines, viruses, serums, toxins, antitoxins, and analogous products. This surveillance consists of inspections, licences, and methods of control or check-testing in the Hygienic Laboratory of the Public Health Service at Washington. The law requires that each package of virus, serum, toxin, antitoxin, or other product be plainly marked with the proper name of the article contained therein; the name, address, and licence number of the manufacturer, and the date beyond which the contents cannot be expected beyond reasonable doubt to yield their specific results. Since the operation of the law a marked improvement has taken place in vaccine virus; standards for measuring the strength of diphtheria and tetanus antitoxins have been established; both the diphtheria and tetanus antitoxins found on the market have a decidedly increased potency; weak serums are forbidden and those discovered have been withdrawn from the market; false or misleading labels have been changed, and in general the licensed manufacturers have reached a high state of efficiency. The result to the practising physician has been most satisfactory, for he is no longer liable to get negative results in the use of the serums on the market in any part of the United States.

Vaccine Virus in the Pharmacopœia.

Dr. M. J. Rosenau, Director of the Hygienic Laboratory of the United States Public Health Service, advises that vaccine virus be admitted into the Pharmacopœia. He says that one of the first advantages, if this were done, would be to establish for it an official and legal name. This would tend to avoid much confusion now existing on account of the bacterial vaccines and other substances called "vaccine" used in the prevention and cure of disease. Formerly the term was limited to the vaccine in the prevention of small-pox, but in later times "vaccination" is a word used in a generic sense and includes the introduction of many different substances, in many different ways and for many different purposes. Authoritative directions in the Pharmacopœia would have an educational value and would help to prevent small-pox and to save life.

Feb. 2nd.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

PLAGUE returns for the week ending Jan. 1st show 7725 deaths, compared with 6559 in the week preceding. Bombay Presidency reported 545; Madras, 44; Bengal, 911; the United Provinces, 3582; the Punjab, 1308; Burma, 81; Central India, 41; the Central Provinces, 909; Rajputana, 215. Plague has appeared in a virulent form in the Saran district of Bengal, where 526 deaths occurred in a week.

Health of Bombay City during 1909.

The exceptionally favourable conditions which have been noted week by week represent in the aggregate a saving of 3393 lives during the year, as compared with the mortality of 1908. Small-pox has accounted for 553 fewer deaths, and plague for 161 fewer. The toll of cholera, unfortunately, was 632 higher than in the previous year, for which we have to thank the constant importations from Nasik and other pilgrimage centres. But the total number of deaths has fallen from 38,271 to 34,878 and the death-rate from 39·13 to 35·66. If we deduct plague from the latter figure the death-rate becomes only 29·0, a figure which compares favourably with that of many a European city. It is the lowest rate which has appeared on the Bombay registers for the last 12 years. During last week the total deaths numbered 603, approximately the same as during the previous four weeks. Small-pox is disappearing as the result of the prompt measures which the Health Department took to stamp out the epidemic in Mahim, and plague deaths are again only 5. The corrected death-rate, therefore, is only 31·58, and there is every sign that the present highly favourable conditions will continue.

Treatment of Leprosy in Burma.

As a result of the recent visit of Colonel C. P. Lukis, Director-General, I.M.S., to Rangoon, permission has been accorded by the Government of India to Major E. R. Rost, I.M.S., civil surgeon, General Hospital, to proceed with the special treatment of leprosy cases at Rangoon Leper Asylum, Kemmendine, which had been stopped.

Vaccination in the Punjab.

In the Punjab vaccination is carried out by Government officials without any friction between the vaccination staff and the villagers. In an official report recently issued it is stated that a small provincial decrease in the total number of vaccinations is traced to the havoc caused by the epidemic of malaria and its consequent ill effect upon the infantile population. The fact that there was a decrease of 10·43 per cent. in the total number of children available for vaccination with an increase of 4·76 per cent. for the year in the ratio of successful primary operations to the total number of children is given as an indication of the vaccination staff having worked satisfactorily. The experimental introduction of house-to-house vaccination in a few places is suggested as an improvement, since its success in popularising vaccination is undoubted, and there seems no reason why it should not prove successful. Vaccinators in the province are now provided with vaccine direct from the Punjab Vaccine Institute, and time is not lost in vaccinating calves in the districts. The time saved by this substitution might, it is thought, be spent by the vaccinators in going to the houses where the birth registers show that there are children to be vaccinated. This is also suggested as a good method for the distribution of quinine. Though the suggestion may meet with opposition from some of the native vaccination staff, it is not improbable that the people will welcome a measure that will save them from the exertion and annoyance of taking their children to a distance, and the scheme seems to have much to commend it. The increase in the total number of operations in Eastern Bengal and Assam over the previous year is 91,014, a figure which is by no means discouraging when the various sources of opposition are taken into consideration, while the slight decrease in the Punjab, adequately explained by the cause indicated, gives evidence of no unsatisfactory results.

Lunatic Asylums in Bengal.

A central asylum for natives is to be built at Ranchi at a cost of nearly 18½ lakhs of rupees. Detailed plans are being prepared, the approval of the Government of India having been received last cold weather. It is also intended to establish a central asylum for Europeans at Ranchi in place of that at Bhowanipur, Calcutta, a revised scheme being under the consideration of the local government. Both these asylums will be on the villa-colony system, a great advance on all similar institutions in the East. As the environment of some of the existing asylums is officially reported as unhealthy, the changes that are to be made in location should give the best results in respect of curative treatment. There are, on an average, about 850 lunatics under confinement in Bengal.

The Pasteur Institute at Kasauli.

I learn with gratification that His Highness the Maharaja of Benares has offered Rs.10,000 towards the construction of quarters for Indians—especially of the indigent classes—at the Pasteur Institute at Kasauli. This generous contribution coming after that given by the Maharaja of Patiala makes up half of the total sum asked for by the management of the Institute, so that there can be no doubt that the remainder will be readily forthcoming. The way in which the beneficent work of the Pasteur Institute has established its hold upon the minds of all classes in India, in spite of all the scandalous attempts of the antivivisectionists and antivaccinationists to rouse up Indian prejudices of religion and caste against it, is one of those decisive victories for truth and light of which one does not see too many in this imperfect world.

The Health of the Viceroy of India.

Certain reports have obtained currency as to His Excellency the Viceroy's health and the possibility of his resignation. These, the *Allahabad Pioneer* states, are quite unfounded, for His Excellency, since his sharp though short attack of fever at Barrackpore, has steadily improved in health. His appearance at the recent State ball gave a contradiction to the rumours, as he plainly enjoyed the dance and was present until a late hour. Lord Minto has had a heavy burden of work lately, and still more lies before him, but he seems fully capable of meeting the demands upon his strength.

Jan. 8th.

Obituary.

HAROLD JAMES CROMPTON, M.D., B.CH. VICT., D.P.H.

To the very great regret of his friends there died on Jan. 28th, after a week's illness, Dr. Harold James Crompton, one of the medical officers of the County Asylum, Prestwich, Manchester, at the age of 37 years. After leaving school he spent three years in Paris studying chemistry, whence he proceeded to Manchester to begin his medical education. In 1894 he was awarded the medal in materia medica at Owens College, and the Society of Apothecaries' gold medal in materia medica and pharmaceutical chemistry. He took his M.B., Ch.B. with honours in 1898. In 1903 he obtained his M.D., with commendation, for his research into the pharmacology of selenium, tellurium, and arsenic. Afterwards he obtained the Diploma in Public Health. After qualifying he became house physician at the Manchester Royal Infirmary, where he later served as resident medical officer. He acted as house surgeon at Ancoats Hospital and as resident medical officer at the Barnes Convalescent Hospital, Cheadle. His last years were spent in work at the Prestwich Asylum. Highly efficient as a physician and a capable administrator, he was a man of wide culture, being especially well read in both English and French literature, and having an extraordinary acquaintance with classical and modern music, which he combined with an enthusiasm for golf. Witty himself and quick to see humour, he loved to observe men and manners. Always reserved, always true, always large-hearted and generous, he made as many friends as he wanted, who will not cease to deplore his untimely death.

RICHARD GEORGE WORGER, L.R.C.P. LOND., M.R.C.S. ENG., L.M.S.S.A.

Mr. R. G. Worger died at his residence, Leigh House, Radstock, Somerset, on Feb. 8th, in his thirty-eighth year. Mr. Worger, who took the qualifications of L.R.C.P. and M.R.C.S. in 1896, having taken the L.S.A. in the previous year, had a very extensive practice in Radstock and the neighbourhood. He held Poor-law appointments under the Clutton and Frome boards of guardians. He was certifying factory surgeon for the district, and surgeon to the Post Office and the Great Western Railway employees. Mr. Worger took a great interest in ambulance work and was captain of the R.A.M.C., T. F. 2nd S.W. Mounted Brigade Field Ambulance. He was an Associate of the Order of St. John of Jerusalem, the decoration which accompanies this Order being presented to him by the Prince of Wales in June, 1909. The deceased was very popular in Radstock and the district, and much sympathy is felt there for his relatives. The funeral took place on Feb. 11th with full military honours.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. W. Frank Haehnlen, professor of midwifery in the Medico-Chirurgical College of Philadelphia.—Dr. Georges Gasne, physician to the Paris hospitals.—Professor Wilhelm Krause of the Berlin Anatomical Institute, at the age of 76 years. He was formerly extraordinary professor in Göttingen. He published an important text-book on "Human Anatomy," in three volumes, and for some years edited the International *Monatschrift* for Anatomy and Physiology. It may be mentioned that the discovery of the "end bulbs" in the skin, which are known in Germany as "Krause's Endkörperchen," was the work of the deceased professor's father.—Dr. Uzzial Ogden, formerly professor of gynæcology in the University of Toronto.—Dr. Baizeau, retired inspecting medical officer of the French Military Medical Service.—Dr. Ch. Bachelez, physician to the Saint Omer Hospital.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on Feb. 10th, Mr. Butlin, the President, being in the chair. It was resolved to issue diplomas of Membership to 59 successful candidates. It was resolved to issue jointly with the Royal College of Physicians of London Diplomas in Public Health to 12 successful candidates. A report was received from the Committee on Anæsthetics, and in accordance with that report the Council concurred with the conclusions of the General Medical Council, with the exception that the Council desired to delete the last five words of conclusion 5 (see THE LANCET, Dec. 11th, 1909, p. 1755) which would debar dentists from administering nitrous oxide gas and other anæsthetics for operations by duly qualified medical practitioners. In response to a request from the Registrar-General it was suggested that at the approaching Census it would serve a useful purpose to have two headings of blindness: (*a*) blind or not able to count fingers in the daylight more than three feet distant; and (*b*) partially blind, cannot be educated or earn a living by means of the sight. If only one class is to be recognised the definition should be that of the first class. Mr. Bilton Pollard was re-elected a member of the Court of Examiners and was elected a member of the Board of Examiners in Dental Surgery. A Member of the College whose name had been previously removed from the Medical Register was removed from the roll of Members. A report was received from the Board of Examiners in Dental Surgery relating to the regulations for the Licence, and the Council in accordance therewith decided that there was no need to make any alteration.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians on Jan. 27th and a meeting of the Council of the Royal College of Surgeons on Feb. 10th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the under-mentioned gentlemen, who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Examining Board in England:—

Frank Shirley Adams, Cambridge University and Guy's Hospital; Francis Cooke Alton, St. Thomas's Hospital; William Brodie Gurney Angus, B.A. Cantab., Cambridge University and London Hospital; Charles Henry Fairbank Atkinson, Charing Cross Hospital; Alfred David Eldred Bayliss, University College Hospital; Henry William Catto, Guy's Hospital; Ivo Goikio Cobb, St. Thomas's Hospital; Reginald Cock, Charing Cross Hospital; Robert Francis Preston Cory, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Francis John Craddock, St. Bartholomew's Hospital; Anandrai Keshavlal Dalal, L.M. & S. Bombay, Bombay University and Middlesex Hospital; John Phillip Henry Davies, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Allen Dewar, St. Thomas's and St. Mary's Hospitals; Frank Holt Diggle, M.B., Ch.B. Vict., Manchester University; Roger Bellis Edwards, Liverpool University; Edgar Lionel Elliott, Guy's Hospital; Gilbert James French, Manchester University; Felipe Guevara-Rojas, M.D. Caracas, Caracas University; George Gushue-Taylor, London Hospital; Clifford Hall, Manchester University; Philip Keith Hill, Leeds University and St. Bartholomew's Hospital; Geoffrey Hoffmann, B.A. Cantab., Cambridge University and St. Thomas's Hospital; James Stanley Jobson, Cambridge University and London Hospital; Norman Theodore Kingsley Jordan, Manchester University; Timothy Joseph Killard-Leavey, Guy's Hospital; Stuart Hardy Kingston, Bristol University; John Murgatroyd Land, Leeds University; James Arthur Richard Lee, Sheffield University; Tam Legge, Madras and London Hospital; Ernest MacEwan, London Hospital; †John Macoun, M.B. Toronto, Toronto University and St. Thomas's Hospital; Archibald Campbell Magarey, M.B., B.S. Adelaide, Adelaide University and Westminster Hospital; Robert Telford Martin, London Hospital; Maurice Charles Mason, St. Mary's Hospital; John Harry Meers, St. Mary's Hospital; Sydenham Frederick Moore, B.A. Oxon., Oxford University and St. Thomas's Hospital; Claude Woodham Morris, University College Hospital; John Francis O'Malley, L.R.C.P. & S. I., Dublin and Middlesex Hospital; Wilfrid Langrish Pink, St. Thomas's Hospital; Basil Alfred Playne, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Ernest Edward Andrew Thompson Rigg, University College Hospital; Arthur Leyland Robinson, Liverpool University and University College Hospital; *Arthur Cecil Hamel Rothera, M.A. Cantab., Cambridge University and St. Mary's Hospital; Bidhan Chandra Roy, Calcutta Medical College; Bernard Sangster Simmonds, Middlesex Hospital; Ernest Gerald Stanley, St. Bartholomew's Hospital; Edwin Lawrance Sturdee, St. Bartholomew's Hospital; Frank Stuart Tamplin, St. George's Hospital; Leonard Herbert Taylor, Charing Cross Hospital; Gottfried Oram Teichmann, Middlesex Hospital; Keshav Sadashiv Thakur, L.M. & S. Punjab, Lahore Medical College and University College Hospital; Arthur Henry Leopold Thomas, Cambridge University and St. Mary's Hospital; Wilfred Porcy Tindal-Atkinson, St. Thomas's and St. George's Hospitals; James Massimo Todesco, London Hospital; Vivian Thomas Pearce Webster, B.A. Cantab., Cambridge University and Guy's Hospital; Charles Weller, L.D.S. Eng., Guy's Hospital; Cyril Underwood Whitney, Westminster Hospital; John Pryce Williams, Manchester University and St. Mary's Hospital; John Wilson Williams, University College, Cardiff, and Guy's Hospital; and Neville Scott Williams, Cambridge University and St. Thomas's Hospital.

† M.R.C.S. Diploma granted under Regulations previous to Oct. 1st, 1884. * M.R.C.S. Diploma granted on Jan. 13th, 1910.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Diplomas in Public Health have been conferred in conjunction with the Royal College of Physicians of London upon the undermentioned 12 gentlemen:—

Devarayadoorg Venkata Giri, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Bombay and Edinburgh Universities; Walter Leigh Mackinnon Goldie, F.R.C.S., L.R.C.P., M.R.C.S., Edinburgh University, St. Mary's and St. George's Hospitals; Arthur Henry Headley Huckle, L.R.C.P., M.R.C.S., L.S.A., Guy's Hospital and University College; Kombur Ramaswamy Krishnaswamy Iyengar, M.B., Ch.B. Edin., Edinburgh University and University College; John Macpherson Johnston, M.B., Ch.B. Edin., L.R.C.P., M.R.C.S., Edinburgh University and King's College; Jagannath Vasudev Karve, M.B., Ch.B. Edin., Madras and Edinburgh Universities; James Alexander Milne, M.B., B.S. Lond., L.R.C.P., M.R.C.S., London Hospital; Herbert Wilberforce Perkins, F.R.C.S., L.R.C.P., Middlesex Hospital; Frederick Joseph Wilfrid Sass, L.R.C.P., M.R.C.S., St. Mary's Hospital and Royal Institute of Public Health; Sidney Browning Smith, Major I.M.S., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital and Royal Army Medical College; Edmund Fairfield Thomas, L.R.C.P., M.R.C.S., M.D. Brux., L.S.A., Bristol University, Middlesex Hospital, and University College, Cardiff; and Alexander Butchart MacArthur Thomson, M.B., Ch.B. Edin., Edinburgh University and London Hospital.

The Council conferred the Diploma of Fellow upon Mr. John Henry Farbstein, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital, who has now reached the requisite age of 25 years. Licences to practise dentistry were also conferred upon the following two gentlemen, who have now complied with the necessary by-laws—viz., John Herbert Drinkall, Middlesex and National Dental Hospitals; and Robert William Morrell, Guy's Hospital.

Foreign University Intelligence.—*Berlin:* Dr. Paul Schuster, *privat-docent* of Neurology, has been granted the title of Professor.—*Berne:* Professor Peter Müller, who is in his seventy-fourth year, intends to resign the Obstetrical Chair. His successor will probably be Dr. Walthard of Frankfort, who was formerly a member of the Berne Medical Faculty.—*Breslau:* Dr. Georg Boenninghaus, *privat-docent* of Otology and Rhinology, has been granted the title of Professor.—*Dorpat (Yurieff):* Dr. P. A. Poliakoff has been promoted to the chair of Histology.—*Giessen:* Dr. A. Thies has been recognised as *privat-docent* of Surgery.—*Göttingen:* Dr. Philipp Jung, Professor in Erlangen, has been appointed Professor of Midwifery and Gynæcology, in succession to Dr. Max Runge.—*Heidelberg:* Dr. Max Höfler has been given an honorary Ph.D. in recognition of his researches in folklore.—*Messina:* Dr. Giacinto Viola, Extraordinary Professor of Medical Pathology, has been promoted to an Ordinary Professorship.—*Munich:* Dr. Birkner, *privat-docent* of Anthropology, has been promoted to an Extraordinary Professorship.—*Palermo:* Dr. Rocco Iemma, Extraordinary Professor of Children's Diseases, has been promoted to an Ordinary Professorship.—*Prague (Bohemian University):* Dr. Franz Votruba has been recognised as *privat-docent* of Medicine.—*St. Petersburg Military Medical Academy:* Dr. A. A. Maximoff has been promoted to the chair of Histology and Embryology.—*Strasburg:* Dr. K. Adrian, *privat-docent* of Dermatology, Dr. R. Dreyfus, *privat-docent* of Laryngology, and Dr. A. Funke, *privat-docent* of Midwifery and Gynæcology, have been granted the title of Professor.—*Tomsk:* Dr. V. N. Savin of Moscow has been appointed Professor of Operative Medicine and of Topographic Anatomy.—*Tübingen:* Dr. Peckert of Heidelberg has been appointed Extraordinary Professor of Odontology.—*Turin:* Dr. Enrico Martini has been recognised as *privat-docent* of External Pathology.—*Vienna:* Dr. Dimmer of Gratz, who at first declined the first chair of Ophthalmology, has now been persuaded to accept it. Dr. O. Kren and Dr. Gustav Scherber have been recognised as *privat-docenten* of Dermatology.

University of London: Board of the Faculty of Medicine.—At the meeting of the Senate on Jan. 26th the following scheme was approved for the constitution of a Board of the Faculty of Medicine. (1) The Board shall consist of (*a*) the Dean of the Faculty, who shall be *ex-officio* Chairman of the Board; (*b*) the Secretary of the Faculty, being a member of the Faculty; (*c*) all members of the Faculty who are also members of the Senate; (*d*) the Chairman, being a member of the Faculty, of the Board of Studies in each of the following subjects: Preliminary Medical Studies, Intermediate Medical Studies, Advanced Medical Studies, Dentistry, Pharmacy (when constituted), Hygiene and Public Health, Physiology and Experimental Psychology, Human Anatomy and Morphology; (*e*) representatives, to the number indicated in each case, of the following Boards of Studies, to be appointed from the members of the Faculty by the Faculty on the nomination of the appropriate board: Preliminary Medical Studies, two; Intermediate Medical Studies, two; Advanced Medical Studies, four; (*f*) any other member or members of the Faculty (not exceeding six in all) whom the Faculty may appoint, in each case after nomination by at least two members of the Faculty. (2) The Board shall be appointed annually by the Faculty as soon as possible after receiving the reports of the Boards of Studies made at their first meeting in each year. (3) No quorum shall be required for a meeting of the Board. (4) The Board may appoint an honorary secretary. (5) The Board shall report to the Faculty.

St. Mark's Hospital, City-road, E.C.—Sir Richard B. Martin, treasurer, who presided at the annual general meeting of the governors of this hospital on Feb. 10th, in moving the adoption of the report called attention to the fact that, in spite of all efforts to raise funds and the severe economy which had been practised in all directions, the income for the past 12 months had been £900 less than the expenditure for the same period. In consequence it had been necessary to part with £1000 out of capital to meet the deficit. This was a very serious matter, considering the limited amount of invested property held by the trustees. The chairman drew attention to an important proposal submitted by the committee of management—viz., that in future the word "cancer" should be added to the name of the hospital, making it read "The St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum." This was unanimously agreed to.

The King and Ragged Children.—Attention was called in The Lancet recently (Dec. 11th, 1909, p. 1791) to the Brighton Police-aided Scheme for Clothing Destitute Children, under which members of the force noted insufficiently clad children on their beats, and, after careful inquiries had been made, saw that these urchins became candidates for the police wardrobe. There was a distribution of clothing to a party of such children on Feb. 12th and it was witnessed by the King, who was at that time spending a week in the town on a private visit. His Majesty told the chief constable, Mr. W. B. Gentle, the originator of the beneficent work, that he had heard of the good work the Brighton police were doing and embraced the opportunity of seeing it for himself. His Majesty saw some of the children in their ragged state and after they had been re-clothed, and so impressed was he that he gave a cheque for £10 towards the fund, another member of the Royal party giving £5. Last year no fewer than 850 children were clothed out of the funds under the scheme, while 60 girls were placed out in service.

Henrietta House Nursing Home.—We have inspected this nursing home in which an attempt has been made to obtain the benefits associated with a private clinic without the disadvantages which might possibly be associated with it. Henrietta House, in Henrietta-street, Cavendish-square, is a building which was formerly an hotel, and therefore possesses a large number of rooms. It has been reconstructed and fitted so as to provide a modern private hospital for paying patients. The rooms are large, well lighted and ventilated, and the furniture is of a character rarely seen elsewhere than in a private house. Each bed is fitted with a Lawson Tait mattress, and both electric bell and light are within easy reach of the patient. 24 rooms are available for patients, and a bathroom is on each floor. All the floors are served by an electric passenger lift running in the well of the staircase, and large enough to carry a trolley with a patient lying at full length. At the top of the building is the operating theatre. It has a good north light and the fittings are of the most modern type. A large stock of instruments is provided for the use of surgeons. Adjoining the theatre is the anæsthetic room. There is also a high-pressure vacuum steriliser. A medical man lives on the premises. His services are available at any time in case of emergency, and his presence insures that directions of physicians or surgeons in charge of patients are fully carried out. He does not treat the patients, but is at hand to attend to acute necessities and to superintend generally the hospital. We were much pleased with what we saw, and we think that Henrietta House sets in some ways an example which might be followed by other nursing homes with benefit both to the patients and to those treating them.

Chichester Infirmary.—Following up the decision arrived at on the occasion of the annual meeting in November, when a subcommittee was appointed to consider what steps should be taken to improve the finances of the Chichester Infirmary, there being a deficit on the year of £1500, this subcommittee has just presented its report. While many of the suggestions have not met with the approval of the governors some good no doubt will be done if only by again calling attention to the need of increasing the income, and the Mayor of Chichester has promised to issue an appeal, which should meet with a ready response seeing that the infirmary covers such a wide area as is shown by its full title, The West Sussex, East Hants, and Chichester Infirmary. The suggestions which were made at the governors' meeting on Feb. 4th were that an out-patient's letter should be given for 5*s.* to induce more subscribers of this sum, that the minimum subscription for one in-patient's letter should be £3 3*s.* instead of £2 2*s.* as at present, and that there should be a registration fee of 6*d.* for out-patients. These proposals were either omitted or withdrawn; and a resolution requesting the governors to draw upon the reserve fund of £15,000 to meet the deficit and thus secure the Royal Warrant promised by His Majesty the King when the debt is removed and the finances are placed on a sound basis was negatived, strong objection being raised to the institution drawing upon its capital. The committee was enlarged to 16 governors, and it was decided to appoint a paid secretary to give the whole time to the infirmary.

GLANDERS IN LONDON.—During the six weeks ended Jan. 29th, 1910, 90 cases of glanders in London were reported by the London County Council veterinary inspectors, and in each case the animal was slaughtered.

A SUPER-CENTENARIAN.—Miss Hensley has died at Bath in her 104th year. She was a sister of the late Dr. Hensley of Bath and of the late Rev. C. Hensley, vicar of Cabourne, who lived until he was 97 years of age.

CHESTER TOWN COUNCIL AND OPHTHALMIA NEONATORUM.—At the monthly meeting of the Chester town council, on the motion of Dr. Alfred Mann, chairman of the public health committee, it was resolved that the provisions of the Infectious Disease (Notification) Act, 1889, should apply to cases of ophthalmia neonatorum.

ADULTERATED MILK AT DEVONPORT.—At the Devonport police court on Feb. 9th two milksellers were fined £1 and 10*s.* respectively for selling adulterated milk. The assistant town clerk, who prosecuted, remarked that milk adulteration was on the increase in Devonport. During the present year 18 samples had been taken and 14 of these were adulterated.

PRESENTATION.—At the annual meeting of the members of the Portishead (Somerset) Men's Adult School, the rector (the Rev. H. W. Jukes), on behalf of the class, presented Mr. William Monckton, L.R.C.P. Edin., M.R.C.S. Eng., with an inkstand, suitably inscribed, as a mark of respect and appreciation for the services he has rendered in the parish for the past 24 years.

THE ROYAL SANITARY INSTITUTE.—The provincial sessional meeting on Feb. 25th will be held in the council chamber, county offices, St. Mary's-gate, Derby, at 7.30 P.M., when discussions will take place on Treatment of School Children, to be opened by Dr. Sidney Barwise, medical officer of health of Derbyshire; and on Derbyshire Elementary Schools, Principles of Planning, to be opened by Mr. G. H. Widdows, A.R.I.B.A. The chair will be taken at 7.30 P.M. by Mr. H. D. Searles-Wood, F.R.I.B.A., chairman of the council of the institute. On the following day visits will be paid to the Derbyshire County and Derby Borough schools.

UNIVERSITY COLLEGE (UNIVERSITY OF LONDON).—In memory of the late Dr. Ludwig Mond's scientific eminence and his generous benefaction of £3000 towards the building of the Institute of Physiology at University College, the committee of University College, London, have resolved to name the bio-chemistry research department of the institute, "The Ludwig Mond Bio-chemistry Research Laboratory." The University College committee will shortly proceed to elect a Crewdson-Benington research student. The studentship, of the value of £50, tenable for one year in the biometric research laboratory of the College, is for the promotion of research in anthropometry and craniology in relation to evolution. Candidates should send their applications, together with any statement of qualifications that they desire to submit, not later than March 1st to the secretary of University College, Gower-street, London, W.C., who will furnish particulars of the studentship.

THE ROYAL MATERNITY CHARITY OF LONDON.—The report of this charity for the year ending Dec. 31st, 1909, shows that the number of cases treated was 2351, the number of infants born being 2385. There were five deaths among the mothers and 37 among the infants. The ages of the mothers (cases treated) were from 17 to 48 years. The medical report, which is signed by Dr. S. P. Sunderland, Dr. H. R. Andrews, and Dr. L. Williams, notes that the services of the surgeons of the charity have been called into requisition in no less than 191 cases. Two of the deaths of mothers were due to causes for which labour could not be held responsible, and the other three were due to grave complications of labour. The medical committee "feels satisfied that the high reputation of the charity for care, promptitude, and efficiency has been fully maintained." The object of the Royal Maternity Charity, which was founded 150 years ago, is to check infant mortality and to secure skilled nursing for destitute lying-in women in their own homes, but its work is much hampered by the need for greater financial support. The address of the secretary is 31, Finsbury-square, London, E.C.

THE HEALTH OF WESTON-SUPER-MARE (SOMERSET).—The medical officer of health of Weston-super-Mare in his annual report for 1909 states that, with an estimated population of 23,500, the death-rate was 11·74 (exclusive of visitors the rate was 10·6) per 1000.

THE BRISTOL MEDICAL CHARITIES.—During 1909 the employees of Messrs. W. D. and H. O. Wills collected £735, the workpeople of Messrs. J. S. Fry and Sons subscribed £588. and the employees of Messrs. E. and A. Robinson raised £282 for the Bristol medical charities.

HASTINGS WATER-SUPPLY.—The Hastings ratepayers have been very much exercised of late on the question of a Various Powers Bill promoted by the town council, which includes a number of clauses with a view of safeguarding the town's water-supply. Notwithstanding that on 25 days during last summer the consumption of water was in excess of that which could be obtained by day and night pumping, an appeal to the town has resulted in a majority of 4792 against the Bill in a poll of 5908. The chief element in the opposition to the Bill has, of course, been the expense, ratepayers being led to believe either that there is no cause for alarm or there is no immediate hurry. But the ratepayers of Hastings have had the warning. No town, and particularly a seaside resort like Hastings, largely dependent upon its visitors in the summer months, can afford to quibble about expense connected with its water-supply.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., New York and London.

- Girl and Woman. A Book for Mothers and Daughters. By Caroline Wormeley Latimer, M.D., M.A. With an Introduction by Howard A. Kelly, M.D. Price 6*s.* net.
- A Practical Treatise on Ophthalmology. By L. Webster Fox, M.D., LL.D. Price 25*s.* net.
- Modern Clinical Medicine. Diseases of Children. Edited by Abraham Jacobi, M.D., LL.D. An Authorised Translation from "Die Deutsche Klinik" under the General Editorial Supervision of Julius L. Salinger, M.D. Price 25*s.* net.

ARNOLD, EDWARD, London.

- Contributions to Abdominal Surgery. By the late Harold Leslie Barnard, M.S., F.R.C.S. Edited by James Sherren, F.R.C.S. Price 15*s.* net.

BAILLIERE, TINDALL, AND COX, London.

- Congenital Dislocation of the Hip. By J. Jackson Clarke, M.B. Lond., F.R.C.S. Price 3*s.* 6*d.* net.
- A Manual of Midwifery. For Students and Practitioners. By Henry Jellett, B.A., M.D. Dub. Univ., F.R.C.P.I., L.M. With the Assistance in Special Subjects of W. R. Dawson, M.D., F.R.C.P.I., H. C. Drury, M.D., F.R.C.P.I., T. G. Moorhead, M.D., F.R.C.P.I., and R. J. Rowlette, M.D. Second edition. Price 21*s.* net.
- Handbook of Diseases of the Ear. For the Use of Students and Practitioners. By Richard Lake, F.R.C.S. Eng. Third edition. Price 7*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

- The Medico-Chirurgical Series, No. 2. The Stomach, Intestines, and Pancreas. By W. C. Bosanquet, M.A., M.D. Oxon., F.R.C.P., and H. S. Clogg, M.S. Lond., F.R.C.S. Eng. Edited by James Cantlie, M.A., M.B., C.M. Aberd., F.R.C.S. Eng. Price 12*s.* 6*d.* net.
- The Bacteriologist's Aid to Memory (A Handy Reference Sheet for the Laboratory). By J. W. S. Seccombe, M.R.C.S., L.R.C.P., D.P.H., Captain, Royal Army Medical Corps. Price 3*s.* 6*d.* net; mounted on linen, 4*s.* 6*d.* net; mounted on linen with rollers, 5*s.* 6*d.* net.

BARBER, GEORGE, Furnival Press, London.

- William Shakespeare and Timothy Bright. By Matthias Levy. Price 1*s.*

BELL, GEORGE, AND SONS, London.

- Hoblyn's Dictionary of Terms used in Medicine and the Collateral Sciences. Fourteenth Edition. Revised throughout, with numerous Additions by John A. P. Price, B.A., M.D. Oxon. Price 10*s.* 6*d.*

BLACKIE AND SON, LIMITED, London, Glasgow, Dublin, and Bombay.

- Food Inspection. A Practical Handbook. By Hugh A. Macewen, M.B., Ch.B. Glasg., D.P.H. Lond., D.P.H. Cantab. Price not stated.

BURROUGHS, WELLCOME, AND CO., London, New York, Montreal, Sydney, Cape Town, and Shanghai.

- Wellcome's Medical Diary and Visiting List. 1910. Price not stated.

BUTTERWORTH AND CO., London. SHAW AND SONS, London.

- Housing and Town Planning in Great Britain. By W. Addington Willis, LL.B. Lond., of the Inner Temple, Barrister-at-law. Price not stated.

Marhold, Carl, Halle a.S.

Klinik für Psychische und Nervöse Krankheiten. Herausgegeben von Robert Sommer, Dr. med. et phil. IV. Band. 4 Heft. Preis M.12 pro Band.

Die Behandlungsmethoden des Chronischen Magengeschwürs. Von Prof. Dr. M. Matthes. (Sammlung zwangloser Abhandlungen aus dem Gebiete der Verdauungs- und Stoffwechsel-Krankheiten. Herausgegeben von Prof. Dr. A. Albu in Berlin. II. Band, Heft 4.) Price M.1.40.

Masson et Cie, Paris.

Manuel de Neurologie Oculaire. Par F. de Lapersonne et A. Cantonnet. Price Fr.6.

Nisbet, James, and Co., Limited, London.

Nisbet's Medical Directory, 1910. In Two Parts. Part I., Directory of Medical Practitioners. Part II., The Local Directory. Price 7*s.* 6*d.*

A Plea for the Home Treatment and Prevention of Scarlet Fever. By Robert Milne, M.D., Ch.M., Medical Officer of Dr. Barnardo's Hospitals and Homes for Thirty Years. Price 2*s.*

Philopolis Press, The, San Francisco, Cal., U.S.A.

Spondylotherapy. Spinal Concussion and the Application of Other Methods to the Spine in the Treatment of Disease. By Albert Abrams, A.M., M.D. (University of Heidelberg), F.R.M.S. Price $3.50.

Royal College of Physicians of London, London.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London and of the Holders of the Diploma in Public Health granted jointly by the Royal Colleges of Physicians and Surgeons. Price not stated.

Catalogue of Accessions to the Library of the Royal College of Physicians of London during the Year ending July, 1909, with List of Periodicals. Price not stated.

Sanitary Publishing Co., Limited, London.

Handbook of Scotch Sanitary Law. Third Edition. By Thomas W. Swanson, Assoc. R. San. Inst.; Mem. San. Assoc.; Cert. Victoria University. Price 2*s.* 6*d.*

Saunders (W. B.) Company, London.

A Practical Study of Malaria. By William H. Deaderick, M.D Price 20*s.* net.

A Text-book of Obstetrics. By Barton Cooke Hirst, M.D. Sixth Edition, revised and enlarged. Price 21*s.* net.

A Text-book on the Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M.D., LL.D. With 1058 new line drawings, illustrating the text, by John V. Alteneder. Fourth edition, revised and enlarged. Price 27*s.* 6*d.* net.

The Principles of Hygiene. A Practical Manual for Students, Physicians, and Health-Officers. By D. H. Bergey, A.M., M.D. Third edition, thoroughly revised and enlarged. Price 13*s.* net.

A Manual of Normal Histology and Organography. By Charles Hill, Ph.D., M.D. Second edition, thoroughly revised. Price 10*s.* net.

Clinical Studies for Nurses. By Charlotte A. Aikens. Price 10*s.* net.

Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties. A Manual of its Practical Application. By Willy Meyer, M.D., and Prof. Dr. Victor Schmieden. Second revised edition, enlarged. Price 13*s.* net.

Springer, Julius, Berlin.

Praktische Anleitung zur Syphilisdiagnose auf biologischem Wege. (Spirochæten-Nachweis, Wassermannsche Reaktion.) Von Dr. P. Mulzer. Price, paper, M.3.60; bound, M.4.40.

Thurnam, Charles, and Sons, Carlisle.

Alcohol: its Effects upon the Organs of the Body. Being a Lecture delivered before the St. John's Branch of the Church of England's Men's Society, at St. John's Hall, South Street, Carlisle, on Tuesday, December 7th, 1909, by H. A. Lediard, M.D. Ed., F.R.C.S. Eng. Price not stated.

University Correspondence College, Cambridge and London.

Matriculation Directory. No. 54, January, 1910. With Articles on Text-books. Price 1*s.* net.

Unwin, T. Fisher, London and Leipsic.

The Conquest of Consumption. An Economic Study. By Arthur Latham, M.D., and Charles H. Garland. Price 4*s.* 6*d.* net.

Vogel, F. C. W., Leipzig.

Archiv für Experimentelle Pathologie und Pharmakologie. Redigirt von Dr. B. Naunyn und Dr. O. Schmiedeberg. Zweiundsechzigsten Bandes, Zweites und Drittes Heft. Ausgegeben 9 Februar, 1910. Price not stated.

Witherby and Co., London.

The Royal Navy List and Naval Recorder. Number 129. January, 1910. Price 10*s.*

Wright, John, and Sons, Limited, Bristol. (**Simpkin, Marshall, Hamilton, Kent, and Co., Limited**, London.)

"First Aid" to the Injured and Sick. An Advanced Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., A.K.C. Lond., and A. C. Tunstall, M.D., F.R.C.S. Ed. Sixth edition. Revised and enlarged. 45th Thousand. Price, paper, 1*s.* net.; leather, 2*s.* 6*d.* net.

A Synopsis of Surgery. By Ernest W. Hey Groves, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng. Second edition, revised and illustrated. Price 9*s.* 6*d.* net.

Year Book Publishers, Chicago. (**G. Gillies and Co.**, Glasgow.)

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Vol. X. Nervous and Mental Diseases. Edited by Hugh T. Patrick, M.D., and Charles L. Mix, A.M., M.D. Series 1909. Price 5*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Adams, W. F., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rayleigh District of the county of Essex.

Awdry, Walter Robert, M.B. Durh., M.R.C.S., has been appointed Medical Officer to the Berkeley (Gloucestershire) Hospital.

Braund, H., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital.

Bond, C. Hubert, D.Sc., M.D. Edin., has been appointed Lecturer on Mental Diseases at the Middlesex Hospital Medical School.

Budd, Arthur, M.B., B.S. Durh., has been appointed Honorary Surgeon to the Launceston (Cornwall) Infirmary.

Devane, J. F., M.B., B.Ch. R.U.I., F.R.C.S. Irel., D.P.H., has been appointed Visiting Physician to the Limerick County Infirmary.

Gibson, Charles Gordon, M.B., C.M. Edin., has been appointed Honorary Surgeon to the Launceston (Cornwall) Infirmary.

Heath, H. Llewellyn, D.P.H. Cantab., has been appointed Bacteriologist to the East Suffolk and Ipswich Hospital.

Morrow, H. L., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballylesson District of the county of Down.

Musgrave, Cecil Benjamin Thomas, M.D. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Launceston (Cornwall) Infirmary.

Pinniger, Wilfrid James Hussey, M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to Müller's Orphans Houses, Ashley Down, Bristol.

Serpell, Hugh Hamilton, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Launceston (Cornwall) Infirmary.

Wilcox, Henry, M.B. Aberd., has been appointed Clinical Assistant to the Samaritan Free Hospital.

Wills, R. G., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Physician to the Bootle Borough Hospital.

Woodwark, A. S., M.D. Lond., M.R.C.P. Lond., has been appointed Physician to the Royal Waterloo Hospital for Children and Women.

Woodyatt, H. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Barnsley, Beckett Hospital and Dispensary.—Honorary Ophthalmic Surgeon.

Bath Royal United Hospital.—House Physician. Salary £80 per annum, with board, lodging, and washing.

Birmingham Queen's Hospital.—Pathologist. Salary £100 per annum.

Birmingham University, Pathological Department.—Assistant Lecturer in Pathology and Bacteriology. Salary £50 per annum.

Bradford Royal Infirmary.—House Physician and Two House Surgeons, all unmarried. Salary in each case £100 per annum, with board, residence, and washing.

Brighton, Royal Alexandra Hospital for Sick Children.—House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

Brighton, Sussex County Hospital.—Second House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

Buenos Ayres, British Hospital.—Senior Resident Medical Officer. Also Assistant Resident Medical Officer, both unmarried. Salaries £250 and £200 per annum respectively, with board, lodging, &c.

Cambridge, Addenbrooke's Hospital.—House Physician. Salary £60 per annum, with board, residence, and laundry.

Cancer Hospital, Fulham-road, S.W.—Medical Officer in Charge of the Electrical Department. Salary £26 5*s.* per annum.

Cheltenham General Hospital.—House Surgeon, unmarried. Salary £70 per annum, with board, lodging, and washing.

Dorchester, Dorset County Hospital.—House Surgeon, unmarried. Salary £100 per annum.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Assistant Surgeon and Ophthalmic Surgeon.

Evelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.—House Physician. Salary at rate of £60 per annum, with board, residence, and washing.

Huddersfield, County Borough of.—Assistant Medical Officer of Health (female). Salary £150 per annum.

Kettering and District General Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

King's College Hospital, London, W.C.—Assistant Aural Surgeon.

King's Lynn, West Norfolk and Lynn Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Two Resident Medical Officers. Salary, senior £100, and junior £65 per annum, with board, washing, and apartments.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician and Two House Surgeons for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL DISPENSARIES.—Head Surgeon, unmarried. Salary £170 per annum, with board and apartments.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £60 per annum respectively, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried. Salary for first six months £40, for second six months £50.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Clinical Assistants.

NEW HOSPITAL FOR WOMEN, 144, Euston-road.—Surgical Assistant (female).

NORTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, &c.

PERTH COUNTY EDUCATION COMMITTEE.—School Medical Officer. Salary £350 per annum, and expenses.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Assistant Surgeon.

ROYAL NAVAL MEDICAL SERVICE.—Examination for Fifteen Commissions.

ST. MARY'S HOSPITAL, London, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistants.

SHEFFIELD UNIVERSITY.—Junior Demonstrator in Pathology. Salary £150 per annum.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £75 per annum.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

WEST HAM INFIRMARY, Whipp's Cross-road, Leytonstone, N.E.—Third Assistant Medical Officer. Salary £120 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Widnes, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

CHAMBERS.—On Feb. 9th, at The Priory, Roehampton, the wife of James Chambers, M.D., of a daughter.

FAIRBANK.—On Feb. 14th, at Montagu Mansions, the wife of H. A. T. Fairbank, M.S., F.R.C.S., of a daughter.

ROGERS.—On Feb. 8th, at Boundary-road, St. John's Wood, the wife of David de Sola Rogers, L.D.S. R.C.S. Eng., of Buenos Ayres, of a son.

SMYTH.—On Feb. 10th, at 2, Lyford-road, Wandsworth Common, to Dr. and Mrs. Smyth, twin sons.

STRATFORD.—On Feb. 8th, at Earl's Court-road, S.W., the wife of Howard M. B. Stratford, M.R.C.S., L.R.C.P. Lond., of a son.

WHITTING.—On Feb. 12th, at Hollydene, Maidenhead, the wife of Robert E. Whitting, M.D., of a son.

MARRIAGES.

STALLARD—BELL.—On Feb. 12th, at Bombay Cathedral, Philip Lechmere Stallard, M.R.C.S., L.R.C.P., D.P.H., D.T.M., and M.A. Cantab., to Dorothea, third daughter of the Rev. J. W. B. Bell, Vicar of Pyrton, Oxfordshire.

DEATHS.

CLARKE.—On Feb. 14th, 1910, at Kotona, Huddersfield, Thomas Kilner Clarke, M.A., F.R.C.S., J.P., aged 66.

COBB.—On Feb. 14th, at Belmont, Stevenage, Ernest H. Cobb, M.R.C.S., L.R.C.P., aged 49.

HILLYER.—On Feb. 5th, William Herbert Hillyer, L.R.C.P. & S. Edin.

HUGHES.—On Feb. 12th, at Holly-grove, Newick, Hugh Spencer Hughes, M.R.C.S., aged 82.

MARRIOTT.—On Feb. 14th, Sir Charles Hayes Marriott, M.D., D.L., of Kibworth-Harcourt, Leicestershire, in his 76th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CLASSIFICATION OF ODOURS.

Dr. Paul W. Goldsbury writes to us from Boston, U.S.A., concerning our recent leading article upon the classification of odours (THE LANCET, Vol. II., 1909, p. 1756) and informs us that he has been making a study of this subject for some time, as he considers that "each of the special senses should have its own particular field of hygiene," and believes that the body as a whole can suffer in various ways from the neglect of attention to any individual sense, a proposition which with our present knowledge of the interdependence of other bodily functions and of internal secretions we do not find very difficult of acceptance. He informs us that he has in his office a series of some 70 odours for reference, the arrangement of which is based upon Piesse's book on "Olfactics and the Senses." He considers that we have been inclined to let the sense of smell deteriorate by the more active exercise of the functions of the eye and ear, and in a pamphlet written by himself on "Principles of Therapeutics by Sense Culture" he makes the following suggestions with regard to the development of the sense of smell:—

> "The strong smelling bottle when used is like a solar plexus blow; instead of this the writer has a little case of four bottles containing mild selected odours. Occasional sniffs from these in turn result in a light form of gymnastics for the olfactory tract. To exercise this tract is to stimulate its circulation and this helps to relieve congestion in over-stimulated adjacent tracts, as of the eye or ear, whether in the brain or outside of it. A student preparing for examination obtained some refreshment while studying by such gymnastics. A case of rhinitis found relief to an appreciable extent by this kind of counter-stimulation. A case of neuralgia was directed in daily walks during the spring days not only to look for fresh colours, but fresh odours, whether of new wood or those of buds and blossoms, and this was found with other measures to contribute to a marked general and local improvement. How much the fresh odours of out-of-door life for tubercular cases by stimulating respiratory and cerebral activities have to do with general improvement has not been very specifically studied. Pharmaceutical preparations have certain virtue in their appeal to smell, and more consideration should be given such a property. Some scientists even go so far as to say that in the evolution of civilisation this sense may be dispensed with, but the writer would argue to redeem it from its present state of neglect that it may be developed and exercised to a point of discrimination where it will supersede the use of other senses in many laboratory tests."

If Dr. Goldsbury is correct in his views it would seem that the pretty competition of Japanese tea-parties, which consists in identifying a series of odours burnt as incense, has a hygienic justification At the same time there are many people with an extremely deficient sense of smell who go through life without any marked consequent disability, although an anosmic candidate might find his infirmity an insuperable obstacle in a practical examination in chemistry.

PUBLIC HEALTH IN BRITISH GUIANA.

A REPORT on the Blue-book of British Guiana for 1908–09 has been prepared by Mr. J. Hampden King, Assistant Government Secretary, and is now issued as a Parliamentary paper. It states that the health of the colony during the year was better than in 1907–08, when the death-rate was the highest for ten years. There was no epidemic of any dangerous, infectious, or contagious disease, though the existence of yellow fever and plague in neighbouring places gave rise to considerable anxiety. Malarial fever continues to claim a large number of victims, and the medical department has not relaxed its efforts to make the inhabitants of the colony realise that mosquitoes are the carriers of this disease and that all measures for their destruction must be supported. The municipality of Georgetown has given a lead in the direction of vat-screening regulations and the clearing away of bush and rubbish generally, and the visit to the colony of Sir Rubert Boyce of the Liverpool School of Tropical Medicine has given a much-needed and welcome impetus to anti-malarial measures generally. Quinine is now sold at the district post offices all over the Colony at cost price, and its use is steadily increasing. The sales rose this year to 2076 ounces. Steps have been taken to procure this drug put up in chocolate and comfits with a view to increasing its consumption among the children. The Medical Department continues to give close and constant attention to the question of ankylostomiasis, and the intelligent interest that has been aroused in this connexion among the employers of labour on the sugar estates and among the labourers themselves is already bearing fruit; the loss of labour from the debilitating effects of the disease, though still very heavy, is appreciably less than it was a few years ago. There were a few sporadic cases of enteric and blackwater fevers, but, as usual, the principal causes of death were malarial fevers, diarrhœal diseases, and phthisis and other forms of tuberculosis. This latter was the cause of 7·4 per cent. of the total mortality of the colony, and of 8·4 per cent. in Georgetown. The Society for the Prevention and Treatment of Tuberculosis continues its labours, and is gradually getting into closer touch with the people. In December Professor Deycke of Hamburg arrived in the colony for the purpose of carrying out at the Leper Asylum his treatment of leprosy by nastin. It is too soon for any definite opinion to be expressed with regard to it, but the Surgeon-General reports that the outlook is distinctly promising, and the treatment is being steadily followed at the asylum on the lines laid down by Professor Deycke. The inmates of the Leper Asylum at the opening of the year numbered 403—285 males and 118 females. The death-rate on total number of inmates was approximately 10·3 per cent. There are five hospitals in the colony, besides several dispensary hospitals and dispensaries in the outlying districts. The hospitals are well-appointed institutions with up-to-date appliances and arrangements for the care of the sick. At the Georgetown Hospital there is a well-organised bacteriological department. There has been no census taken in the colony since 1891, but it has been decided to take one in 1911. Meanwhile the population is estimated at 304,549. The birth-rate for the year was 27·3 per 1000 and the death-rate 30·8 per 1000 of the estimated population, as against 28·3 and 36·9 in the previous year.

DEFECTIVE VISION: A CAUSE OF DISASTER AT SEA.

The letter which we publish below has been forwarded to us by Mr. R. A. Caldwell, and is of peculiar interest at the present time. It will be observed that it was written to the *Nautical Magazine* more than 30 years ago. The apprehensions cited, the justification of which has been amply confirmed in the interval, have received attention from the Board of Trade, but they are by no means set at rest. Possibly if Mr. Caldwell's suggestion that the officer "should produce a 'Certificate of Competence,' *to be obtained from a regular oculist* (ophthalmic surgeon), before entrusting him with the responsible charge of the night-watch of a modern steamer" had been adopted, less would be heard to-day about the inefficiency of the colour-vision tests. We have had occasion recently to call attention to the subject of colour blindness and the Board of Trade in connexion with the now notorious "Trattles' case." The onus of responsibility in this matter has been accepted by the Board of Trade. Their methods, be the cause what it may, are inefficient. It remains for them to take the steps necessary for solving the problem and removing from the minds of the ever-increasingly vast multitude of the travelling public those apprehensions to which Mr. Caldwell so long ago directed attention in our columns and elsewhere.

Defective Vision, a Cause of Disaster at Sea.

To the Editor of the "Nautical Magazine."

Sir,—I venture to ask a space in your paper to draw the attention of those interested in nautical matters to the above subject.

My argument is briefly contained in the two following propositions:—1st. I hold that the quality of eye-sight that was good enough to steer clear of the old sailing packet, is by no means adequate to recognise *surely* and *promptly* the lights of the modern steamer, where the time for reflection is often limited to seconds. 2nd. That more collisions occur through mistaking coloured side-lights than almost all other causes combined. The truth of the first assertion is almost self-evident, and will be conceded when one considers the increasing rate of speed, as compared with the more leisurely progress of the days when steam was unknown.

The history of accidents from collisions, and the conflicting evidence with reference to the bearings of coloured lights, as exemplified in our law courts, will, I think, sustain the latter statement. I am careful not to import into your columns anything that is not practical, free from sensationalism, and untinctured with medical phraseology, but the fact that colour-blindness occasionally exists, and is a grave cause of disaster; associated as it may be with blurred vision and short sight, cannot be too widely known. This subject has been recognised in the Cunard Service, and the surgeons of these steamships are now, at my suggestion, supplied with test-types, plain and coloured, for the detection of such cases of incapacity amongst the "look-out men." This examination has already proved its utility, and I think it would repay shipowners, apart from the consideration of loss of life, to be careful that officers placed in charge of the bridge are free from all such optical defects. It will be granted that the officer should, and the truth is he generally does, recognise lights ahead before they are reported; hence I think it would be a wise precaution to insist that he should produce a "Certificate of Competence," to be obtained from a regular oculist, before entrusting him with the responsible charge of the night-watch of a modern steamer. The good effects of this test would not limit itself here, it would be manifest in the alert efficiency of the crew, as no officer alive to the importance of this fact would detail for "look-out" duty any man of whose powers of vision he was doubtful. Many lives and much valuable property have been lost in times past through unseaworthy ships, and it is possible nowadays that avoidable accidents occur through inattention to "the eyes of the ship." Such disastrous possibilities would, I feel sure, be greatly limited by the practical carrying out of the above suggestions. In connexion with this subject, and very closely allied to it, is the quality of the red and green lights now in use. It is notorious that these are very unequal in different vessels; some being readily distinguishable, while others are very indistinct, or so faint as to colours that it is almost impossible to tell, in certain atmospheric conditions, which light is presenting, before the object is so close that contact is almost unavoidable. This should not be, and the subject might well engage the attention of the authorities, to see that no vessel leaves any port in the kingdom without carrying standard lamps stamped by the Board of Trade, and supplied with the most powerful illuminating oil and wick, so that these diagnostic lights might be uniform and pronounced. The size of the lights might also be usefully enlarged, depth of colouring being, however, of more importance than extent of surface. It is a problem for the ingenious, whether in addition to the discriminating colours of starboard and port, some arrangement of one or other of these lights as to size, shape, height from the deck, or numbers, might not be adopted, as an added precaution. Nowadays, when the carrying trade is being absorbed by the swiftly moving steamers, and when collision between two of these monsters means such a frightful catastrophe, anything that tends to this narrow issue is worthy of careful consideration.

I am, Sir, your obedient servant,

R. A. Caldwell,

Liverpool, Dec. 9th, 1876. Surgeon, &c., R.M.S. *Russia.*

THE INTER-HOSPITAL RUGBY CUP TIES.

We have received the following account of the first round of the Inter-Hospital Rugby Cup Ties from a special correspondent:—

London v. *King's.*

For this match for the Inter-Hospital Rugby Cup London were the favourites, King's being a scratch side with no fixtures. But the game was something more than a trial gallop. The King's men were well endowed with pluck and pace. There was no surrender. The tackling was relentless. The London pack was heavier, but without Morton, who was resting in view of the International fixture, their work was not convincing. There was more life and dash in the King's scrum, admirably led by Laughlin and Hacker, who scored the loser's only try. And so there was very little in it forward. Outside the scrum it was a different tale. The combination of the colonial contingent baffled a willing side. Lindon, the King's captain, tried in vain to stem the tide. In defence and attack the Kent player was great. His drop goal rallied his side. He was not well supported. Addison at full back and Leigh at half did fairly well. The rest were hardly in the picture. Late in the game individualism was well rewarded. Palmer, Macpherson, and Heale were ever on the move. Batchelor crossed the line five times. London eventually won by 3 goals and 6 tries (33 points) to 1 dropped goal and 1 try (7 points).

London.—Woods (back); Batchelor, Palmer, Macpherson, and Ashe (three-quarter backs); Heale (captain) and Lindsay (half backs); Kennedy, Chapman, Dew, Mortimer, Powell, Hodges, Nicholson, and Whyte (forwards).

King's.—Addison (back); Symons, Lindon (captain), Pasley, and Smith (three-quarter backs); Leigh and Hacker (half backs); Hacker, Laughlin, Thomas, Gibson, Guild, Hodges, Ashe, and Simpson (forwards).

St. Mary's v. *St. Bartholomew's.*

Bart's have an excellent record this season and on points won this tie easily, but for three parts of the game their superiority was not pronounced. They possess men with the scoring faculty and Mary's do not, and so Bart's crossed over leading by 12 points (a dropped goal, a placed goal, and a try) to *nil.* But their heavy weights in the scrum were not at all skilful in gaining possession and the outsides allowed the Mary's forwards to bustle them off their game. The Mary's pack was very good indeed in the first half; their insistent footwork commanded respect. And early in the second half all this was pronounced. Then the half-trained scrum, which had so worried the Bart's backs, cracked, and one saw the poverty of the rest. Time and again Coombs and Richards set their outsides on the move, and the score mounted rapidly. Vickers alone faithfully served his side. His tackling was of great value; indeed, he was the best man on the field. But the end came, leaving Bart's winners by 31 points to *nil.*

Mary's.—Vickers (back); Batchelor, Green, Alexander, and Bullock (three-quarter backs); May and Compton (half backs); Galpin, Finlaison, Walker, O'Connell, Silcock, Watermeyer, Evans, and Argles (forwards).

Bart's.—Dive (back); Bridgeman, Richards, Beyers, and Neal (three-quarter backs); Coombs and Robbins (half backs); Van Schalkwigh, Binney, Linn, Brewitt, Adams, Von Braun, Evans, and Jones (forwards).

University College Hospital v. *Westminster Hospital.*

This tie was quite spoiled by the weather. Driving rain with a greasy ball made accurate play impossible and probably saved Westminster from a much more severe defeat. The two Twinings held the University outsides together. They were ever in the thick of the fray. Their defence and attack were equally efficient. The other backs were well advised to play up to them, and University profited. For the first quarter of an hour Westminster pressed and Kelman scored for them. After that University had matters all their own way and won quite comfortably by 16 points to 5.

University.—Goddard (back); Jardine, Twining, Twining, and Cooke (three-quarter backs); Hempson and Smith (half backs); McGillycuddy (captain), Beauchamp, Alderson, Barton, Redkin, Gainaway, Norman, and Winterbotham (forwards).

Westminster.—Kingston (back); Kelman, Ebden, Scott, and Buller (three-quarter backs); Paisley and Briscoe (half backs); Montgomery, Neath, Alchin, Ranson (captain), Lee, Mitchell, Clay, and Hacker (forwards).

PERSONAL INFECTION IN TUBERCULOSIS.

A LURID story, of the kind which we are perhaps a little accustomed to from America, was published last week in one of the evening papers. An unfortunate woman having been shot by her husband, who immediately afterwards turned the weapon against himself and committed suicide, an inquiry into the crime was held. In the murderer's pocket was found a letter addressed to the public, beginning, "It is a crime to be ill," while the rest of the letter explained that the writer was in the last stages of tuberculosis, and that medical men had warned his wife that if she remained with him she would contract the disease. He had determined therefore to shoot her lest she should desert him. The medical lesson contained in this story is the fact that the fear of personal infection of tuberculosis is becoming greatly exaggerated, and there seems sometimes a risk lest medical men should unnecessarily increase the public disquiet. Of course, there is a chance of personal infection, but when its measure is carefully estimated it can seldom call for such a reversion of all the usual social obligations as is implied by the separation of husband and wife.

INGRATITUDE.

WE do not remember a meaner theft than that for which Edward Dixon, a carman of Somers Town, was sent to prison for a month by Mr. D'Eyncourt at Clerkenwell police court last week. The man had brought his baby to the receiving ward of the Royal Free Hospital, where the resident physician found it was almost moribund. Hastening to attend it, she left two purses containing 16s. on the table, which Dixon immediately stole. The man's only excuse seems to have been that he "didn't think the baby was so bad." The magistrate did not underestimate this action when he called it "a disgusting exhibition of human ingratitude."

THE SHIPWRIGHT PRESSURE FILTER.

THIS device enables a porous cone to be attached to the supply tap, the filtering speed being about one pint of water in ten minutes. The cone is enclosed in a metal cylinder, and the whole apparatus and its parts can be submitted to periodical cleansing. Having regard to the rate at which the water filters through, and assuming that the facility with which the filter can be regularly cleaned is taken advantage of, there can be no reason for doubting its purifying power. We have also inspected a larger form of filter, the novel feature of which was that the porous cone was in two sections made tight by a rubber ring. This arrangement obviously assists to keep the filtering medium clean, and that is a very important matter. The specimens were submitted to us by the Shipwright Filter Company, of 78, Springbank-road, London, S.E.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 16th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 10	30·25	S.W.	...	68	47	35	35	37	Fine
" 11	30·06	S.W.	0·05	79	50	37	41	41	Overcast
" 12	30·02	W.	0·05	63	46	34	35	35	Fine
" 13	30·14	S.W.	...	71	51	35	42	43	Cloudy
" 14	29·73	S.W.	0·06	56	46	39	39	39	Overcast
" 15	29 01	W.	0·35	78	49	39	42	43	Cloudy
" 16	29·50	S.W.	0·01	76	45	35	36	37	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. M. Gossage, A. F. Voelcker): at 5.30 P.M.

Discussion :

On Pericarditis with Effusion as Determined by Operation or Post-mortem Examination (opened by Dr. Samuel West).

THURSDAY.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 8.30 P.M.

Papers and Specimens :

Dr. Hinds Howell: Tumours of the Pineal Body.

Dr. Campbell Thomson: Thrombosis (? Pontine), causing Left Fifth Nerve Anæsthesia and Hemianalgesia of the same Side.

Dr. Wilfred Harris: A Case of Thrombosis of the Posterior Inferior Cerebellar Artery, Followed by Severe Trigeminal Neuralgia in the Analgesic Facial Area.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—E. I. Spriggs, J. P. Lockhart Mummery, J. T. Leon): at 4.30 P.M.

Cases :

Dr. T. R. Whipham: A Case of Myelogeneous Leukæmia in an Infant of 18 Months.

Mr. P. Lockhart Mummery: A Case of Congenital Separation of the Recti Abdominis and Double Inguinal Hernia in a Girl.

Dr. David Forsyth: A Case of Non-cretinous Idiocy with Goitre.

Dr. G. Pernet: Lupus Vulgaris.

And other Cases.

Specimens :

Dr. W. Essex Wynter: Specimens and Colour Photographs from a Case of Chloroma shown at a Former Meeting.

Dr. Walter Carr: Granular Kidneys from a Boy of 12.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper :

Dr. J. E. Sandilands: The Communication of Diarrhœa from the Sick to the Healthy.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. J. S. R. Russell: The Cerebellum and its Affections (Lettsomian Lecture).

MEDICO-LEGAL SOCIETY, 11, Chandos street, Cavendish-square, W.C.

TUESDAY.—8.15 P.M., Mr. J. H. Evans: The Value of the Ear in Identification.—Dr. J. Scott: The Death Penalty.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. A. Keith: The Anatomy of the Negro and Negroid Races.

WEDNESDAY AND FRIDAY.—5 P.M., Prof. W. S. Handley: The Surgery of the Lymphatic System.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eyes. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eyes. 5 P.M., Lecture:—Dr. G. Stewart: Vascular Diseases of the Brain and their Treatment.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Cole: General Treatment of Mental Diseases.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eyes. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Muscular Atrophy.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Cerebral Hæmorrhage.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture: Dr. E. F. Buzzard.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. E. F. Buzzard.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. G. Watson: Innocent Growths.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Coccus Diseases: I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; Coccogenic Sycosis.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. E. Arnold, Lond.; Anglo-American Pharmaceutical Co., Croydon; A. V. K.; Automobile Contract Co., Lond.; Argylls, Ltd., Glasgow; Army and Navy Male Nurses' Co-operation, Lond., Secretary of.

B.—Messrs. Blundell and Rigby, Lond.; Beckett Hospital, Barnsley, Hon. Secretary of; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. W. P. S. Branson, Lond.; Mr. W. Braumüller, Vienna; Dr. G. J. Blackmore, Bombay; The Bayer Co., Lond.; Mr. J. A. Barth, Leipzig; Messrs. Branson and Co., Lond.; Mr. C. Birchall, Liverpool; Bath Royal United Hospital, Secretary of; Mr. Herbert J. Bell, Lond.; Captain T. T. Behrens, R.E., Brussels; Dr. E. F. Bashford, Lond.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Cheltenham Corporation, Clerk to the; *Canadian Journal of Medicine*, Toronto, Editor of; Dr. A. Caddy, Calcutta; Mr. H. Collinson, Leeds; Messrs. W. Coles and Co., Lond.; Messrs. Cook and Co., Lond.; Crookshury Sanatorium, Farnham, Medical Superintendent of; Cheltenham General Hospital, Secretary of; Messrs. E. Catchpole and Sons, Lond.; Messrs. J. and A. Churchill, Lond.; The G. W. Carnrick Co., New York; Dr. Cardenal, Barcelona; Mr. W. Crooke, New Brighton.

D.—Messrs. F. Davidson and Co., Lond.; Messrs. Dawson and Sons, Lond.; Dr. Andrew Dunlop, St. Heliers; David Lewis Northern Hospital, Liverpool, Secretary of; Messrs. Duncan, Flockhart, and Co., Edinburgh.

E.—Mr. Walter Edmunds, Lond.; Dr. F. Ellingwood, Chicago; Edine, Ltd., Lond., Manager of; Dr. W. R. Eagleton, Newark, U.S.A.

F.—Dr. R. Fortescue Fox, Lond.; Messrs. Fannin and Co., Dublin; Dr. J. M. Fortún, Cuba; F. N. D.; Messrs. J. Feeney and Co., Birmingham.

G.—Mr. F. Harley Goldby, Lond.; Messrs. Gale and Co., Lond.; Mr. W. H. Gattie, Lond.; The H. W. Gossard Co., Chicago; Great Western and Metropolitan Dairies Co., Lond.; Dr. Jacob Grahn, Owensboro, Kentucky; Dr. J. D. Gatewood, Yokohama.

H.—Mr. W. L. Hampton, Perth; Messrs. T. Holland and Son, Lond.; Dr. F. Hare, Lond.; Mr. T. H. Hewitt, Lond.; Mr. G. O. Henninger, Lond.; H. E. F.; Mr. S. F. Harvey, Lond.; Messrs. Haasenstein and Vogler, Cologne; Huddersfield Corporation, Medical Officer of Health of.

I.—India Rubber, Gutta Percha, and Telegraph Work Co., Lond.; Ilford, Ltd., Lond.; Indo-Burma Co., Lond.

J.—Dr. J. Jordan, Meaford, Canada.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. King, King, and Co., Bombay; Kent and Canterbury Hospital, Secretary of; Surgeon-Major Bernard Kendall, Lond.; K.; Dr. Knight, Portobello; Messrs. Kutnow and Co., Lond.

L.—Mr. H. K. Lewis, Lond.; Leith Hospital, Clerk to the; Dr. Robert A. Lyster, Winchester; J. F. Lehmann's Verlag, München.

M.—Mr. P. Lockhart Mummery, Lond.; Mr. A. Moxon, Ramsbury; Mr. A. Monro, Edinburgh; Medical Society of London, President and Council of; Mr. A. Maloine, Paris; Mr. R. Mosse, Berlin; Medical Graduates' College and Polyclinic, Lond., Secretary of; Messrs. Meinecke and Co., New York; Maltine Manufacturing Co., Lond.; Mr. N. Meimarachi, Lond.; Maternity Nursing Association, Lond., Matron of.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; Nottingham General Dispensary, Secretary of.

O.—Miss C. Oster, Utica, U.S.A.

P.—Messrs. Peacock and Hadley, Lond.; Mr. A. Pope, Lond.; Mr. F. Tennant Pain, Lond.; Dr. A. Howard Pirie, Lond.; Mr. John Pratt, Millom; Messrs. Parke, Davis, and Co., Lond.; Mr. A. Pemberton, Manchester.

Q.—Queen's Hospital, Birmingham, Secretary of.

R.—Dr. R. J. Rowlette, Dublin; Royal College of Physicians, Edinburgh, Treasurer of; Messrs. Radford and Frankland, Lond.; Dr. Nathan Raw, Liverpool; Dr. C. Russ, Lond.; Dr. C. J. Russell, Christchurch, New Zealand; Mr. H. C. Ross, Liverpool; Royal Albert Asylum, Lancaster, Secretary of; Messrs. Rebman, Lond.

S.—Scholastic, Clerical, &c., Association, Lond.; Professor Elliott Smith, Manchester; Sell's Advertising Agency, Lond.; Mr. F. L. Simons, Edinburgh; Mr. V. N. Singh, Lahore; Seamen's Hospital Society, Lond., Secretary of; Dr. J. Snowman, Lond.; Mr. Sydney Scott, Lond.; Dr. T. Claye Shaw, Lond.; Dr. C. W. Saleeby, Lond.; Dr. W. S. Stevenson, Lond.; Mr. T. A. Scott, Toledo, U.S.A.; Sheffield University, Registrar of; Messrs. W. H. Smith and Son, Stafford; Mr. R. Svensson, Coatham.

T.—Mr. George Thom, Cairo; Mr. E. N. Thornton, Cape Town; Mrs. Thwaites, Lond.; *Die Tabakwelt*, Editor of.

U.—Messrs. Urban and Schwarzenberg, Vienna.

V.—Messrs. Vigot Frères, Paris; Mr. Dennis Vinrace, Lond.

W.—Miss G. Williams, Lond.; West Norfolk and Lynn Hospital, Secretary of; Woodhall Spa Co., Woodhall Spa, Secretary of; Mr. C. Ernest West, Lond.; Mr. William Wood, Kennebunkport, Maine, U.S.A.; Messrs. W. Wood and Co., New York.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. T. L. Ashforth, Doncaster; Aberystwyth Corporation, Accountant to the; A R. G.; Dr. J. F. Anderson, Washington, U.S.A.; A. C. W. A.; Mr. M. A. Adams, Bearstead.

B.—Dr. F. J. Browne, Abertillery; British Drug Houses, Lond., Secretary of; Mr. H. Butterfield, Northampton; Messrs. Boyveau and Chevillet, Paris; Mr. B. R. Bostock, Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Dr. J. C. Bowie, Bixter; Black's Advertising Agency, Lond.; Dr. E. Birt, Wakefield; Mr. H. Bennett, Builth Wells; Bristol Royal Hospital, Secretary of; Mr. J. T. Burrows, Hadleigh; Dr. W. Bainbridge, Kelso; Dr. T. W. Beazeley, Little Bromwich; Messrs. Brown and Son, Reading; Bristol General Hospital, Secretary of.

C.—Dr. S. Clark, Tonapah, U.S.A.; Mr. F. J. Carter, Seaview, Isle of Wight; Dr. S. R. Collier, Lond.; Dr. J. J. Clarke, Lond.; Dr. M. A. Cassidy, Lond.; Mr. D. K. Chatterjee, Bhagalpur, India; Mr. H. A. Collins, Croydon; The Coppice, Nottingham; C., Tooting; C. E. T.; Clayton Hospital, Wakefield, Secretary of; Messrs. Condy and Mitchell, Lond.

D.—Mr. H. Dismorr, Hastings; Dr. W. T. Dougal, Pittenweem; Mr. W. T. Dinning, Cramlington; David Lewis Epileptic Colony, Manchester, Secretary of.

E.—Messrs. W. and T. Evans, Cork; Messrs. Elliott, Son, and Boyton, Lond.; East Suffolk and Ipswich Hospital, Secretary of; Miss M. K. Evans, Sidcup; Mr. H. S. Elworthy, Ebbw Vale.

F.—Mr. H. A. T. Fairbank, Lond.; French Hospital, Lond., Secretary of; Dr. Fieldhall, Lond.; F. S.

G.—Mrs. Garrard, Rotherham; Dr. S. Gill, Liverpool; Dr. G.; Dr. J. A. Glover, Lond.

H.—Mr. E. E. Head, Bulawayo; Mr. C. S. Haigh, Huddersfield; Mr. E. Hemstead, Kintbury; Hull Royal Infirmary, Secretary of; Mr. J. W. Harbinson, Middle Brighton, Australia; Horton Infirmary, Banbury, Secretary of; Home Sanatorium, Bournemouth, Medical Superintendent of; Mr. J. H. Hollyer, Droitwich; Mr. J. Hart, Lond.

I.—Lieutenant-Colonel D. L. Irvine, R.A.M.C., Normanton.

K.—Dr. J. Kirkland, Lond.; Mr. S. Karger, Berlin; Messrs. H. S. King and Co., Lond.

L.—Mr. H. Littlewood, Leeds; Dr. G. H. C. Lumsden, Brighton; Leeds Hospital for Women and Children, Secretary of; London Pure Milk Association, Lond., Secretary of; L. E. G. D. F.

M.—Monkwearmouth, &c., Hospital, Secretary of; Dr. N. E. MacKay, Halifax, Nova Scotia; Messrs. Meister, Lucius, and Brüning, Lond.; Miltner's Advertising Agency, Middlesbrough; Middlesbrough Corporation, Treasurer to the; Dr. T. J. J. McHattie, Lond.; M. E. L.; Mr. S. W. MacIlwaine, Clevedon; Mr. G. Mills, Ilford; Mr. J. J. MacGrath, Dunfanaghy.

N.—Dr. M. I. Nougués, Zaragoza; Mrs. Mabel Neylan, Urandangie, Queensland; Nottingham Children's Hospital, Secretary of.

O.—Messrs. H. J. Osborne and Co., Lond.; Oldham Infirmary, Secretary of.

P.—Mr. M. Parera, Barcelona; Peckham House, Lond., Medical Superintendent of; Mr. F. E. Potter, Lond.; Mr. J. E. Phillips, Malpas.

R.—Messrs. Raimes and Co [illegible]k; Dr. A. T. Rimell, Manningtree; Rockefeller Institute for Medical Research, New York, Librarian of; R. O.; Messrs. Reitmeyer and Co., Lond.; Royal Surrey County Hospital, Guildford, Assistant Secretary of.

S.—Dr. C. F. Seville, Oulton; Springfield State Hospital, Sykesville, Medical Superintendent of; Mr. Philip C. Shepheard, Aylsham; Surgeon, Ferndale; Sherwood Forest Sanatorium, Nottingham, Secretary of; Messrs. A. F. Sharp and Co., Glasgow; *Shrewsbury Chronicle*, Manager of; S. D.; Surgeon, Wood Green; Saarbach's News Exchange, Mainz.

T.—Dr. Mary Taylor, Rome; Mr. S. Tucker, Liphook; Mr. J. Taylor, Glasgow; T. S. B.

U.—University College, Dublin, Secretary of; Mr. C. H. Upham, Lyttelton, New Zealand.

V.—Victoria Hospital, Burnley, Secretary of; Dr. Vigneras, Paris.

W.—Miss M. A. Withers, Lond.; Captain F. Winslow, R.A.M.C., Bradford; Mr. M. Westin, Lond.; Mr. W. F. Walker, Dinas Mawddwy; Staff-Surgeon H. V. Wells, R.N., Chatham; Mr. S. A. Williamson, Lond.; Mr. R. S. Walker, Kingussie; Walsall and District Hospital, Secretary of.

EVERY FRIDAY.

THE LANCET.

PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

The Milroy Lectures
ON
THE STREPTOTRICHOSES AND TUBERCULOSIS.

Delivered before the Royal College of Physicians of London on Feb. 17th, 22nd, and 24th, 1910,

By ALEXANDER G. R. FOULERTON,
F.R.C.S. Eng., D.P.H. Camb.,

LECTURER ON BACTERIOLOGY AND ON PUBLIC HEALTH TO THE MIDDLESEX HOSPITAL SCHOOL, AND COUNTY MEDICAL OFFICER OF HEALTH FOR EAST SUSSEX.

LECTURE I.

Delivered on Feb. 17th.

Mr. President and Fellows,—I have, in the first place, to discharge a grateful obligation by expressing my sense of the honour which you have been pleased to bestow by electing me as your Milroy lecturer for the present year. And the honour is not the less appreciated in my consciousness of the liberality with which you have carried into effect the suggestion of the Founder, that selection of a Milroy lecturer by your Council should not be limited to your own Fellows and Members, but should be so extended that from time to time it might include other workers in the science of which your College is the senior corporate representative.

In choosing the subject of my lectures I have been influenced by the fact that, owing to one cause or another, during the last ten years or so somewhat special attention has been given in the Middlesex Hospital Laboratories to the investigation of cases of streptotrichosis, a class of infections which, as there can be little doubt, are commoner of occurrence than the general run of clinical records would suggest; and this quite apart from any consideration of cases recognised specially as cases of tuberculosis. Difficulties arising because of the varying morphology of the parasites causing these infections, and often difficulties in the way of obtaining cultures of the organism on artificial media, must necessarily sometimes hinder the ready recognition of the exact nature of the infection in these cases. And the more likely does it appear that the nature of the special infection is not infrequently overlooked when we consider that although some cases of streptotrichosis present certain clinical peculiarities which one would be inclined to look upon as being more or less characteristic, yet such peculiarities are seldom sufficient in a particular case to enable a definite diagnosis of the kind of infection to be made on clinical grounds and without reference to the result of bacteriological examination. There is, in short, nothing in the history or clinical indications in the majority of the numerous cases of infection of parts about the mouth and neck, and in cases of appendicitis, for examples, which would enable a diagnosis of streptotrichosis to be arrived at without bacteriological identification of the causative parasite.

But, in addition to any clinical interest, this class of infections has a wider interest because of the apparent affinity between certain undoubted species of streptotricheæ and the parasite, or parasites, of tuberculosis. Our own investigations into the pathology of streptothrix infections, together with much work bearing on the subject which has been carried out elsewhere, have led directly to a very definite conclusion as to the relationship, amounting to actual generic affinity, between this class of infections and those recognised under the name of tuberculosis. And further, systematic comparison of the biological characteristics of the recognised streptothrix organisms on the one hand, and of different "strains" of the parasite of tuberculosis on the other, leaves no doubt as to the correctness of the opinion held by certain earlier pathologists who, within a few years of Koch's announcement of his discovery of the cause of tuberculosis, maintained that the reputed bacillus was not, in fact, a fission fungus at all, but rather belonged to a higher group of mould fungi.

In what follows, after considering in some detail the general characteristics of the streptotricheæ and the pathology of the infections which they cause, I propose to deal with the evidence which is available in support of these two propositions: (1) That under the name of "tuberculosis" there are commonly included infections caused by more than one species of parasite; and (2) that the parasites, generally reputed to be bacilli, which are the cause of tuberculosis, belong in reality to a higher group of organisms, and should, as streptotricheæ, be included with the hyphomycetes, or mould fungi. Before proceeding, however, it will be well to explain some confusion which has prevailed in the past with regard to the nomenclature of streptothrix infections and which still persists to some extent. Thus, whilst in this country and in the United States the term streptotrichosis has been adopted generally, continental pathologists as a rule still favour the older designation for these infections, actinomycosis. And writers on general medicine have not always appreciated the fact that these two terms are absolutely synonymous; so that one sometimes finds, even in recent text-books, reference made to the streptotrichoses as if they were, as a class of disease, in some sort different from the actinomycoses. Confusion has been increased by the fact that the parasites of these infections have been described at one time or another under at least five different generic names—*Actinomyces*, *Cladothrix*, *Nocardia*, *Oospora*, and *Streptothrix*—three of which, *Streptothrix*, *Actinomyces*, and *Cladothrix*, are in current use.

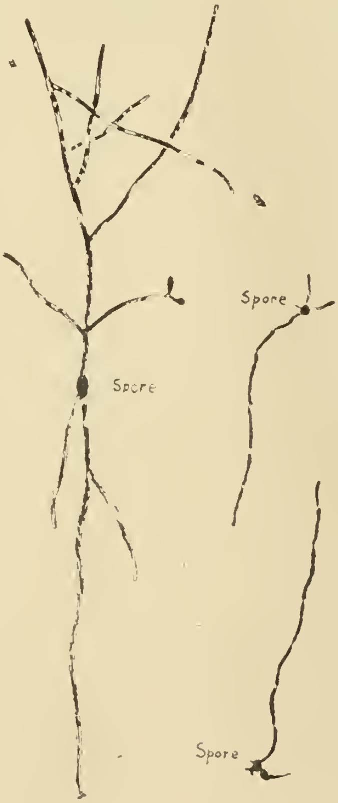
The origin of this confusion is easily traced. In 1887 Bollinger described the disease of cattle caused by the aptly named *Actinomyces*, or ray fungus. In the following year Israel described some cases of actinomycosis in man and cattle which were caused, he believed, by one and the same parasite. In succeeding years, and until about 1890, numerous cases of disease in both man and lower animals were recorded as cases of actinomycosis; but usually the diagnosis was founded on the identification of a ray fungus in the tissues or in discharges by means of the microscope only and without the use of bacteriological methods which would allow differentiation of morphologically similar, but specifically distinct, varieties of ray fungi. Amongst British bacteriologists who had interested themselves specially in these cases Crookshank and McFadyean in 1889 expressed their belief in the specific identity of the parasite in all cases of actinomycosis in man and cattle. In 1890 Bostroem, apparently after a more thorough personal investigation than had been carried out by any other pathologist, also affirmed the belief that all cases of actinomycosis represented infection by the one ray fungus. In 1891, however, Wolff and Israel described an organism, isolated from a case of disease in man, which was clearly a ray fungus of some species different from that which hitherto had been described as the only cause of actinomycosis.

Meanwhile, in 1888, Nocard had published a very careful account of the characteristics of a parasite which had been proved to be the cause of a common disease of a tuberculous nature occurring in cattle in France and Guadeloupe and known as *farcin des bœufs*. The parasite was described as a fine, long bacillus, presenting occasional branching, which Nocard likened to the lateral branching of a common saprophytic fungus known at the time under the name of *Cladothrix dichotoma*, but since recognised as a streptothrix (*Streptothrix nigrescens*, Foulerton and Jones). Nocard's organism (*Streptothrix nocardii*) has acid-fast properties, and under the conditions of artificial infection causes a definite tuberculous condition in guinea-pigs. In 1890 Eppinger described under the name of *Cladothrix asteroides* another branching, acid-fast, organism which he isolated from an infection in man. This species, now generally known as *Streptothrix eppingeri*, has since then been repeatedly isolated from somewhat various cases of disease; and it is obvious that the results of an infection by this streptothrix also may be indistinguishable anatomically from a tuberculosis caused by Koch's bacillus. In 1894 Vincent isolated and described under the name of *Streptothrix maduræ* a parasite which he believed to be the cause of the mycosis known as madura foot, and he recognised the resemblance between the streptothrix and Bollinger's *Actinomyces*. In this way, then, confusion arose; but during recent years the nomenclature of these parasites has gradually become simplified, and, as already stated, the majority of pathologists in this country have come to a common use of the generic term streptotrichoses as the designation of infections by the streptotricheæ, or ray fungi.

The Position of the Streptotricheæ in Botanical Classification: their Morphology and Method of Reproduction.

Inasmuch as it is one of the purposes of these lectures to present evidence in support of the proposition that the reputed *Bacillus tuberculosis* is a parasite—or more probably represents several parasites—which has been placed erroneously amongst the bacteria or fission fungi, when its correct position as a streptothrix would have been amongst the mould fungi, the exact position in botanical classification of the genus *Streptothrix* itself becomes of importance. For it has been held by some that the streptotricheæ are not true mould fungi; and the typical life-stages of a streptothrix, in which the organism is represented successively by a branching mycelium, by isolated rod-segments, and by spherical spores, have been interpreted as representing merely branching and coccal phases of a highly pleomorphic bacillary fission-fungus. These views are not now accepted generally, and it would not be necessary to devote time to consideration of them, were it not that the difficulties which have stood in the way of the recognition of the streptotricheæ as mould fungi are of a morphological nature, and are precisely similar to those which at the present time prevent a general recognition of the relationship between the parasite, or parasites, of tuberculosis and streptothrix organisms.

FIG. 1.



Sporothrix. Streptothrix.
Figures show early development of mycelium from spores.

In order to determine the botanical position of the streptotricheæ the type-development of the genus may be studied by watching the development of one of the quickly growing saprophytic species in a wet preparation kept at a suitable temperature under the microscope. The progress of growth can be followed quite easily. One starts with the spore, a spherical body which differs, it may be mentioned, from the spore of a fission fungus both in its staining properties and in its comparative resistance to heat. If a single spore is kept under observation one finds that within a few hours either two or three threads have begun to sprout from it. These threads gradually elongate, so that at an early stage of growth one has a typical "ray fungus," consisting of three mycelial threads, usually of unequal length, radiating out from the position occupied by the spore as a centre. From these primary threads lateral branches in turn sprout out; and soon there is a densely tangled mass of mycelium representing the fully developed stage of the organism. The next stage, that of transverse segmentation, is most conveniently studied in cultures on solid media. The branching mycelium, which hitherto has been apparently homogeneous throughout its length, now presents differentiated transverse segments, usually of irregular extent, produced by an obvious process of degeneration extending across the mycelium. And accordingly one sees, separated by larger or less intervals, a series of rod-segments which preserve, apparently unaltered, the original characters of the mycelium. The extent of the interval between successive rod-segments varies considerably. In saprophytic species especially the intervening degenerated portions are well marked and usually occur at irregular intervals along the mycelium. In some of the slow growing pathogenic species the persistent segments may be separated by only very narrow and regularly placed intervals, so that the segmented mycelial thread has the appearance of a strepto-bacillary chain. Next there is a stage of fragmentation. The degenerated portions of the mycelium disappear and a conglomeration of separate rod-segments represents the original system of branching mycelium. These rod-segments may have a wavy or distinctly spiral shape, but, speaking generally, they are morphologically identical with bacilli, except that here and there a rod with the remains of a lateral branch still attached to it may be seen. With, or soon after, the occurrence of segmentation of the mycelium a special kind of spore formation, chain sporulation, may be observed. This process of sporulation also is best studied in cultures on solid media. In a typical instance special spore-bearing organs are developed, fine aerial hyphæ which, erecting themselves from the growth of mycelium, often cause a powdery or cretaceous appearance on the surface. Spores are produced in these aerial hyphæ apparently by a process of segmentation which is, perhaps, similar in its nature to that by which the rod forms are produced in the mycelium. Sporulation occurs in the hyphæ with uniform regularity, so that when the process is complete the appearance in a stained specimen is precisely that of a streptococcal chain. It seems probable, also, that under certain circumstances these spherical spores may be produced along the length of the mycelium as well as in the special hyphæ. When these successive phases can be clearly traced in cultures on artificial media, as in the case of saprophytic and certain freely growing pathogenic species, no difficulty as to the botanical position of the organism can arise. We have a typical hyphomyces or mould fungus with special spore-bearing organs, the aerial hyphæ.

The main variations which have been observed in individual species are: (*a*) with regard to comparative rapidity of growth; (*b*) with regard to the extent of degeneration of the mycelium between the persistent rod-segments; and (*c*) with regard to the frequency of lateral branching. In respect to the last point, branching may be so infrequent in growth under parasitic conditions that the mycelial tuft is distinguishable with difficulty from a mass of strepto-bacilli.

And, indeed, with some pathogenic species identification may be a difficult matter. In some cases typical ray fungi are not to be found either in pus from the lesions or in the tissues examined. In such cases all that one may find on microscopic examination is a number of rod-segments which stain, often in a somewhat granular fashion, by Gram's method, and are occasionally acid-fast. In the examination of a specimen of the pus suspicion may be raised by the general character of the rods; they may be unusually long and fine for bacilli, usually some will have a beaded appearance, and here and there a rod may show the remains of a lateral branch. Also the pus will usually contain microscopic masses of fine granular, or dust-like, material which stains deeply by Gram's method, and probably represents the débris of mycelium which has undergone a completely destructive degeneration. These fine granules are not to be confounded with the spherical spores; their staining characters are similar, but they are much smaller, and unlike spores appear collected in large masses. In pus one may also find calcareous masses representing tufts of mycelium which have undergone a peculiar cretaceous incrustation which happens with some species. On attempting culture of the parasite in such a case one finds frequently that growth, if obtained, is very slow. On nutrient agar there may be small, whitish, dry-looking, heaped-up colonies after six or seven days' incubation, or not until after a longer period. On examining the growth the appearance of the organism may be much the same as in the pus; there are long, fine threads which stain by Gram's method, and there may be more distinct evidence of lateral branching than was seen in the pus, especially if the culture is examined at an early date of growth. Later on spherical spores will appear on the medium. The appearances in cultures obtained in fluid media, such as pepton broth, are usually somewhat different and more distinctive. After a few days' incubation small speck-like colonies appear, either cohering in a filmy mass at the bottom of the medium or adhering, isolated, to the sides

FIG. 1.

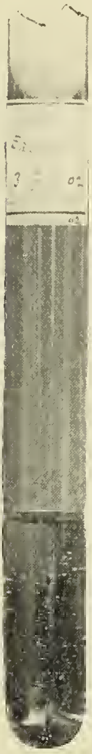


FIG. 2.

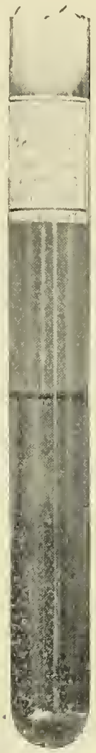


FIG. 3.

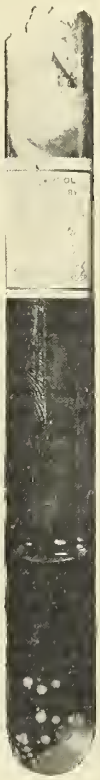


FIG. 4.

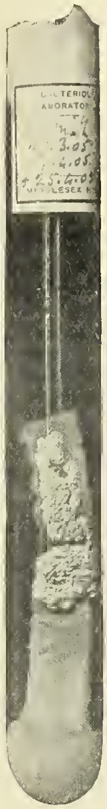


FIG. 5.

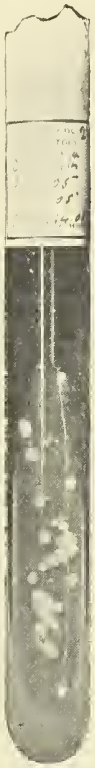


FIG. 6.

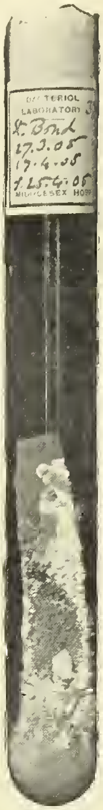


FIG. 7.

FIG. 8.

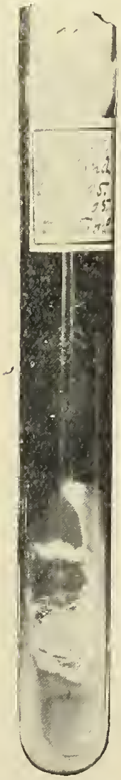


FIG. 9

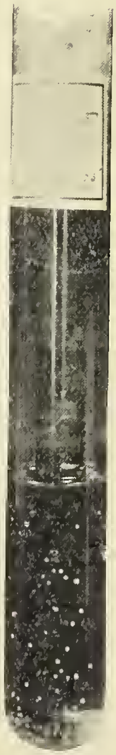


FIG. 10.

FIG. 11.

FIG. 12.

FIG. 1.—Culture of *Streptothrix hominis I.* in broth, showing small colonies adherent to the side of tube.
FIG. 2.—Culture of *Streptothrix hominis II.* in broth.
FIGS. 3, 4, 5.—Cultures in broth and on potato and serum of *Streptothrix hominis III.*
FIGS. 6, 7, 8.—Cultures on potato, gelatin, and serum of *Streptothrix hominis IV.*
FIGS. 9, 10, 11, 12.—Cultures in broth and in milk (showing characteristic change in medium), and on potato and serum of saprophytic species, *Streptothrix chalcea.*

of the tube. If these speck-like colonies are examined microscopically from time to time, they will be found to consist at first of the typical branching mycelium of a ray fungus which subsequently undergoes processes of segmentation and fragmentation, as already described. And it would appear that the difficulty in identification of some of these organisms in growth on solid media is due to the fact that segmentation and fragmentation of the mycelium follow rapidly on very slow growth. This description, it must be repeated, applies only in the case of certain slow-growing species of the type of those which I have described as *Streptothrix hominis* I. and II. In other pathogenic organisms of more vigorous growth the true type is identified as readily as in the saprophytic species.

The method of sporulation in the genus *Streptothrix* is of importance, since the rough classification of pathogenic achlorophyllous fungi into three main divisions, as adopted by pathologists for working purposes, is based mainly upon the method of reproduction which characterises the organism. Thus the bacteria, or fission fungi, are defined as unicellular organisms which reproduce themselves either by fission or by spore formation. In the one case the parent cell produces two new cells by a process of clean transverse fission; in the other case a single endogenous spore is produced, so that a single cell succeeds a single cell. The blastomycetes, or yeast fungi, are also simple unicellular organisms amongst which the new cell is produced by a process of gemmation or budding from the parent cell, or by a process of multiple endogenous spore formation in which the parent cell produces usually two, three, or four spores. In the hyphomycetes, or mould fungi, we have a more complex kind of organism in which sporulation is a function of specialised spore-bearing organs of various type, the simplest perhaps of which is represented by the aerial hyphæ of the streptotricheæ and species of some other genera. With these differences of reproductive method there are, of course, differences in general morphology to be considered. But for the pathogenic species of fungi, at any rate, the special reproductive method is in itself a sufficient criterion.

The distinguishing characteristics of the spores of yeast fungi do not enter into the present discussion, and it has only to be mentioned now that, apart from the method of their production, the spores of mould fungi may be distinguished from those of fission fungi by two tests. First, the spores of a mould fungus do not stain by the special method of Moeller used for demonstrating the spores of fission fungi, but, on the other hand, stain deeply by Gram's method. And, secondly, the resistance to heat is less in the case of the spores of mould fungi than it is with the spores of fission fungi; also the difference between the heat resistance of the active and the spore forms of a mould fungus is less than the like difference in the case of a fission fungus. Thus in a case of a bacillus with a thermic death point at about 60° C., under the usual time conditions of exposure, the thermic death point of the spores will be at about 100° C. With a streptothrix, on the other hand, if the thermic death point of the young unsegmented mycelium is at about 60° C., the thermic death point of the sporing culture will usually be at about 75° C., showing a difference of only about 15 centigrade degrees of heat as against about 40° in the case of the fission fungus. The spherical spores of the streptotricheæ correspond in every respect with the spores of a mould fungus, and, as will be pointed out when the parasites of tuberculosis are specially considered, there is a high degree of probability, amounting almost to certainty, that the reputed bacilli of tuberculosis are reproduced by the methods characteristic of species of the genus *Streptothrix*.

It has been stated that the stage of full development of the streptothrix is represented by a system of branching homogeneous mycelium: something must be added as to the biological significance of the subsequently developed rod-segments and spherical spores. As to the nature of what have been described as the spherical spores there can be no doubt, and it is probable that the rod-segments also have to be considered as being, in a sense, spore bodies. That is to say, it is probable that these rod-segments represent a more resistant form, which is capable of producing a new mycelium directly, and by means of which in cases of disease the infection commonly is transported from one part of the body of the host to another. The fully developed mycelium obviously, because of its bulk, would not pass easily from one part to another, except by steady invasion along continuous tissues; and there are reasons for believing that when living as a parasite under many of the conditions applying in case of disease a streptothrix does not readily undergo complete sporulation with the development of spherical spores. But under parasitic conditions segmentation and fragmentation of the mycelium occur freely; isolated rod-segments will be carried from part to part readily enough, and by the examination of sections through recently established secondary foci of infection it has been possible to obtain evidence microscopically of the early sprouting of branching mycelium directly from rod-segments and not from spherical spores.

It has been stated already that the view now taken of the botanical position of the streptotricheæ has not always been accepted, but that some have regarded the morphology of the genus as indicating merely more or less accidental variations of a class of highly pleomorphic fission fungi; rod-segments have been regarded as bacilli, and it has been assumed that they habitually reproduce themselves by direct division after the recognised manner of fission fungi. The branching forms also have been regarded as representing accidental aberration from a normal bacillary type, whilst the spherical bodies have been looked upon as being merely coccal involution forms. This opinion cannot now be sustained, however, against the evidence of observed facts. At the present time there can scarcely be difference of opinion as to the nature and import of the spherical spores; the life-cycle of the organism, from spore to mycelium and from mycelium again to spore, is traceable so clearly that misinterpretation is barely possible. But the position is somewhat different with regard to the question as to the direct multiplication of the rod-segments. I have referred to these as being probably resistant spore-bodies of a kind; and from what we know of the biology of others of the higher pathogenic fungi it is not impossible that under some conditions the rod-segments may reproduce themselves directly, and without intervention of the usual sporing and mycelial stages. It is true that we have at present no evidence that this multiplication of what may be termed "intermediate forms" as such actually occurs with the streptotricheæ, but we know that it does occur with the pathogenic fungus known as *Sporothrix Schenckii*, an organism resembling morphologically in some respects, and with regard to its pathogenic action closely, the species of this genus. If one follows the development of the sporothrix under conditions of culture on artificial media one observes this life cycle. The single spore sprouts, and usually three mycelial threads are produced from it; then secondary branching occurs very quickly; and, in the result, a tangled mass of mycelium, very much like that of a streptothrix, but of coarser substance, is produced. In the sporulation of this mycelium two kinds of cells, which may be regarded as being of the nature of spores, appear. Spherical endogenous bodies, which I would describe as true spores, are developed in the length of the mycelium and in aerial hyphæ like those of the streptotricheæ; and ovoid exogenous bodies, which I would term provisionally the "spore bodies," sprout out at the sides and from the ends of the mycelial threads. Under most conditions of culture on artificial media this sporothrix always reproduces itself in true fashion according to the type of a mould fungus. The spherical spores and the ovoid spore bodies never reproduce themselves as such, but, one or other, always yield a mycelium by a process of sprouting. Under parasitic conditions, however, the morphology of the sporothrix is different in that only the ovoid spore body occurs. If either a young mycelial or an older sporulating culture is inoculated under the skin of a mouse a progressive and widely spreading infection of the subcutaneous tissue follows. In the resulting granulomatous tissue vast numbers of the ovoid spore bodies will be found, but never, according to my own observations, either the mycelial form of the fungus or the spherical true spores. It appears to be quite certain that under the conditions of parasite life the intermediate ovoid form is capable of direct reproduction as such. And since the rod-segments of the streptotricheæ, like these spore bodies of the sporothrix, are capable of producing a new mycelium without an intervening spore stage, so it is possible that under parasitic conditions of existence they also may be capable of reproducing themselves directly as rod-segments, and thus simulating true bacilli.

THE SAPROPHYTIC STREPTOTRICHEÆ.

The saprophytic streptotricheæ are widely distributed; found occasionally in water and fairly frequently in air, they appear, however, to be more especially soil organisms. The saprophytic species which have been studied specially in the laboratories at the Middlesex Hospital fall within two main groups. One group includes a freely growing type of organism which yields a widely spreading growth on artificial media. The development of aerial hyphæ is usually well marked, and their appearance is often accompanied by a chalky-looking efflorescence on the surface of the growth. In most of the species growth occurs at temperatures as high as 37° C., but in one or two species which have been examined the higher temperature limit for growth is a little above 22° C. In many cases the growth gives off a pronounced "earthy" or "mouldy" smell. Many species exercise an active ferment action on media in which they may be growing, peptonising gelatin and inspissated blood serum, and exercising an active diastatic action on starch. A single species (*Streptothrix alpha*, Price Jones) amongst those which have been examined in my laboratories causes an active coagulation of milk; but several others exercise a peculiar action, possibly of the nature of a saponification, on this medium, whereby the milk clears slowly from above downwards, whilst a very fine granular deposit of altered casein is gradually thrown down. As examples of this group of saprophytic species, *Streptothrix nigrescens* (*Cladothrix dichotoma*, Cohn), *Streptothrix nigra* (Rossi-Doria), and *Streptothrix leucea saprophytica* (Foulerton) may be mentioned.

In the second group of saprophytic species there is a tendency for growth on artificial media to be within more closely circumscribed limits, and at the same time to become heaped up. The development of aerial hyphæ on the surface of the growth is marked by a dull, powdery appearance, rather than by the bright chalky efflorescence which characterises the growth of many species included in the first group. The strong mouldy smell is not in evidence, or may be very faint. Ferment action, and especially diastatic action, is apparently less common, and when it does occur is usually less vigorous than with species of the other group. Some members of this group exhibit the peculiar, possibly saponifying, action on milk which has been already referred to. With some species of this group a peculiar action on gelatin has been noted; the medium is slowly changed to a fluid which is of a syrupy consistence at a temperature of 20° C. The change is quite distinct from that caused by an active peptonisation of gelatin with the production of a freely mobile fluid, such as commonly occurs; the condition appears to result from some change which causes a lowering of the melting point of the medium, for the gelatin sets again firmly if its temperature is lowered to about 8° or 10° C.

In this second group the mycelial threads are usually finer perhaps than in the other, and some of the species approximate in their general characteristics to the slower growing pathogenic rather than to the freely growing saprophytic organisms of the first group. As examples of the second group one may instance two new chromogenic species which have been described in my laboratories, *St. chalcea*, a species of fairly free growth, and *St. erythrea*, an organism of slow growth on artificial media and resembling culturally in many respects the parasitic species.

It is not to be understood, of course, that the above general characteristics attributed to the two groups of saprophytic species are in any sense inclusive—they merely indicate outstanding characters which, singly or together, are specially noticeable in two general types of organism.

Before leaving the saprophytic species the question of their thermic death point may be just mentioned. The thermic death point for 16 saprophytic species was determined by Price Jones and myself with the following results:—

For 6 species the death point was under 45° C.
,, 1 ,, ,, ,, ,, ,, above 45° C. and under 55° C.
,, 4 ,, ,, ,, ,, ,, ,, 45° C. ,, ,, 60° C.
,, 3 ,, ,, ,, ,, ,, ,, 60° C. ,, ,, 70° C.
,, 2 ,, ,, ,, ,, ,, ,, 60° C. ,, ,, 75° C.

One species, *Streptothrix leucea saprophytica*, showed an unusually low resistance to heat, sporing cultures being destroyed by exposure for 30 minutes to a temperature of less than 45° C. or when kept for seven days at a temperature of 37° C. On the other hand, Kedzior has described a thermophilic streptothrix isolated from river water which grows freely at temperatures as high as 60° C.

STREPTOTRICHEÆ PARASITIC AND PATHOGENIC FOR HIGHER PLANTS AND ANIMALS LOWER THAN MAN.

The streptotricheæ have to be considered next as parasites, both of higher forms of plant life and of animals, whether as harmless or even useful associates or as definite pathogenic agents. It has been said that the saprophytic species may be considered as being especially soil organisms; frequent association with herbage is also particularly noticeable. Thus, Mazè some 12 years ago described organisms, which sometimes presented definite branching according with the streptothrix type, as forming the root colonies which attach themselves to leguminous plants, and more recent investigations into the biology of nitrogen-fixing organisms have tended to confirm the original investigations. Such colonies, it may be mentioned, are found to be especially abundant on the roots of leguminosæ when growing in a poor soil; and under these circumstances the organism performs an obviously useful function in fixing the nitrogen of the ground air and presenting it in a readily assimilable form to its vegetable host. Again, Berestnew found that streptotricheæ are especially common as parasites of grasses; cultures were readily obtained by moistening hay and dry straw with sterilised water, several species (*Streptothrix graminarum* I. and II., and others) being thus isolated and described.

The acid-fast properties of some streptotricheæ and of other apparently closely allied organisms will be referred to in detail further on. But it may be pointed out here that amongst the reputed bacilli which display acid-fast properties to a marked degree, and some of which have all the characteristics of a streptothrix, there are two (*Bacillus phlei* I. and II., Moeller) which are common parasites of Timothy grass, and several others—such as the "cow dung" bacillus and the various organisms described as "milk" and "butter" bacilli—which probably also come from a vegetable source. The acid-fast properties of the Timothy grass bacilli and the others are due, of course, to the presence of a waxy substance in their body; and the elaboration of a complex organic substance of this nature from the grass on which they live affords an interesting instance of physiological activity in these low forms of vegetable life. Then, again, when we come to consider the probable sources of streptotricheal infection for the higher animals, and after taking into consideration the fact that most of the animals which have been found to suffer from streptotrichosis are domesticated animals with whose diseases we are especially familiar, the importance of herbage as a probable habitat of pathogenic ray fungi is very noticeable. With the exception of omnivorous man and the dog and a single case of infection in the cat, all the higher animals in which streptotrichoses have been described are strictly herbivorous. The probability of infection of swine by means of grain has been shown clearly; Johne was able to demonstrate the presence of ray fungi in awns of barley found impacted in the soft palate of the pig, and Korsak found grain covered with streptothrix organisms in the crypts of the tonsil of the same animal. Direct evidence of the possibility of infection of the ox in a similar way has been obtained, and the well-known case recorded by Soltman of a boy with a streptotrichial empyema of the chest, in the pus of which an awn of barley was found, may also be cited, together with several other cases of like nature which have been collected by Acland.

Omitting for the present any reference to conditions described as tuberculosis, streptothrix infections have been described in many species of animals. First, and merely as indicating the range of distribution of the streptotricheæ as parasites, it may be mentioned that I have on one occasion isolated a typical species from the body juices of an oyster. Ascending the scale, streptotrichosis of the liver has been recorded by Terni and Galli-Valerio in two species of lizards (*L. agilis* and *L. viridis*), and the parasite (*Streptothrix lacertæ*) has been isolated and described. Streptothrix infections have also been recorded in birds; and, in particular, Rossi has described fully a species which he isolated from two cases of streptotrichosis of the liver in chickens. Also Artault in a bacteriological investigation into poultry eggs isolated two species—an organism resembling Bollinger's original ray fungus and *Streptothrix nigra*.

Of mammalia other than man the following species are known to be liable to this kind of infection. Amongst domesticated animals the ox appears to be the most susceptible. In the common streptotrichosis of the tongue in this animal, apparently caused most frequently by the original ray fungus of Bollinger, clear evidence of the usual source of infection is forthcoming. If sections are made across the tongue in early stages of the disease numerous nodules, varying in size from that of a small pea upwards, will be found situated close to the dorsal surface. Often these nodules actually involve the mucous membrane, others will be found just below it, and the condition is one which obviously results from multiple infections through abrasions of the mucous membrane. But, beyond this evidence, various writers —Piana, Kouritsine, and Neuwith—state that they have demonstrated the presence of streptothrix organisms growing on fragments of grain which have become impacted in the mucous membrane of the tongue. The streptotrichosis in cattle due to infection by Nocard's organism has been observed apparently only by French veterinary pathologists, in France and in Guadeloupe and certain other tropical islands. In addition to these, two other species (*Streptothrix bovis alba* and *S. bovis luteo-rosea*) have been described by Gasparini as infecting the ox; a third species (*Streptothrix bovis sulphurea*) described by Rivolta is probably identical with the original ray fungus of Bollinger.

After the ox the pig is, of domesticated animals, probably the most frequently affected by this kind of disease. Besides infection by Bollinger's ray fungus, another form of streptotrichosis especially affecting the muscles has been ascribed by Hertwig, Duncker, and Virchow to a distinct species, *Streptothrix musculorum suis;* but, so far as I know, no detailed description of the parasite has been published. Heinick when investigating the normal bacteriological flora of the pig's intestine found streptothrix organisms amongst others. The horse also suffers from streptotrichoses; and a species closely resembling a type of streptothrix which infects man has been isolated by Dean from a submaxillary abscess. Sheep apparently suffer from streptotrichoses but rarely; infection of the tongue, however, and a generalised form of infection have been described, but there is no definite information available as to the characteristics of the sheep parasites. From a case of an apparently tuberculous disease of the lungs in a goat Silberschmidt isolated a well-differentiated acid-fast species, which does not correspond with any species yet found in other animals. On inoculation into the guinea-pig *Streptothrix capræ* causes a general infection with typically tuberculous lesions. A case of streptotrichosis of the liver in the stag has been recorded by Schreiber; and Nocard quotes Monfallat as having proved streptotrichosis of the jaw in the llama and in the guanaco of Chili. Schmorl has described an outbreak of disease caused by a parasite described as *Streptothrix cuniculi* amongst the rabbits kept in one particular pen in the Pathological Institute at Leipzig. And, to complete the list of herbivorous animals affected, a case of streptotrichosis in the elephant has been recorded. Except for a single case of streptotrichosis in the cat described by Rivolta, the dog is the only other mammal lower than man in which this kind of infection has been definitely proved. Rabe has recorded two cases, one apparently of suppurative cellulitis and the other a peritonitis, caused by a parasite termed *Cladothrix canis*, and similar streptotrichoses in the dog have been described by Rivolta and Vachetta; but the nature of the infecting organism in the particular cases is a little doubtful. I have, however, recently received from Captain A. Whitmore, of the Indian Medical Staff, a culture of a typical streptothrix which was the cause of fatal pneumonia in a fox terrier. The well-known occasional habit of grass-eating in the dog may possibly explain partly the liability to this kind of infection.

"1910 UNION OF MIDWIVES."—Miss Mary Macarthur, secretary of the Women's Trade Union League, presided on Feb. 19th over a meeting of registered midwives at Paddington, at which it was decided to form a "1910 Union of Midwives" for the purpose of raising the status of midwives throughout the United Kingdom and of organising the calling on a national basis. Mrs. Edith Robinson was elected the first president, Miss V. Macdonald was elected honorary secretary, and Mrs. Carnegie Williams was appointed to act as honorary treasurer *pro tem.*

An Address

ON

PULMONARY TUBERCULOSIS AND FAMILY PRACTICE.

Delivered before the Wimbledon and District Medical Society on Nov. 12th, 1909,

By H. BATTY SHAW, M.D. LOND., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, AND PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—The object of this address is not to repeat prescriptions for the various manifestations which follow in the wake of infection of the lungs with the bacillus of tuberculosis. When invited to deliver an address to this association it appeared fitting to try to appreciate the honour by giving in return not details which may be obtained at the expense of a little reading, but to call attention to some points which experience shows seem to have escaped the observation and attention of the family medical man. It is possible that some of the remarks that follow may rekindle or arouse feelings of antipathy towards the newer movement connected with the care of tuberculous patients. It is, however, necessary for us to recognise conditions as they exist, and if they cannot be altered they must be met by measures which are creditable to our profession.

THE ATTITUDE OF THE HOSPITALS TOWARDS TUBERCULOUS PATIENTS.

It is no purpose of the present address to trace the development of the treatment of pulmonary tuberculosis at special hospitals. The action of certain general hospitals in the past led to the exclusion of the "consumptive" patient from the wards. It is not to be wondered at that efforts were made to remedy this condition of affairs and that a group of hospitals devoted to various diseases of the chest, and more especially tuberculosis, soon grew up. These special hospitals need funds, and they must justify their position before the public. Payment by result is excellent in the abstract, but in the case of the tuberculous poor it has led to this most lamentable sequel—that advanced cases of pulmonary tuberculosis are not admitted but relegated to the Poor-law infirmaries, which are not large enough to cope with the work. The special hospitals whose duty it was, in the initial stages at any rate of their history, to provide asylum for such patients have had to relinquish their position. To attract funds it was necessary to be able to quote favourable results, and these can only be obtained in the treatment of early cases. Such cases alone can, under treatment, lose all symptoms, even all active signs and the expectoration of tubercle bacilli. Though a great deal is said against hospitals and their effect upon general practice, I think it must be conceded that their plight is to be pitied; the public has decided that such institutions should exist; the best must be got for money's worth, and it therefore follows that the cases most likely to be cured—viz., the early ones—must be admitted to the wards to the exclusion of more advanced cases. The glowing accounts of cure arouse enthusiasm on the part of the charitable, with the result that special hospitals are able to exist, though the anxiety of the gentlemen who control the management of such institutions is extreme and can never be completely known to the public, nor even to family practitioners.

But too large a number of the tuberculous patients are not in an early stage of the disease when they apply to special hospitals for in-patient treatment; they must attend as out-patients. Such a patient may be able to attend for years, working the while or being supported by his family; too often his attendances are few in number, for obvious evidence is forthcoming that the fatigue of the visits to the hospital is associated with risk, and the patient is advised to attend no longer. These out-patients, whose numbers are very large, come not only from London and its suburbs, but experience at the Brompton Hospital shows that they will come for an opinion, at least, from Glasgow, Edinburgh, Swansea, Bristol, and Dublin. Of course, there is no suggestion for a moment that these patients have come to obtain the advice of any individual physician attached to the hospital, but there is no doubt that a hospital devoted especially to such a study as that of tuberculous disease will catch the public eye, even in remote parts of the kingdom, and patients from such distances will continue to arrive. Is it possible to name any particular drugs which, used at special hospitals in the treatment of in- and out-patients, are followed by speedy or certain cure? Certainly not; fresh air, good feeding, and exemption from family cares do much for these cases; certain drugs increase the appetite or allay cough, and efforts are being made by vaccination to convince the profession of the utility of such a step. As you probably know, there is so much haziness of verdict that no definite answer can be given as yet on this latter point.

There are some matters that I venture to think are better attended to in our specialised hospitals than in the case of the patient who elects to attend a private medical man. To be very direct, I will ask how many of you can say that you give printed or written rules to your patients giving advice on the prevention of tuberculosis? This, however, is done by these special hospitals, and I am quite sure that a few shillings spent in supplying yourself with such rules for distribution amongst your patients would be followed by unmixed good to your patients and yourself.

But now special hospitals are taking other steps to justify their existence. Before a patient is said to be consumptive, the one certain test of the truth of the diagnosis is made—viz., the sputum is subjected to a microscopical examination, once only in positive cases, but repeatedly in doubtful suspect cases. So far as I know, the special hospitals do these microscopical examinations themselves; it even pays to run bacteriological laboratories; the public approves such laudable efforts to render diagnosis certain, and it loosens its purse-strings. Special sputum bottles are actually supplied to the patients, so that there is little excuse for negligence in bringing the sputum. Even sputum flasks are supplied to the poor at cost price, and popular lectures are given to the patients during their stay in the hospital on the nature and management of their disease.

Finally, one other step has been taken by the management of the special hospitals for tuberculosis, and in this direction the Brompton Hospital has taken a prominent place. It is no longer the one concern of the hospital to treat the affected patient, but it has now assumed the task of notifying the tuberculosis of any patient who gives assent, to the local medical officer of health. The local sanitary authorities who accept voluntary notification of pulmonary tuberculosis are those of Wimbledon, Kensington, Hammersmith, Fulham, Chelsea, Westminster, St. Marylebone, Hampstead, St. Pancras, Islington, Stoke Newington, Hackney, Holborn, Finsbury, the City, Southwark, Bermondsey, Lambeth, Wandsworth, Greenwich, Lewisham, Woolwich, and others. The medical officer of health is allowed after the medical examination of suspect tuberculous inmates of a house in which it is known a consumptive lives to send such suspect cases to the Brompton Hospital for further examination; this is known as the examination of "contact cases."

Then comes other after-care of the patients; they are helped from various charitable funds with food and even clothes. Whilst they are in the hospital their children are taken care of at home or boarded out; after leaving the hospital efforts are made to find for the patients more suitable employment. Such is a very brief survey of what a hospital does to impress the public that it is worth while to give it financial support.

The Attitude of the Family Medical Attendant towards Tuberculous Patients.

This is a matter upon which I cannot give entirely first-hand information. My observations are based mainly on the remarks of out-patients who have been advised by their private medical attendants to seek assistance at a hospital or who have been recommended by subscribers who have letters to dispose of—the proportion of these two groups of cases is shown by observation on out-patients at the Brompton Hospital; out of 281 consecutive observations 106 were recommended by medical men to come to the hospital and 175 cases came on lay recommendation. It is obvious that in thoroughness of detail and in the real assistance given, the patient of the private medical practitioner receives nothing like the attention that the same patient receives at the hospital. It is very rare to find that the sputum has been examined for tubercle bacilli; it is quite common to find that the patient has been treated for months by the family medical attendant before he sends the case to the hospital or before the patient's forbearance has given out and he has, independently of the medical attendant's advice, sought hospital relief; in the large majority of the cases neither the patient nor the patient's friends know what is the nature of the malady from which he suffers. When he becomes a hospital patient the diagnosis is speedily made; he is told that tubercle bacilli are present in the sputum as soon as the expectoration gives positive results and is given printed rules to prevent the spread of tuberculosis.

I am quite certain that one of the difficulties which underlie the dissatisfaction of the general practitioner at the attitude of a hospital which gives itself heart and soul to pushing on developments in the management of tuberculosis of the lungs is this very logical behaviour of hospital authorities; they must exist, and they must earn subscriptions, whatever general practitioners say or do. But the same logical standpoint is taken up by practitioners, and they quite commonly say we cannot afford to take the trouble over the consumptive poor who cannot pay even moderate fees, nor can we take as much care of patients who can pay larger fees as we can of richer ones who pay very well. Moreover, as some of you will tell me, the poor are not grateful for your present of rules which if carried out would upset the home, entail further expense, and even lead to their dismissal from work, supposing their employers learn that they have consumption.

Another difficulty comes in in this way, that charitable institutions, public bodies elected by the people, charitable organisations, and charitable subscribers will have, they say, *the best* advice for the poor; with them there is no cutting the coat according to the cloth. Now, gentlemen, I am not romancing when I refer to these statements as emanating from such institutions. I can vouch for them as I have heard them uttered. I mention them to you to-night not to annoy you or to increase the mixed feelings you have with regard to hospitals, but to warn you that in the matter of pulmonary tuberculosis, and I regret to say in other directions such as the management of refractive errors, of ear trouble, adenoids, &c., you are no longer considered to be quite up to the mark. These statements have been publicly uttered by members of our profession whose experience has taught them the lamentable truth, and they are repeated by laymen and laywomen who, having collected funds for the relief of the poor, insist on getting the best value for their money. The latter will not recommend their cases to you who may not live far from this or that poor neighbourhood, but prefer to send such cases for examination and treatment to a specially trained dispensary doctor, appointed for the purpose and housed and paid a good salary, or to a large hospital. These are some facts that are not pleasant hearing, to no one of you more than to your present lecturer.

In pursuing the rôle of candid friend it is very regrettable to have to say that I think some general practitioners must be so deluged with occupations that they cannot keep abreast with the times, or they are out of sympathy, or they are indifferent, and will not learn lessons which are different from those taught to them as students. Quite recently an otherwise very able practitioner hesitated about having the sputum of his "bronchitic" (?) patient examined. Even if tubercle bacilli were present, "what difference did it make to the patient?" I glanced at the windows all closely shut, at the large fire, and I had already remarked on the very strongly benzoin-laden atmosphere. Now this patient had been treated in such a way for weeks, the sputum never had been examined, a soap-dish containing water only was fully charged with expectoration, which was subsequently proved to be teeming with tubercle bacilli. It rather terrifies one to think of the risk of contracting tuberculosis to young housemaids attending upon this lady.

But now there comes another class of general practitioner who is not ignorant, not indifferent, not one who is too sensitive to putting his patient to endless trouble and expense, but one whose philosophic view of medicine and life generally is so broad that he hesitates to cause any distress to the patients or relatives by allowing the least risk of the truth of the diagnosis being known. One can even sympathise with such a character as this, for the old sinister meaning of tuberculosis of the lungs still terrifies many. But surely such ideas should be dispelled, the possibility of cure should be insisted upon, or if this is not likely, the patient may be encouraged in the belief that life may still last through many useful and even happy years. But this old-world physician fails in another direction in that he allows the patient to infect others; although concealing the nature of the malady he knows that it is tuberculosis which is destroying the patient. The days are gone for such a view of the proper attitude towards consumptive patients. Even if hospitals did not betray the faulty motives and methods of work of some general practitioners the daily press will, the notice "Do not spit" in your tube railways, omnibuses, and trams will, and active and increasingly large brotherhoods and sisterhoods of workers amongst the poor, health officers and others visiting the poor, will complete their downfall.

I should be the last one to say that no general practitioner treats the tuberculosis of his patients on modern lines, or assumes the modern attitude towards the problem of stamping out tuberculosis by prevention. But it is common knowledge that not only the very poor who can scarcely pay you to look after them, but those who could easily pay you, seek aid at the hospitals and are treated. It is useless to ask what our inquiry officers are doing, because they could not be expected to discover the financial position of a patient living, as I have already said, some hundreds of miles, or even much less a distance, from London. Moreover, the patients who could pay, say it is not a question of mere money, but that "my local doctor has never given me the advice or taken that care in instruction and treatment which I can receive at a hospital."

Could any spectacle be more deplorable than what exists in our midst? On the one hand are the public hospitals with all their possessions of charitable gifts and donations from the various hospital funds, their practised physicians and pathologists, and nursing staffs; moreover, with their alert business-like committees of management. These are offered to the public who may be suffering from consumption. If the patient has early disease, or if whilst an in-patient in the hospital, he gives evidence of great curability, still further boons are offered, and he may be drafted off to a sanatorium not to be converted into a confirmed invalid for the rest of his days, but to leave the institution fit to do hard bodily work. Such a patient must allow examination by a class of students; he may have to wait hours before his visit to the hospital is completed; after notification he may be obliged to have his home inspected and cleaned, &c., by local sanitary authorities, and even some cases have had to suffer dismissal from their employment when the true nature of their disease had been discovered. But not one nor even all these drawbacks prevent these patients who could pay your fees from coming to the hospitals. The feeling of prejudice against receiving help from hospitals is vanishing, or has vanished. Why should people hesitate to accept the help of charitable institutions if they are officered by acknowledged experts and if the funds by which they are maintained have the stamp of approval of Royal patronage and encouragement?

In my opinion, you have still another rival. I have referred to the class already; I mean that increasing class of women, wives or daughters of rich and leisured families, who spend their lives in "good works." Once they used to confine themselves to presenting the patients with flowers, or to reading or talking to them. Now, however, they are much more militant, and as workers under the various charitable associations they carry their interests in the welfare of hospital patients into the very homes of the latter; they become "home visitors," "health visitors," and I am told that quite a number of women of less fortunate position earn their living by such work, and receive from some body certificates of having passed examinations in subjects connected with hygiene, medicine, surgery, and midwifery, &c.

So much for what public interest is doing for people of London who *could* pay something for *your* help. On the other side of the lists you, gentlemen, stand, all possessed of qualifications which pass muster before the General Medical Council, many of you possessed of degrees and qualifications which are amongst the best in the world. And what of experience? Even in this particular you are recognised as most able men, more trustworthy than many of our continental *confrères* of the same class. The struggles that I witness amongst my general practitioner friends make me feel that much of the pleasure of our intellectual profession is taken away by the struggle for existence. Many of our less fortunate colleagues are broken on the wheel, or if too hardy for that are so embittered that they are a source of distress to their relatives and friends.

Not one of us here to-night will for a moment say that such sad pictures are necessarily due to our hospital system: there is room for reform elsewhere; no doubt our profession is overcrowded, especially in and about our large towns and cities; no doubt, too, the public generally have of late years become very sceptical of our powers of "curing"; they acknowledge that we can find out causes if we will but take the trouble, but when the question of a cure is raised, and the methods of cure, one can almost understand that our profession falls far short of the standard a trustful public expected to find in us. But we would learn more if we could. No one is more cognisant of our shortcomings in knowledge than we ourselves, and after all what does the Government of this country do to encourage medical investigation? Such work is left to us to do ourselves out of our own pockets or with the assistance given by a City Company or generous donor, or out of the fees which we ask of the public when they are obliged to seek our help.

THE REMEDY: POST-GRADUATE STUDY IN LONDON.

To come to you and merely repeat what you already have learnt to your cost, merely to join in the wail of lament which our profession constantly sends up, is no purpose of mine. Nor do I propose to offer gentle advice to you to sit down and be patient. I have no hesitation whatever in saying that I think the solution of the general practitioner's grievance can be found. You must fight the rival—a rival, mind you, which exists as an element in the competitive principle which pervades all life, all natures, and all classes of individuals—by using that rival's methods. 1. You must give some time regularly to post-graduate study, either in your old hospital or at some other. You will thus learn how clinicians and pathologists are taking different views of the problems which faced you as a student. 2. You should ally yourselves with local charitable organisations, gain the sympathy and assistance of the local clergy, and find, as hospitals do, occupation for so many of our women, married and single, in exchange for the vapid existences which they have to lead.

Does it exist? Yes; for years now the younger medical men of our colonies have been coming to our country to complete their education and to broaden their knowledge and experience. I have met many of these gentlemen, and I have rarely found that any one of them has failed in his objective. No doubt in a large proportion of these cases they have merely come to seek more letters of qualification, but even then they have no doubt of other real gains. Many others, and they are men who come from the best of our colonial universities, do not seek mere examination triumphs; they come for knowledge. It is the experience of some of us to spend some of our holidays in foreign towns, and there are few of us who can resist the temptation to visit local hospitals. One of the most striking of our experiences is how deeply post-graduate instruction has ingrained itself in continental thought. Men past middle life will spend their short holidays in further work in the wards and laboratories; as with us in this country young men from all countries will be found prosecuting further studies. There is much food for thought in this spectacle, the young men of all countries are keen on gaining knowledge in places other than their "alma mater"; abroad, men who are well established in practice do not hesitate to sacrifice holidays to doing post-graduate work and attending congresses. How different it is with the majority of general practitioners in our country when once they have settled down to practise. No doubt many of you are able to freshen yourselves in local hospitals of your own, but our recently qualified students who have held resident posts in provincial or suburban hospitals have tales to tell us of want of modern knowledge on the part of members of the staff and, worse still, because it is less easily remedied, they tell us of a want of enthusiasm and of faith that medicine and surgery will advance to better things if only we will think and act on our thoughts.

Post-graduate study amongst general practitioners in this country is in a very bad way. But it is not all your fault, the fault has been in your hospitals, for they have not hitherto catered for you in post-graduate study. Indeed, I have heard a churlish consultant say that he saw no point in giving his knowledge and experience to men who would go away and use it to their own advantage. They have not prepared short, pithy courses in subjects which have advanced beyond the conception current in your student days. These sad times are now over; several hospitals in London have now prepared most elaborate courses, well chosen, held at convenient hours not only during vacations but during terms, restricted to post-graduates only, and illustrated by actual cases. A small charge is made, well within the reach of every practitioner. I come to you to-night to ask you to bestir yourselves now to support the efforts which your old schools are making for your benefit. Expert as you may have been as students in clinical investigations, I am quite sure you will find you have forgotten much, or that much has been learnt since you were students.

But there is another form of post-graduate study which some of you have never had: I refer to post-graduate instruction in clinical pathology. There can be no doubt about it that you are uninformed in this direction, and it is equally truc that you are not wise in neglecting this study. There is no reason why the spare half-crowns which go to various private clinical research associations should not go into your own pockets. A little more outlay in setting up a small laboratory would repay the sacrifice and provide each general practitioner with that zest which comes when you get closer to the enemy—the causes of disease. If you are too busy to do the work yourself it is not difficult to train a handy dispenser; now that so many of them are women there should be still greater ease in getting rather delicate observations carried out. If you would only carry out these investigations yourselves you would have less reason for believing that practice is slipping quickly away from those of you whose day as students antedated these developments. You would, moreover, be borrowing just one of those suggestions from hospitals which adopted by them have made them more attractive. Moreover, it is possible for you to borrow still further from these institutions. Have small sheets of rules for the prevention of tuberculosis distributed among your tuberculous patients; the cost is very small and the impression given by your thoughtfulness would be admirable; and further, have short talks with the heads of the families concerned on the prevention of tuberculosis.

Now I come to two other points: again I advise you to follow the hospital pattern. I would beg of you to visit the wards of a hospital for consumption, and especially of a sanatorium; do not go once but repeatedly, and watch what is being done in the way of carrying out the details of treatment—the permanent stay in bed while there is fever, the regular sleeps the patients have during the day, the nature of the diet, and above all the measures taken to prevent the disease spreading to the nursing and medical staff. The revelations you will meet with at the Frimley Sanatorium will be even greater than in the parent hospital. You will almost be inclined to laugh at the farce of keeping such healthy looking patients in any sanatorium. You must, however, realise that such appearance is not the cause but the result of the treatment carried out by the resident medical officer, Dr. M. S. Paterson. The principle of this treatment is a practical outcome of the effort to turn out tuberculous patients from a sanatorium, not hypochondriacal, timid invalids, but useful workers, who can go back to their homes often cured, and if not cured braced up by a system of exercise in manual work which has been developed to a fine art. If you will spend time at such institutions you will learn what your patients have learned; if they can teach you they will not call you in to look after them on their return home. You will have lost such patients. Can you wonder? It has been said by a colleague if the general practitioner would use the modern methods of management of pulmonary tuberculosis and would diagnose such cases in an early stage, hospitals and sanatoriums for their treatment would be unnecessary. No doubt there is much truth in this, but not the whole, because I gather that it is practically impossible to get the poorer class patients to carry out rules designed to cure this disease or prevent its spread to others, *unless they have lived in a hospital or sanatorium to learn to discipline themselves.* If you will do post-graduate work you will learn what cases can be admitted to hospitals and sanatoriums, and by availing yourselves of their help when your patients are in an early curable condition you will reduce the number of patients who come to us merely to learn that they are "too advanced for help."

CHARITABLE ASSISTANCE.

The last suggestion I would make to you is to make yourselves familiar with all the steps which must be taken if you want to secure the help, say, of the Hospital Sunday and Saturday Funds, of that magnificently organised body known as the Charity Organisation Society, and of various other societies for obtaining convalescent home letters. If you will fraternise with the local clergy your difficulty in this direction will be greatly reduced, and if you will purchase for the sum of 5*s.* the Annual Charities Register and Digest, edited by Mr. C. S. Loch, you will be enabled to do for your patients more than you have done in the past.

I must now draw my remarks to a conclusion. Possibly in your cases I have brought coals to Newcastle. I may have hurt some of your feelings, but this I will beg you to believe, that in putting these remarks on pulmonary tuberculosis and family practice before you I have done so with the definite purpose of helping you without wishing to damage our hospitals. It must be the hospitals which develop new ideas, to you falls the duty of applying those which are successful. My great fear—one which I want to help to dispel—is that general practitioners should suspect that hospitals are the enemies of the general practitioner. If they are it is not so by intention, and you are quite free, if you wish, to borrow their methods.

A Demonstration
ON
CASES OF MENTAL DISORDER

At the Medical Graduates' College and Polyclinic on Feb. 9th, 1910,

BY CHARLES A. MERCIER, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN FOR MENTAL DISEASE, CHARING CROSS HOSPITAL; LECTURER ON INSANITY, CHARING CROSS HOSPITAL MEDICAL SCHOOL.

GENTLEMEN,—The cases that I am about to demonstrate to you are cases of mental disorder, but not cases of insanity. Mental disorder and insanity are commonly supposed to be synonymous, but they are not so. There are several criteria which distinguish them, but for the moment we may confine ourselves to this one—that the persons who will explain to you to-day their mental disorders are perfectly well aware that their minds are disordered. What morbid feelings and morbid percepts they experience they know to be morbid. While the mental states are real, the patients recognise that they do not correspond with fact, and as long as that recognition is maintained there is no insanity.

This man, who, you see, is about 50 years of age, is a Hebrew. His brother is in a lunatic asylum, and he has had some trouble with his family, who have charged him also with being out of his mind. Since this charge was made against him, he has been much troubled by what he calls "suggestions" made to him by various noises—the barking of dogs, the chirruping of birds, the clashing of crockery, and the rumbling of vehicles in the streets. All these noises suggest to him the words "Jew," and "mad Jew." It is not that the birds or the dogs actually say the words. He laughs, as you see, at the notion that birds or dogs can talk, still more that the clashing of crockery or the rumbling of carts on gravel can resemble the utterance of words; but these noises do in some mysterious way "suggest" to him the opprobrious words "mad Jew," which accordingly arise in his mind whenever he hears the noises, and the suggestion is a source of great distress to him. This, gentlemen, is a case in which you can actually witness hallucinations of hearing in the making. They are not yet hallucinations, for he recognises, and states quite clearly, that he does not hear the words. He knows, and states plainly, that the sound of the words is in his own mind alone, and is not uttered by anything or anybody in the world outside him. But the words are irresistibly suggested by the external noises. It is but a step—a long step, and a grave step, but still but a step—from this attitude of mind to the attitude that the words are actually uttered, and that he not only thinks of them but actually hears them when the noises occur. So long as he is aware, and remains convinced, that the words are in his own mind alone, so long the question of his insanity does not arise; but if he should take the view that the words are really uttered by someone else, the malady would pass the bounds of sanity. Fortunately, there is no reason to expect such a result. Already, under treatment, the suggestion is less imperative He tells you now the barking of a dog sounds to him as "bow-wow," and no longer as "jew-jew," and the chirruping of birds is more like "jip-jip" than "jew-jew." He can even, as you see, take a humorous view of the matter, and laugh at the notion that they really say such things.

The boy I now show you is suffering from tumour of the brain. Of the three classical symptoms of such a tumour—headache, vomiting, and optic neuritis—he presents but one—headache. He has had purposeless vomiting on a few occasions, but for practical purposes his only symptom was headache. But this headache was of a character that is not seen at his age—about 8 when I first saw him—except in organic disease of the brain. It occurred every day of his life. It was practically continuous, and it was so severe as to be utterly incapacitating. He could neither work nor play. He spent the greater part of every day lying down. And in addition he had, in very well characterised degree, that peculiar expression, of dazed bewilderment combined with suffering, that constitutes the *cerebral facies*, and is not seen except in organic disease of the brain. At his age, a cerebral tumour is more likely to be tubercular than of any other composition, and I thought it worth while to treat him with tuberculin. From the month in which this treatment was begun the boy has continued slowly to mend. From suffering from incapacitating headaches nearly all day every day in the week, he now averages one severe headache and two slight headaches per week. This improvement has been very slow. He has now been taking tuberculin for 18 months, but it has been very steady, and is now become very decided; and I think it may fairly be ascribed to the tuberculin. The case is not one of mental disorder, but as it is the only case in my experience in which a non-syphilitic cerebral tumour has been relieved by medical measures, I thought it would be of interest.

The young man now before you suffers from a peculiar form of vertigo which is so discrepant from all the classical forms of that troublesome malady that I had at first grave doubts of its genuineness. Careful inquiry and prolonged observation have convinced me that it is genuine. He calls it giddiness, but the feeling he experiences is that of loss of support. If he is sitting down, the chair seems to be sinking from beneath him. If he is standing or walking, the floor or the ground seems to be giving way and letting him down. It is pronounced at twilight and in the dark, and on several occasions, so he says, he has actually fallen down. It is also aggravated after meals, and he suffers very much from dyspepsia, and this combination led to the surmise that it might be a case of Charcot's *vertige stomachale*, but though his dyspepsia has yielded to treatment, the feeling of sinking has not diminished, and since the dyspepsia has been relieved he has had one or two falls. The sensation of the giving way of the support beneath one is not unfamiliar to most people as they are falling off to sleep; and this again comes into line with the similarity of many delusions to dreams; so that I should be afraid that there is in this case some subtle disorder of cerebral function allied to that which occurs in delusion, and which is for the most part beyond the reach of our remedies.

This young woman presents an ordinary case of mental depression. She came to me two years ago on the same account. She was miserable with an uncalled-for misery which was not justified by anything in the circumstances of her life. She also suffered from incapacitating headaches. She is blind of one eye and has some hypermetropia in the other, and was in the habit of doing a good deal of needlework by artificial light This was quite enough to account for her headaches, and when the eyestrain was abolished by appropriate glasses, her headaches disappeared. Under appropriate treatment her depression also was relieved, and she has remained well until now. She has no delusion; she is merely miserable without knowing why or wherefore. I need not say that depression in itself is no indication of mental disorder; there are circumstances under which it would be morbid for a person not to be depressed. If a man has lost all his money, if his sons have disgraced him, his daughters are gone on the streets, and his wife has run away from him, and if he is in addition suffering from cancer of the tongue, it would show a morbid state of mind if he were boisterously happy. Morbid depression is depression without the justification of depressing circumstances, and that is the depression from which this poor woman suffers. What exactly is the cause of such unjustified depression we do not know. All we know is that there are persons who are peculiarly subject to it, and that there are others who seem to be immune from it. In those who are prone to it we can often trace any particular attack to some provoking occasion—to a shock of grief, or terror, or to the strain of anxiety, or some other stress; but often, as in this case, we can find no provocative occasion. In such cases we are apt to speculate upon the existence of a toxin; but though there are cases in which this hypothesis seems plausible, there are many in which nothing of the kind can be even plausibly supposed.

The woman you now see is infested with lice. They are of two kinds, grey lice and yellow lice, and they infest not only her scalp but her whole body. They bore holes in her back and swarm out of her spine. She finds them in her urine, in her clothes, in her hair, and everywhere about her. She will remind you of the woman I showed here last year, who was infested by a rat. That patient borrowed a dog from a rat-catcher, stripped, and got into a bath, leaving her clothes for the dog to investigate; but on resuming her garments the rat was still there. By appropriate treatment the rat was got rid of, and the manner of its disappearance is noteworthy. When she was shown here it had diminished to the size of a mouse. It continued to dwindle till it became no larger than a black-beetle, and at length no larger than a fly; and as I have not seen her for some months I suppose it has now disappeared altogether. Under the agitation of seeing you the lice have reappeared in this patient, but for some weeks they have been gradually diminishing. The yellow lice have disappeared altogether, and only the grey are left, and this morning even the grey were limited to her ankles, with an occasional excursion as far as her knees. I am sorry to find that this afternoon they are again in her scalp, but that, I trust, is but a temporary excursion.

PERICARDIAL EFFUSION: ITS DIAGNOSIS AND TREATMENT.[1]

By SAMUEL WEST, M D. Oxon., F.R.C.P. Lond.,

PHYSICIAN TO, AND LECTURER ON MEDICINE AT, ST. BARTHOLOMEW'S HOSPITAL.

In opening the discussion on pericardial effusion I am asked to draw attention to the limitations imposed—viz., that it must deal with cases in which the diagnosis is certain and established by post-mortem examination or operation. Though this restriction must be strictly observed in the spirit, cases which have recovered without operation can hardly be absolutely excluded provided the diagnosis is not open to question. Still, speakers are requested not to take undue advantage of the license thus accorded.

I presume that except in purulent pericarditis the effusions must be of considerable size. Purulent pericardial effusions may be small, but their early diagnosis is important. Large pericardial effusions are for the most part serous, some are hæmorrhagic, and some are purulent. Hæmorrhagic effusions are rare.

In hæmopericardium where the effusion is pure blood the hæmorrhage is usually due to traumatic laceration of the heart or of some large vessel within the pericardium, or if consequent on disease to the bursting of an aneurysm at the root of the aorta, or to rupture of the heart itself. Another group of cases is recorded as met with in the course of scurvy, mostly from Russia and East German sources. No instance of this kind, as far as I know, has been reported from this country.

---

[1] An introduction to the discussion on the subject at the Medical Section of the Royal Society of Medicine on Feb. 22nd, 1910.

A few cases are recorded in association with tubercle or new growth, but here, again, I think the cause of the hæmorrhage is to be sought in gross lesions of a large vessel or the heart. Blood-stained fluid as distinguished from pure blood is not so rare, though still rare enough. As in the pleura, it is usually associated with tubercle or new growth.

With granular kidney pericarditis is not uncommon, but usually with little or no effusion and often with few symptoms. Sometimes the effusion is large. It may contain a considerable amount of blood or even be pure blood. Hæmorrhagic effusion of any kind in granular kidney is rare enough for every case to be recorded, even if it has been moderate in amount or discovered only at the necropsy.[2]

For the purposes of this discussion it will be well to focus attention upon the two commonest forms—viz., (1) large serous effusion; and (2) purulent effusions, large and small.

Serous Pericardial Effusion.

These cases may be placed in two groups, the inflammatory and the non-inflammatory or dropsical. Small amounts of serous fluid are commonly found in the pericardial sac post mortem and are probably produced in the process of dying, but in general dropsy the amount may be larger and reach several ounces. Large dropsical effusions may occur in connexion with mediastinal new growth. It is only these that are likely to produce symptoms, and then mechanically owing to their size. With these exceptions serous pericardial effusion is usually inflammatory in origin and occurs in the course of rheumatic fever, to which disease nearly all cases of so-called primary pericarditis with serous effusion are to be referred. These rheumatic cases form the most convenient group for discussion, especially as in them the gradual development of the effusion may be watched and studied.

The Physical Signs of Pericardial Effusion.

One of the earliest results of pericarditis is general dilatation of the heart. The cause of the dilatation is simple. The visceral layer of the pericardium is a thin membrane covering the surface, attached to and continuous with the fibrous meshwork of the myocardium, which carry the blood-vessels and lymphatics and within the meshes of which the muscular bundles lie. The inflammation of the visceral pericardium must necessarily involve, therefore, this intermuscular meshwork and affect the muscular tissue adjacent to it. Thus with every pericarditis there must be more or less of myocarditis associated, and consequently of cardiac weakness, which will show itself in dilatation. The degree of myocarditis varies, and may be considerable even where the pericarditis itself seems slight, but is certain to be considerable when the pericarditis is severe.

When pericarditis sets in one of the earliest physical signs is an increase of the cardiac dulness outwards and upwards on the left side along the third left space or rib. This leads to the disappearance of the cardio-mediastinal notch described by Sibson and named after him *Sibson's notch*. This widening of the cardiac dulness at the left base is often given as a sign of pericardial effusion, but I do not think this is correct, for it is often seen in cases of pericarditis where no other signs of fluid occur, as well as in other forms of heart lesion where there is no pericarditis at all. It is, I believe, due to dilatation of the left auricle, which is so much thinner than the ventricle, that the same amount of inflammation spreading into it from the pericardium would produce a much greater effect upon the ventricle, and therefore lead to earlier dilatation.

Another early sign is the disappearance of the cardiohepatic notch on the right side called *Rotch's notch or angle*. Rotch's notch is difficult to make out satisfactorily in health, even by those who are skilful in percussion. Moreover, it is not constant and its disappearance is not conclusive of pericardial effusion. In pericarditis it is, I believe, due to early dilatation of the right auricle just like that of the left auricle in the former case.

Both Sibson's notch and Rotch's notch acquired their chief importance from the results of experimental injections into the pericardium. These injections were made when the body was lying flat upon the back, but the results of these injections vary, as would be anticipated, with the position of the body; this has been clearly demonstrated by Aposti and Figaroli.[3] Neither of these signs, then, is of much practical value as signs of fluid and as distinguishing effusion from dilatation.

Another reason given for both these signs is that the heart sinks in the serous fluid, so that in the recumbent position it would sink away from the sternum and ribs in these places and allow the fluid to float up into them. It is quite true that the heart when removed from the body full of blood will sink in serum, but it must be remembered that the heart is not quite free to move in the chest, but is attached at the base by the great vessels, and at the diaphragm by the vena cava. When the pericardium becomes distended with fluid the heart does fall away from the front of the chest, but least of all at the places named. The distension of the sac upwards at the base draws with it the big vessels and the heart with them. This is a part explanation, at any rate, of the rising of the apex beat from the fifth to the fourth space, which is also given as an early sign of effusion. As the distension increases it pushes back the lungs from the front on both sides, right and left, and so the area of cardiac dulness rapidly increases in all directions.

If the dulness downwards and outwards to the left can be shown to extend distinctly beyond the place where the apex of the heart is located this is one of the most conclusive signs of effusion, but though it is easy to fix by percussion the extent of the pericardial dulness it is not always easy to fix the exact position of the apex either by palpation or auscultation. If the amount of fluid be very large indeed it may thrust the diaphragm down and the left lobe of the liver with it so that there may be a distinct bulging or prominence in the epigastrium in which pulsation may be felt (Auenbrugger's sign). But, on the other hand, in some cases, as in one I recorded, there may be distinct epigastric depression.[4] These epigastric signs, though very obvious when the effusion is very large, cannot be distinguished in smaller effusions from somewhat similar signs seen where the right side of the heart is greatly distended.

Systolic recession of the epigastrium is sometimes very striking where the effusion is large, and so far may distinguish effusion from dilatation of the right side of the heart, where the systole is usually associated with protrusion and not with recession; but I have seen systolic recession in the epigastrium well marked with adherent pericardium, and I believe it occurs also without either pericardial adhesion or effusion in some cases of dilated right ventricle.

Distension of the pericardial sac by effusion will, of course, produce great increase in the size of the præcordial dulness. When a sac becomes distended it tends to assume a globular shape, unless prevented in some way. There are three directions where the distension is somewhat restricted—viz., the base where the pericardium has its attachment to the mediastinum, in front where it is in contact with the walls of the thorax, and below where it lies on the central tendon of the diaphragm. The increase, therefore, will be most marked transversely, and may be sometimes described as enormous. Thus in a recent case in a young man the dulness reached from two inches outside the right nipple line to four inches outside the left, and the transverse measurement was about ten inches. The præcordial dulness is often described as pear-shaped, and importance is attached by some writers to the shape in the diagnosis between pericardial effusion and dilatation of the heart. Statements differ as to the direction of the stalk of the pear, some placing it upwards at the base, others downwards at the apex, others asserting that in the smaller effusions it points upwards, in the larger effusions downwards. As a matter of fact, these descriptions are more or less fanciful and are of no help in diagnosis.

Two other signs are yielded by percussion. The one is called Bamberger's sign and has been also described by Ewart. This is a small quadrilateral patch of dulness in the left interscapular space. The other is dulness over the lower lobe of the left lung posteriorly. This, however, is common enough in morbus cordis where a dilated left auricle presses upon the root of the left lung, or where a greatly dilated left ventricle compresses the lower lobe of the lung directly.

---

[2] Records of 12 cases collected by F. Bryant, Boston Medical Journal, clii., 18.

[3] Centralblatt für Innere Medicin, 1900, No. 29.

[4] West: Transactions of the Royal Medical and Chirurgical Society, vol. lxvi., p. 252. Clifford Allbutt: THE LANCET, Jan. 27th, 1882.

Even if these two signs were of any special value they would be of little practical use, as a patient with a large pericardial effusion is, as a rule, too ill to bear the necessary physical examination.

Of the auscultation signs, there is something to be said upon the subject of friction. It is often stated that the friction which has been present at first disappears as effusion forms and returns as the effusion is absorbed. This is true in a general way, but requires qualification. It is correct of friction at the apex, but not of friction at the base or along the sternum. It is asserted that it must necessarily be so because friction can only occur when the two layers of the pericardium are in contact, and as in the recumbent position when effusion forms the heart sinks away from the front, so the two layers must be separated, while if the patient be sat up and made to bend forward the friction which was absent in the recumbent position may become audible again. However, it is a fact that, even in the recumbent position and with a large effusion, friction at the base may be very loud. Whatever explanation of this may be given the fact should be more generally recognised, for too emphatic insistence upon the absence of friction may lead to mistakes in diagnosis.

I recall one case in which the diagnosis lay between a large pericardial effusion and a mediastinal new growth involving the pericardium. Decision was given against pericardial effusion because of the loud friction which was heard over a wide area of the præcordial dulness at the base and along the middle of the sternum. Paracentesis was not performed. The patient died and nothing was found at the necropsy but serous effusion in an unthickened pericardial sac. The life, I believe, might have been saved by paracentesis. I may remark in passing that double aortic disease with a greatly dilated left ventricle may for a time closely resemble pericardial effusion with friction, though soon the diagnosis becomes clear. The heart sounds, as would be expected, are muffled, faint, or almost absent. Yet this is not conclusive, for as great muffling and weakness may be observed in cases of extreme dilatation.

It may be taken for granted that the intrapericardial pressure in effusion is considerable, but I do not know of any manometric observations by which the actual pressure has been measured. In a large purulent pericardial effusion which was opened I have seen the pus ejected from the incision for several inches in a forcible jet. Fluid under such pressure ought seriously to embarrass the heart, for it would especially interfere with diastole, especially that of the auricles. Consequently we should expect the cervical veins to be distended and to pulsate and a certain amount of cyanosis to be present. The action of the ventricles should be interfered with also, so that the pulse would be small and probably irregular. That, of course, is so. Yet it is extraordinary how little the mere mechanical conditions often seem to affect the heart's action and how little cardiac distress even a large effusion may be associated with. This would suggest that when the cardiac distress is great there is some other factor to account for it. This factor is, I believe, the myocardial change associated with the pericarditis to which I have already referred.

In all descriptions of the pulse in pericarditis the pulsus paradoxus, or pulsus cum inspiratione intermittens, is mentioned. Yet in pericardial effusion the pulsus paradoxus is rare, and when met with is not due to pericarditis or to effusion—i.e., to nothing within the pericardium, but to changes outside the pericardium in the mediastinum—i.e., to what is called mediastino-pericarditis or, better, mediastinitis fibrosa. The pulsus paradoxus is not, in my opinion, merely an extreme form of the respiratory curve of the pulse. If it were, it ought to be frequently met with in weak hearts, and it is not. It is due to a band or adhesion so situated that as the chest expands on inspiration the aorta is pinched and the circulation through it so far impeded that the pulse is not produced. Any way, the true pulsus paradoxus—i.e., where the pulse beat entirely disappears during inspiration—is a very rare phenomenon in pericarditis.

Empyema pulsans is that peculiar form of empyema in which the impulse of the heart is conveyed through the empyema to the chest wall in such a way as to be seen or felt. It might be anticipated that such impulse would be frequent in pericardial effusion. But it is practically unknown. If anything be felt at all it is but in diffuse shock of an indefinite kind, but often even this is absent, except, perhaps, in the epigastrium.

In general symptoms there is nothing characteristic. The patients are sometimes dusky, and may be cyanosed, but extreme pallor is more frequent than cyanosis.

Patients prefer the semi-recumbent position on the back with the shoulders raised, the object being, as in other forms of heart disease, to throw the weight off the rest of the lungs on to the tendinous portion of the diaphragm, as well as to give free play to the lungs. There is nothing in the appearance of the patient, the decubitus, the dyspnœa, or general condition which can be considered characteristic of pericardial effusion—i.e., nothing which is not met with in morbus cordis or allied conditions.

In respect of the symptoms there is one general statement which may be made—viz., that the more rapid the development of the effusion the more severe the symptoms are likely to be. In other words, a large effusion which has taken some little time to form, so that the heart and lungs have had time to adjust themselves, may be attended with much less distress than a much smaller effusion which has formed rapidly and has not given so much time for compensation. Thus a sudden hæmorrhage into the pericardium may cause death in a few minutes, not from the loss of blood but from cardiac syncope or shock. On the other hand, even with acute effusion in rheumatic fever, if the effusion has taken some days to develop, as it often does, the symptoms may be much less severe than might be expected, and in some chronic effusions even of great size it is the physical signs rather than the patients' distress that attract attention.

Diagnosis.

It is from dilatation of the heart generally that pericardial effusion has to be distinguished, for though under ordinary circumstances no confusion is likely to arise, yet between extreme cardiac dilatation and a large pericardial effusion mistakes in diagnosis are by no means unlikely, as the records of paracentesis pericardii show. I have on many occasions been asked to tap the pericardium in cases in which I thought, as the course showed, there was really nothing but dilatation present. To puncture the pericardium is an innocent proceeding, but to puncture a greatly dilated, and therefore thin-walled, heart is very risky, and has often proved fatal. It is not the mere puncture, provided the needle goes right through the wall, but the laceration produced by the movement of the heart upon the point of the needle.

The diagnosis rests entirely on physical signs, for, as has been stated, there is nothing in the general condition or symptoms of the patient which is characteristic, though when the patient has been under observation, so that the development of the effusion has been watched, the diagnosis is easy. The most conclusive sign is given by percussion, for though there is nothing characteristic in the shape of the pericardial dulness, still, if the dulness can be shown to extend distinctly to the left and downwards beyond where the apex of the heart is located the diagnosis is certain. With dilatation the impulse can usually be made out as far as the dulness extends at the apex, and there is often a wavy impulse to be seen and felt in the left intercostal spaces above, unless the action of the heart be extremely feeble, as it may be where the dilatation is extreme. The sounds also, though weak in both cases, may be completely absent with pericardial effusion, except perhaps at the base, while with dilatation they are generally audible to some extent even down to the apex. The epigastrium may be prominent in both cases, but the prominence is more marked in large effusions, and while in pericardial effusion there is often systolic recession, in dilatation there is mostly systolic protrusion. Time aids largely in the diagnosis, for though when first seen the dilated heart may be so feeble that its beating is hardly to be detected, it soon recovers itself sufficiently to make the diagnosis clear. As the cases are rarely so urgent as to require immediate operation it is safe to wait awhile, and in a very short time what has been obscure may become plain. I have not myself had the misfortune to tap a dilated heart by mistake for an effusion, but I have often had difficulty in making up my mind, when the case has first come under my observation, whether I had dilatation or effusion to deal with. A mediastinal growth involving the pericardium may sometimes give difficulty, or a mediastinal cyst. Theoretically, an intrapericardial aneurysm may also cause difficulty, but I cannot remember, out of several instances of such aneurysms under my own observation, a single one in which even the suspicion of pericardial effusion was aroused.

X ray examination might be expected to aid in the diagnosis; it might show more marked pulsation with dilatation than with effusion. With a dilated right heart on deep inspiration a clear space is visible corresponding with Rotch's notch, the cardio-phrenic area. This is said to be absent in effusion. The difficulty of X ray examination lies in the fact that the patients are too ill to be taken to the apparatus, and its use in the wards on patients in bed is often unsatisfactory.

The blood examination in serous pericarditis gives, I believe, no useful information. In the rheumatic cases the changes would be those of rheumatic fever only. But in the case of suspected tubercle the various tubercular reactions might be of some assistance.

The Treatment of Serous Pericardial Effusion.

I need not discuss the general treatment of pericarditis or pericardial effusion by drugs, counter irritation, leeches, or other measures, for there is nothing new to add. I will confine myself to the consideration of paracentesis.

First, let me say that paracentesis is rarely necessary, for serous effusions in the course of rheumatic fever usually disappear spontaneously, and often produce no urgent symptoms. Absorption when it once begins is rapid, more rapid than in the pleura. The effusion is, no doubt, removed in the same way, by the lymphatic pump, worked by the respiratory movements on the one side and by the cardiac on the other. Though I have frequently tapped the pericardium, and am always glad to have the opportunity, I must confess that the necessity rarely arises. Even so large an effusion as that to which I have referred disappeared spontaneously, and recovery was complete, so that there are now no signs even of adhesion of the pericardium. The method is easy and safe with care. An exploration should be made first with a small needle. The needle must be sharp, the hand placed firmly upon the chest, and the puncture made by the fingers rather than by a thrust of the hand and arm. This will avoid anything like a jump when the needle penetrates the thorax, which might take it too far and possibly injure the heart. The only fatal result I ever saw in a case of paracentesis for serous effusion was due to the laceration of the heart by the sudden jump of the needle. The great secret of safety is to have a sharp, hollow needle, and to insert it with a gentle, firm pressure. I have never had any accident myself.

Exploratory punctures may be made in any place if the physical signs suggest it. I have tapped, for instance, at the base on the left side and even on the right. In the latter case my puncture withdrew blood only and the withdrawal of the needle was followed by the immediate formation of a blood tumour under the skin the size of a swan's egg. Nothing further, however, happened; the blood was rapidly absorbed and the physical signs which had suggested the site of puncture disappeared.

In an ordinary case when the diagnosis is clear and there is choice of place given the sites selected and advocated have been four. 1. In Sibson's notch—i.e., in the third left intercostal space near the sternum—a dangerous place on account of the proximity of the left auricle. 2. In Rotch's angle, in the fifth right intercostal space, to the right of the sternum, another risky place because the right auricle cannot be far away, even if the effusion be of large size. Sears, in a recent paper,[5] says that he has tapped many times in this position, but generally without obtaining fluid. Schaposnikoff says the third or fourth space on the right side is better and safer than the fifth, but both are risky. The choice of Sibson's notch or Rotch's angle is based upon the experimental injections, which I have already referred to and stated to be inconclusive. 3. The fifth space to the left of the sternum. This spot is advocated because the puncture is made in the spot which is not covered with lung and so the pleura is not perforated. Though this may be a good place for trephining the thorax with a view to incising the pericardium, it is not the best place for paracentesis. Nor need the risk of puncturing the pleura with the needle or with a fairly large trocar and cannula be seriously considered. In paracentesis the mere perforation of the pleura on the way to the pericardium does no harm. I have seen cases in which—where the needle inserted had perforated the pericardium, but the cannula could not be made to penetrate it—the fluid has leaked into the pleura and been absorbed rapidly or subsequently removed from the pleura by tapping, in each case with rapid recovery of the pericardium. 4. The safest place is the fifth or sixth intercostal space outside the left nipple line but well within the area of dulness, for here, owing to the displacement of the heart upwards and the distension of the pericardium outwards, is the widest space between the heart and seat of puncture. This is the place I advocate and choose. All the fluid that can be obtained should be removed. Often it does not re-accumulate, but if it should a second and third paracentesis may be performed or as many as necessary. Cases are recorded in which the paracentesis has been performed many times.

Besides the acute effusions which are generally the result of rheumatic fever, there is a group of chronic effusions the origin of which is not so clear; some are associated with new growth in the mediastinum, or near it. Others, perhaps, with tubercle, though this is rare, and some without obvious cause; of this the case I have already referred to was an instance. In this there was a large area of pericardial and mediastinal dulness, which was thought to be due to a new growth, because of the loudness of the pericardial friction, and was on that account not tapped, unfortunately, as it happened, because the necropsy showed nothing but pericardial effusion. One of the most remarkable cases of the kind I recorded some years ago, in which paracentesis was frequently performed for what was thought to be probably a mediastinal cyst. The patient lived 4½ years after the paracentesis and was tapped many times. On his death no mediastinal cyst was found, but only an enormously distended and thickened pericardium.

Purulent Pericarditis.

In purulent pericarditis the effusions are, as a rule, much smaller. When large they yield the same general signs as serous effusions do, and the purulent nature of the effusion even if suspected can only be proved by puncture. The smaller effusions are much more difficult to diagnose, as the pus is often in pockets or pouches, while the rest of the pericardium is adherent. Thus very irregular areas of cardiac dulness are sometimes presented. In manifest pyæmia the diagnosis of purulent pericarditis may be made on general principles, the heart showing something wrong, which is not due to valvular disease.

Leucocytosis would only suggest pus somewhere in the body but not necessarily in the pericardium, and pericardial effusion in the course of pyæmia is not necessarily purulent any more than pleuritic effusion is. In most cases of pyæmia purulent pericarditis is not diagnosed either because the symptoms are masked or because there are no definite cardiac symptoms at all. In others the diagnosis may be made of left-sided empyema, and on opening the side, after finding or not finding pus in the pleura, the pericardial sac may be felt bulging, and incision through the pleural opening shows that it contains pus.

One very interesting and important group of cases is that in which the purulent pericarditis accompanies or follows pneumonia. It frequently causes no suggestive symptoms and may be altogether latent. During the acute stage the pericarditis may be very acute and the pericardium be found post mortem covered with flaky yellow pus, but there is little fluid as a rule and that for the most part sero-purulent. It is after the pneumonia is well over that the most remarkable cases occur. I have more than once during what appeared to be a normal and satisfactory convalescence had the patient suddenly die without apparent reason, and post mortem the pericardium has been found full of pus, often with a double empyema. As the physical signs must have been obvious enough, the diagnosis could hardly have been missed if careful examination had been made, so that I now make it an invariable rule, whether there seems reason or not, to examine a convalescent from pneumonia every two or three days to avoid being caught napping, as I have been once or twice.

An empyema following pneumonia is generally associated with an irregular temperature curve, but not always, and I believe that purulent pericarditis is still more often latent and afebrile. It is specially unfortunate when these cases are overlooked, because just as pneumococcal empyema is of favourable prognosis. so I believe is pneumococcal pericarditis when recognised and incised.

---

[5] Boston Medical and Surgical Journal, cxliii., 24.

Purulent pericarditis may become quiescent and the pus inspissate, as many specimens in our museums show. There is no instance. so far as I know, of the pus in the pericardium spontaneously discharging itself either internally or externally. If pus points over the pericardium it is an empyema pointing in a peculiar place, or an abscess connected with the chest wall, but not a purulent pericarditis.

In many cases of latent purulent pericarditis death is sudden. This is due to cardiac syncope, the result of the myocardial changes which are more extreme with purulent than with other forms of pericarditis.

The examination of the blood is not likely to be of much assistance in diagnosis, but there are not many observations upon the blood in purulent pericarditis recorded.

Of the bacteriology, too, there is much to learn. The pneumococcus has been frequently found in the metapneumonic cases, and in the pyæmic cases the streptococcus, staphylococcus, and other bacteria.

On both these subjects we may hope that the present discussion will add to our knowledge.

Treatment of Purulent Pericarditis.

If pus has been shown to be present by exploratory puncture it must be evacuated either by paracentesis or by incision. It may seem strange to speak of the cure of purulent effusion by paracentesis only, yet this is well known in empyema, and the pericardium seems even more favourably placed for cure than the pleura. Nowadays one never sees an empyema treated by paracentesis, but when the operation for empyema was not so successful in its results, paracentesis was usually tried first and incision only resorted to if paracentesis failed. I have had many cases of empyema cured by paracentesis in my own experience and some of purulent pericarditis, and in the statistics of paracentesis pericardii there are many others recorded.

I recall one case in a girl in which I diagnosed purulent pericarditis, and after establishing the diagnosis by exploration I proceeded to introduce a trocar and cannula. However, the instrument was rather blunt. and when I could not penetrate the pericardium without using more force than I thought prudent I stopped the operation, intending to use a sharper instrument the next day. However, in a few hours all signs of pericardial effusion had disappeared, and in its place signs of pleural effusion had developed at the left base. This was tapped then instead, a good many ounces of pus removed, and rapid recovery followed. The pus from the pericardium had obviously drained out through the puncture into the pericardium and had discharged itself into the pleura.

Nowadays in suspected purulent pericarditis puncture is usually made for diagnosis, and if pus is found the treatment is incision.

Bearing in mind the fact that the pus in the pericardium may be in a pouch or pocket and not generally in the pericardial sac, it is well to do what is the rule with a localised empyema: after the pus has been found with the needle, to leave the needle in, use it as a director or guide, and follow it down with the knife till the pus is reached. If, however, the case is of such a kind that free choice of site may be made, there are only two places that need be considered. 1. In the left nipple line or slightly outside it within the area of dulness. 2. To the left of the sternum in the fifth interspace.

1. The objections to selecting the left nipple line region are two: (*a*) That the left pleural cavity would be opened. Experience proves this objection is not so serious as theory would suppose, for pneumothorax does not occur, or at any rate collapse of the lung does not, nor if the opening be free does the pus gain access to the pleura. Even if it did, as in the case mentioned as occurring after paracentesis, it is easily evacuated and may be cured by paracentesis. Hydatids of the liver have been frequently and deliberately opened from behind through the ribs and pleura without empyema following. (*b*) After the incision is made and the pus evacuated the pericardium contracts, and the tube inserted then runs horizontally for two or three inches from the external opening. This objection does not seem to be of much importance judging by experience. It does not seem necessary always to retain the tube, for after the pus has been evacuated it does not usually seem to reform, and the pericardial sac closes in all round the heart, so that in the course of a day or two the sac is completely obliterated, as many necropsies show. This is illustrated by the specimen taken from a case in which the side was opened for what was thought to be an empyema. When the finger was inserted the bulging pericardium was felt. This was incised and a large amount of pus evacuated. The case was one of pyæmia, and the lad died two days later, when the pericardium was found adherent over the whole heart, and contained no pus.

2. The left of the sternum in the fourth or fifth space is the favourite place among surgeons, and perhaps rightly in those cases in which it is fair to assume that there are no adhesions here, and the pus occupies the whole sac. To be sure of this is, however, just the difficulty. It is not the safest place for exploratory puncture, as has been already stated, and we cannot be sure that the pus is anywhere else except where it has been found by the needle. Operation in this place may avoid opening the pleura, but not of necessity; on the other hand, it involves trephining the thorax there or excision of a portion of the fourth and fifth ribs. This being done, the operation is simple, for the pericardium can be exposed and carefully incised and the finger introduced into the sac. If nothing be discovered then the wound can be closed, but the removal of ribs takes time to recover from. Still, it is generally wiser when pus has been found with the needle to use the needle as a director and follow it down till the pus is reached, and as most exploratory punctures are made in the left axillary line or thereabouts the incision is made here too.

Wimpole-street, W.

A SINGULAR COMBINATION OF FRACTURES OF THE LEG.

BY W. ARBUTHNOT LANE, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

FIG. 1 illustrates the association in the same subject of an abduction fracture of the ankle-joint, or, as it is more commonly called, Pott's fracture, with a spiral or torsion fracture of the tibia. The patient in an athletic mood arranged to jump over a flower-bed. He slipped, twisting his foot very painfully, as he approached it, and apparently leaping off the normal leg landed on the damaged one which he felt break with his weight. It seems pretty clear that the spiral fracture of the lower end of the fibula was broken by the excessive abduction of the foot, while the tibia yielded to the torsion to which it was exposed when he landed on the foot already over-abducted because of the fracture of the fibula.

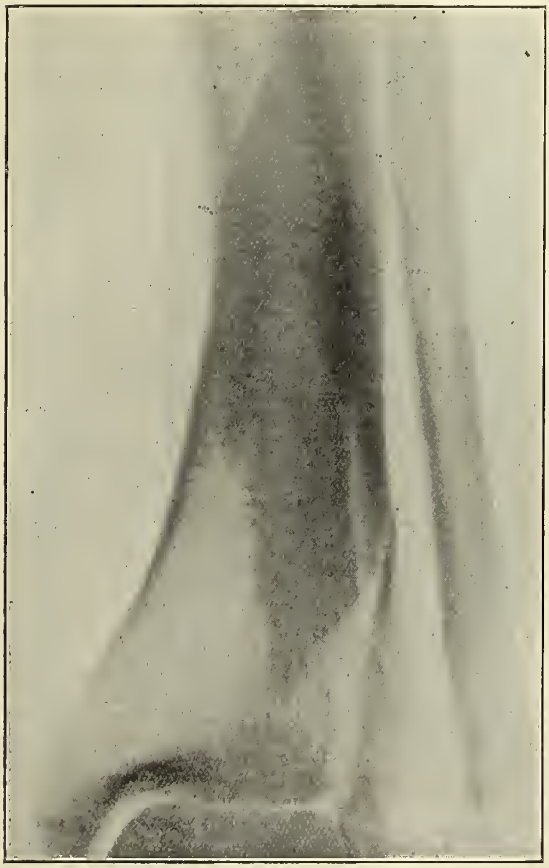
As an interval of several weeks had elapsed since the receipt of the injury before he came under my care, and as there was still much thickening of the soft parts, it was quite impossible to restore the fragments to their normal relationship to one another. Fig. 2 shows the best we could do in the circumstances. I have no doubt that a primary operation would have resulted in the perfect restoration of the skeleton to its original form and function, whereas we were only able to make a very painful and useless limb fairly efficient. The combination of the two fractures seemed sufficiently uncommon in my experience to make it worth while putting the condition on record.

The operative treatment of the various fractures which result from excessive abduction or excessive adduction of the foot is very simple. Those resulting from excessive abduction present three degrees of severity: 1. In the first the fibula is broken spirally by the pressure exerted upon the anterior portion of the facet on the fibula by the astragalus. This fracture varies in position. It may either pass through the inferior interosseous ligament, when there may be no displacement of fragments, or it may occur above this ligament, when the displacement may be considerable. 2. In the second, in addition to the fracture of the fibula, the inner malleolus is fractured transversely. 3. In the third that portion of the tibia which is united to the fibula by the inferior interosseous ligament is broken off and is displaced with the lower fragment of the fibula, to which it remains attached.

The treatment of these several fractures, should the displacement be not capable of complete replacement without operation, is the same. It consists in exposing the fibular fracture and in bringing the fragments of this bone into accurate apposition. When this is done the surgeon can be quite satisfied that the fragments formed by the inner malleolus and by the outer and back part of the tibia are in accurate apposition. A steel plate with three or four screws readily retains the fibular fragments in accurate apposition and ensures the restoration of the joint to its normal form and function.

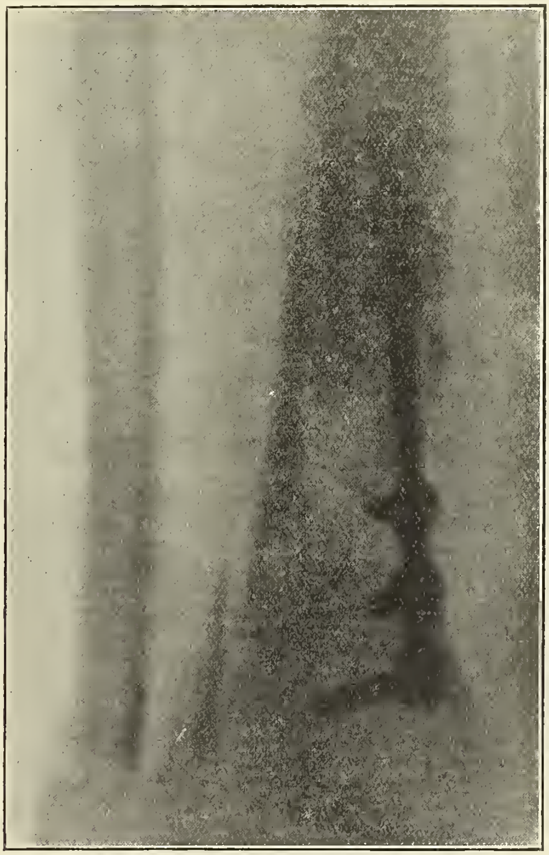
Excessive adduction of the ankle-joint produces fractures of two degrees of severity: 1. In the first the inner malleolus and a portion of the tibia are broken off by a vertical fracture which traverses the tibia at the junction with the inner malleolus. This results in the upward displacement of the inner fragment which cannot be fixed accurately in its normal position except by operation. 2. In the second degree there is as well a transverse fracture of the fibula at the lower limit of the tibio-fibular joint, this bone being broken transversely over the lower margin of the tibia. This fracture is rarely a sharp one, the bone being usually somewhat scrunched.

FIG. 1.—*Before Operation.*



Fracture of ankle-joint (Pott's fracture) and spiral fracture of fibula.

FIG. 2.—*After Operation.*



Fragments in normal replacement by steel plate and screws.

The operative treatment of these fractures is to expose the inner fragment of the tibia, and having replaced it accurately in position to retain it immoveably by means of a vertically placed steel plate and by three screws. If the fibula is broken as well the surgeon may rest assured that its fragments are in the best possible position.

The spiral fracture of the shaft of the tibia results from a rotation outwards of the trunk upon the abducted foot. The forces exerting rotation on the tibia are the interval between the centre of the tibio-fibular joint and the end of the great toe below, and above the interval between the head of the femur on the same side and the outer limit of the pelvis on the other. This rotating force results in a spiral fracture of the shaft of the tibia with a backward and outward displacement of the lower fragment; in more severe cases there is associated subsequently a spiral fracture of the shaft of the fibula very much higher than the tibial fracture. Besides the force which produces a torsion fracture of these bones there is superadded the weight of the body. These two forces assist in producing the overlapping of the fragments which exists to a varying degree in these torsion fractures.

In the case illustrated here the upper fibular fracture was absent owing to the fibula having been already broken by the excessive abduction of the ankle.

The treatment of these torsion fractures of the tibia is always the same—namely, the free exposure of the tibial fragments, their accurate replacement in their normal relationship, and their secure fixation by means of one or more steel plates and screws. When this has been effected the fibular fragments have usually been restored to their normal relationship, but if this has not been done accurately the interval between the fibular fracture and the ankle-joint is so great as to make any displacement of the fibular fragments immaterial.

The results of the operative treatment of these several fractures of the tibia and fibula are excellent, providing the surgeon does his work properly, since the skeleton is restored to its normal form and function. Besides this, the operative procedures are simple and are devoid of risk. On the other hand, the results of the treatment of displaced fragments by manipulation and splints are hopelessly bad.

Cavendish-square, W.

MR. JOHN MULVANY, L.R.C.P. Edin., J.P., has been elected to the aldermanic bench by the Portsmouth town council.

PATENT URACHUS AND ENCYSTED URINARY CALCULI.

By CAMPBELL DYKES, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN, I.M.S.

THIS case, which both in its clinical and pathological bearings I believe to be of some interest, came under observation on Jan. 27th, 1908, at Rae Bareli, Oudh.

The patient was a Hindu male, aged about 30 years, apparently healthy apart from his urinary complaint, which dated back some five years or more. Owing to pressure of work I had not seen him till he was on the operating table prepared for litholapaxy. The urine. I was informed, was acid and free from albumin. Several small concretions lay free on the base of the bladder, but on commencing to crush the first the beak of the lithotrite impinged upon what appeared to be a much larger calculus occupying a position at the apex of the half-distended bladder. After the first stone had been crushed the projecting portion of this larger calculus was easily seized between the blades of the lithotrite, but was found to be fixed to the bladder wall.

To crush this calculus *in situ* appeared dangerous, if not impossible, so lateral lithotomy was performed and the forefinger passed into the bladder. The calculus was now found just within reach of the finger. With the forefinger on the tip of the calculus and the other hand on the abdominal wall it was estimated to be of considerable size, and its upper portion seemed very close under the examining hand beneath the abdominal wall in the middle line. It was evidently an "hour-glass" stone, the deeper half being considerably larger than the projecting portion felt by the finger. The projecting portion being steadied in the grasp of lithotomy forceps the perforated end of a long probe was insinuated alongside the neck and gradually manœuvred round the whole circumference, loosening the retaining tissues till by gentle traction and rotation of the forceps an "hour-glass" calculus was safely delivered. A second calculus immediately dropped from the same pocket into the bladder cavity. It, together with the three small concretions, the presence of which on the bladder floor had already been detected, was now removed, and the débris of the small stone, first crushed, washed out. In case other concretions might still be lying in the pocket its recesses were explored by a probe. Nothing further was found, but the probe passed up in the middle line, easily palpable through the abdominal wall to a point two inches below the umbilicus. At the upper end the pocket seemed to be contracted to a mere sinus. Convalescence was rapid and uncomplicated.

The "hour-glass" calculus weighed over 1½ ounces. Its neck was of about the thickness of a cedar pencil but somewhat flattened. The deeper lobe was larger than the projecting head, which was capped by a pea-sized, rough, dark-coloured concretion easily broken off when dry from the head proper. This terminal concretion resembled exactly in colour and approximately in size the four small concretions which had been found free in the bladder, differing only in being rough and not polished or faceted by attrition. This resemblance strongly suggested that these four also owned the same source from the head of the "hour-glass" calculus. Each weighed about 10 or 12 grains. The second encysted calculus showed a large oval facet corresponding to a like facet on the base of the "hour-glass" calculus. Its longer axis had lain at right angles to that of the diverticulum in which it lay. It weighed just over half an ounce.

Neither in recorded cases nor in museum specimens have I come across any instance in which an encysted calculus has occupied the apex of the bladder. All the records I have found refer to basal or lateral sacculi, such as are commonly associated with enlarged prostate and chronic cystitis. This is so, for instance, in all the cases of encysted calculus included in the late Sir Henry Thompson's series of over 800 cases, the specimens of which are now in the Museum of the Royal College of Surgeons of England. From the position and relations of the diverticulum this case appears to be an example of persistent patency of the lower end of the urachus with calculous formation following, presumably on the accidental lodgement of a small concretion in it.

As showing the free communication which may exist between the bladder and a patent urachus, Marshall's case[1] may be quoted, in which the aperture admitted three fingers, and Garrigues',[2] in which there was an upward prolongation of the bladder in front of the peritoneum and transversalis fascia without any constriction at all. Both these were discovered accidentally in the course of a laparotomy. Binnie[3] found in 12 adult bodies out of 16 examined a slight diverticulum from 1 to 2 centimetres deep at the fundus of the bladder, and Vaughan[4] quotes Wutz as saying that in most bodies the urachus is permeable for a short distance upwards—that is, that most persons have the condition of "blind internal fistula," but so long as the valve-like fold of mucous membrane (valve of Wutz) which guards the opening remains intact nothing can pass from the bladder into the urachus. Mériel[5] also says that the urachus is undoubtedly permeable "after some sort" after birth, and Arbuthnot Lane,[6] in describing the pathological appearances of a case in which a traumatic urethral stricture had existed, records that "at the upper angle of the bladder and apparently at the point of attachment of the urachus was a diverticulum of mucous membrane which had no covering of the muscle wall; it was as large as a small marble with a small orifice of communication with the bladder cavity. *This resembles exactly several others I have seen in this position.*"

While urachal cysts are much commoner in the female than in the male, a patent condition of the urachus leading to urinary umbilical fistula is much commoner in the male (14 out of 16 cases—Marshall[1]) owing to the greater liability to obstruction of the urethral outflow from phimosis, stricture, stone, enlarged prostate and bladder tumour, and consequent forcing open of the valve of Wutz (Vaughan[4] and Weiser[7]). Nevertheless, as Mériel points out,[5] patency of the urachus may exist without obstruction, just as obstruction frequently exists without urachal fistula.

Several cases are recorded of the association of urinary calculus with an external urachal fistula. In a case of T. Paget, shown by Bowman in 1850,[8] a uric acid calculus which had formed round a coiled hair was extracted digitally through a patent urachus. In Case 36 of Vaughan's series[4] an umbilical fistula coexisted with a stone in the bladder and was closed after removal of the stone by suprapubic lithotomy. And in one of Weiser's cases[7] a calculus weighing 70 grains was removed from a suppurating urachal cyst which was discharging through the umbilicus. I have not, however, found any case showing the exact combination which existed in the present one—namely, urinary calculi occupying the lower end of a blind internal urachal fistula, though the possibility of such an occurrence seems clearly enough indicated by the pathology.

As regards the treatment adopted, it must be admitted that there was considerable risk that the condition found might have proved impossible to deal with from the perineum, although encysted calculi have not infrequently been extracted by this route—e.g., Captain Hugo's case of stone secondary to a gunshot wound.[9] Also a condition mechanically somewhat similar—namely, a calculus projecting from a ureteral orifice—has been successfully dealt with through the female urethra.[10] The alternative suprapubic operation, however attractive on account of the good access it gives to the interior of the bladder and the ease with which a stone can be extracted, is, under circumstances in which ideal conditions as regards after-care cannot be secured, a much more serious proceeding and apt to be followed, in my experience, by a tedious and very uncomfortable convalescence. I feel sure that my preference for the perineal operation wherever practicable is shared by many surgeons, at all events in India.

Nor is it at all certain that a suprapubic incision would have rendered possible a radical cure by dissection of the diverticulum from the peritoneum, with closure of the bladder, as was done in Marshall's case. For in several instances it has proved impossible to dissect away urachal cysts from their posterior attachments or (a condition pathologically strictly comparable) possible with only great difficulty and danger (Doran[11]). Failing some future septic condition of the bladder, there seems no particular reason to anticipate that the existence of this diverticulum will cause serious trouble, though recurrence of stone is a possibility to be reckoned with.

Bibliography.—1. Marshall: Journal of Obstetrics and Gynecology of the British Empire, vol. xi., 1907. 2. Garrigues: American Journal of Obstetrics, December, 1899. 3. Binnie: Journal of American Medical Association, vol. xlii., 1906. 4. Vaughan: Transactions of American

Surgical Association, 1905. 5. Mériel : Gazette des Hôpitaux, Feb. 16th, 1901. 6. Arbuthnot Lane: Guy's Hospital Reports, vol. xxviii., 1885. 7. Weiser: Annals of Surgery, October, 1906. 8. Medico-Chirurgical Transactions, vol. xxxiii., 1850. 9. Hugo: Brit. Med. Jour., Nov. 22nd, 1902. 10. Annals of Surgery, vol. xxx., p. 100. 11. Doran : THE LANCET, May 8th, 1909. To the bibliography at the end of this last paper I am indebted for most of the references above.

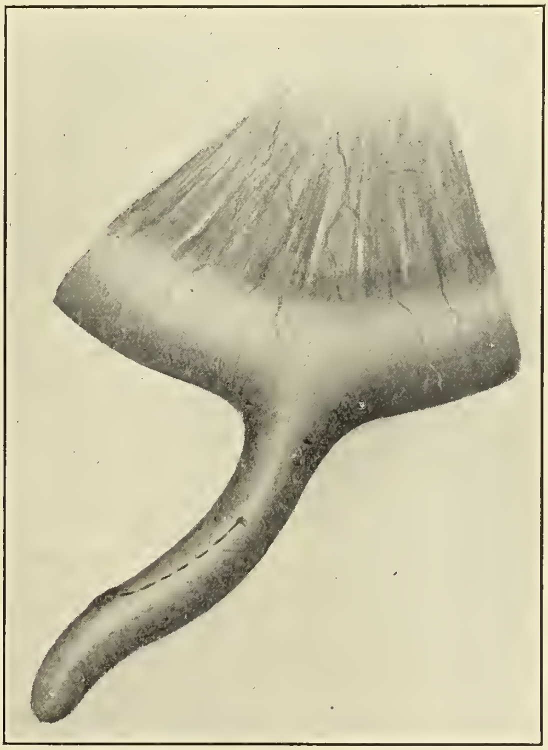
Hampstead, N.W.

AN UNUSUAL CASE OF OBSTRUCTION OF THE SMALL INTESTINE CAUSED BY A MECKEL'S DIVERTICULUM.

BY G. H. MAKINS, F.R.C.S. ENG.,
SURGEON TO ST. THOMAS'S HOSPITAL, ETC.

THE patient, a healthy youth, aged 20 years, who had never previously suffered from any intestinal trouble and whose bowels acted regularly daily, became unwell on Nov. 12th, 1909. He suffered from some abdominal pain and general malaise, but the bowels acted normally that morning. On the 14th the pain became worse and he vomited on several occasions; the bowels did not act and the patient took to his bed. During the next seven days no further action of the bowels took place although purgatives and enemata were administered. Flatus was, however, passed on many occasions. The patient vomited, seven or eight times daily, a dark-brown matter, ill-smelling but not fæcal in odour. He slept little and was in some pain. On the ninth day from the commencement of the illness Dr. W. Thornely saw him in consultation and the patient was sent to St. Thomas's Hospital.

On admission on Nov. 21st the patient was pale, with some anxiety of countenance. The tongue was moist, vomiting occurred occasionally, and after the administration of an enema some flatus was passed. The temperature was subnormal; the pulse was 72, small. The abdomen moved little and was much distended, the distension being central and resembling in character that seen with a collection of pus in the pelvis. The flanks were flat, but there was no asymmetry. General tympanitic resonance was present, and on palpation there was marked tenderness beneath the lower segment of the left rectus, where also the patient said the chief pain was located. On rectal examination the bowel was found to be empty, and in Douglas's pouch a tender elastic swelling could be felt. There was no abnormal scarring or depression of the umbilicus.



Position of curved fish bone and relation to perforation are shown by the dotted line.

A left para-median sub-umbilical incision was chosen as corresponding to the position of the pain and tenderness. A small amount of free fluid escaped on opening the peritoneal cavity, and highly distended coils of small intestine presented. A finger passed into the pelvis established the fact that no collection of pus existed, and a short search allowed the detection of collapsed coils of small intestine. The latter were traced to the right side of the pelvic brim, and when some of the distended coils had been allowed to escape a Meckel's diverticulum was exposed. The constriction was not very tight, and a finger was inserted beneath the diverticulum, which gave way from its point of attachment to about the centre of the right half of the brim of the pelvis. The adherent area was on the right side of the diverticulum about three-quarters of an inch from its tip. No intestinal contents escaped. The base of the diverticulum was clamped, ligatured, and sunk by a row of sutures passed in the transverse axis of the bowel. The loaded extruded intestine was emptied by an enterotomy and replaced, and finally the abdomen was closed. The patient made a rapid recovery, only interrupted by some suppuration in the abdominal wound, no doubt due to fouling by the intestinal contents removed.

The diverticulum was situated about two feet from the termination of the ileum and was two and a half inches in length. It contained liquid fæces, and while being examined the end of the rib of a whiting protruded from the perforation in its wall. The lining mucous membrane was inflamed throughout, but there was no ulceration except at the point at which the end of the fish-bone had impinged and caused the perforation.

The case is of some interest both from the points of view of diagnosis and pathology. The history provided none of the special features of obstruction from a Meckel's diverticulum, except the obviously mild nature of the constriction, since flatus was passed throughout. On the other hand, the history of the initial pain and malaise, continuing for two days, followed by the development of vomiting and constipation, suggested an attack of perforative appendicitis, while this theory was supported by the character of the abdominal distension, the tenderness beneath the left rectus, and the fulness in Douglas's pouch, all of which suggested that the obstruction was symptomatic and depended on the presence of pus in the pelvis. The pathological interest lies in the fact that the condition forms another link in the chain of resemblance between the possible accidents to which both Meckel's diverticulum and the vermiform appendix are alike liable.

Charles-street, W.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore (Johns Hopkins University)*: Dr. E. A. Erlanger has been appointed Adjunct Professor of Physiology.—*Berlin*: Dr. R. Olshausen is about to retire from his Professorship of Midwifery and Gynæcology.—*Bonn*: Dr. Paul Prym has been recognised as *privat-docent* of Pathological Anatomy and General Pathology.—*Breslau*: Dr. Robert Scheller has been granted the title of Professor.—*Cagliari*: Dr. Giulio Tarozzi has been appointed Extraordinary Professor of Pathological Anatomy, and Dr. Roberto Binaghi Extraordinary Professor of External Pathology.—*Catania*: Dr. Filippo Arturo Foderà of Cagliari has been appointed Professor of Materia Medica and Experimental Pharmacology.—*Kharkoff*: Dr. N. A. Voliashko has been appointed Extraordinary Professor of Pharmacognosis and Pharmacy.—*Marburg*: Professor Schmidtmann has been appointed Curator of the University.—*Munich*: Dr. L. Lindemann, *privat-docent* of Medicine, has been granted the title of Extraordinary Professor; Dr. Rudolf Schneider has been recognised as *privat-docent* of Ophthalmology.—*Naples*: Dr. Carlo Gualdi has been recognised as *privat-docent* of Internal Pathology.—*New Orleans (Tulane University)*: Dr. Henry Bayon has been appointed Adjunct Professor of Anatomy.—*Padua*: Dr. Luigi Sabbatani of Parma has been appointed Professor of Materia Medica and Experimental Pharmacology.—*Pavia*: Dr. Carlo Bellinzona has been recognised as *privat-docent* of Ophthalmology.—*Zürich*: Dr. Hans von Wyss has been recognised as *privat-docent* of Physical and Chemical Diagnosis of Medical Diseases.

A CASE OF SUDDEN DEAFNESS OCCURRING DURING ECLAMPSIA.

BY MACLEOD YEARSLEY, F.R.C.S. ENG.,
SENIOR SURGEON TO THE ROYAL EAR HOSPITAL; MEDICAL INSPECTOR OF LONDON COUNTY COUNCIL DEAF SCHOOLS, ETC.

THE following case is, I think, well worth placing on record. I have so far been unable to find one similar in the published literature, either otological or obstetric, whilst inquiries amongst obstetricians of my acquaintance have been equally unsuccessful, save that Dr. Eardley L. Holland informs me that he has met with one instance in the German literature of eclampsia The history of the case is, briefly, as follows.

The patient, aged 40 years, was seen by me on Oct. 26th, 1909, at the request of Dr. J. B. Wallace of Clapham. She had been deaf in the right ear since October, 1907, and she stated that the deafness had come on suddenly during eclampsia. She did not think that there had been any change in the hearing since its onset. Tinnitus had been present from the beginning, at first of a roaring character, "like thunder," now more of a "continuous whizzing." There had been occasional general dizziness, which was now much less, but no specific vertigo could be elicited. There was no paracusis Willisii, hearing being better in a quiet room. On examination both tympanic membranes were of similar aspect, their texture and lustre being normal, and the light reflexes somewhat small. Both mallei moved normally to the Siegle speculum. The nasal septum was slightly deflected to the right, but caused no obstruction; the post-nasal space was small, and there was slight chronic pharyngitis. Functional tests gave the following results: Weber's test lateralised to the left. Acoumeter, spoken and whispered voice heard on the left the length of the room (over 15 feet) and the whole series of tuning forks, from 3C 16 to C^4 were heard well by air conduction. On the right side spoken voice was perceived at 31 inches, acoumeter and whisper *nil*. By air 3C 16 and C^4 were lost, the perception for the forks between these limits being greatly diminished, but the absolute length of time in seconds for which they were heard could not be accurately gauged. Rinné's reaction to C (128) was positive on both sides. Bone conduction to the C fork was, after repeated testing, apparently − 17 seconds on the right and − 8 seconds on the left. The Edelmann Galton-pfeife was heard up to 40,000 double vibrations on the left, up to 15,000(?) on the right. The tests for each ear were done with the opposite ear tightly plugged with cotton-wool, but it is possible that the voice and whistle results and those for some of the higher forks were due to hearing through the skull by the opposite ear, as I have had no opportunity of checking their accuracy by testing with Bárány's noise-producing apparatus. I have already pointed out this possible source of error in a published note.[1] There was no spontaneous nystagmus and the caloric test showed no impairment of the vestibular apparatus.

Since examining this case I have to thank Dr. Wallace and Dr. A. E. Giles for the following notes as to the original attack of eclampsia.

Dr. Wallace was called to the patient on Oct. 19th, 1907, at 4 A.M., and found her insensible. "She was removed to a nursing home and was seen by Dr. Pelham Webb. Tried chloroform, &c. Dr. Giles saw her about 9 P.M., and transfused 8 pints into her median basilic vein. All the 20th she remained insensible, being unconscious for over 48 hours and having frequent convulsions. Between 3–4 A.M. on the 21st I delivered her of a seven months' stillborn male child; on my return after breakfast she had regained consciousness. She had no more fits after this, but hung between life and death for days. The urine at first was almost solid and gradually improved. Her heart was dilated, she was badly cyanosed, and oxygen and strychnine were freely used. She gradually improved and left the home on Nov. 15th; albumin remained in the urine for some months after. It was her third pregnancy; I confined her twice before (girls both times), but nothing noteworthy occurred. She could hear before the illness."

Dr. Giles gave me the following note: "There is not much to say clinically, but briefly the matter was as follows. I saw her at 9 P.M. on Oct. 19th, 1907, when she had had a good many fits stretching over some hours and was comatose; I at once transfused her to the extent of 8 pints of saline; labour had not advanced far, so I decided not to interfere; she had no more fits and the following morning, Sunday, she was conscious but dazed; confinement took place naturally on the Monday morning. The urine was absolutely loaded with albumin, so that we came to the conclusion that she probably had a definite nephritis; her mind remained rather dull for several weeks after the confinement."

Without entering into the etiology and pathology of eclampsia (an admirable review of which by Dr. Eardley Holland has appeared recently[2]) two features may be pointed out: (1) that the symptoms are those common to many toxæmias, and that eclampsia is, broadly speaking, an auto-intoxication by the toxic products of protein disintegration; (2) that eclamptic blood is characterised, among other things, by an increased coagulability, and that Dienst considers that the increase of fibrinogen in the blood of eclamptic patients is most important, and accountable for nearly all the thrombotic and other changes which occur in the body. Deafness occurring during eclampsia may, therefore, be due to toxæmia, to effusion or hæmorrhage into the cochlea, or to thrombosis or embolism. In the first case—deafness due to toxæmia—it is unlikely that the condition would be confined to one ear, since the deafness met with in other toxæmias is invariably bilateral. I am inclined to regard the present case as one of blocking of the cochlear branch of the auditory artery, since hæmorrhage or effusion into the cochlea would have been accompanied by vestibular disturbances, which appear to have been absent and which, if overlooked in the gravity of the eclamptic symptoms, would have left permanent traces recognisable on testing the vestibular apparatus.

The condition was unlike any I have ever seen due to nephritis, and it is more likely that the deafness was dependent for its cause on the general conditions found in eclampsia than on kidney lesion. Renal changes occur in 99 per cent. of cases of eclampsia (Schmorl in 73 necropsies only met with one instance in which the kidneys were healthy), and, in the review already alluded to, Dr. Eardley Holland says that the severe clinical symptoms of eclampsia cannot be dependent upon the renal changes.

It is somewhat surprising that no other cases of deafness arising during eclampsia have been recorded. Eclampsia is, however, so fatal a condition that it is possible that instances have passed undetected both clinically and on the post-mortem table.

Harley-street, W.

A NOTE ON COCAINE POISONING.

BY ALEXANDER G. GIBSON, D.M. OXON.,
M.R.C.P. LOND.

THE easily accessible accounts of the acute toxic effects of cocaine mention among the prominent symptoms those of brain excitability, mental instability, tonic and clonic convulsions. Convulsions seem not to be one of the usual effects of cocaine poisoning in man, and the description of tonic and clonic applied to them hardly agrees with my own observations in a recent case.

At 2 P.M. I was suddenly called to see a married lady, aged 40 years, suffering with the most violent spasms. The history was as follows. She had been in her usual health, but in consequence of some throat irritation she had been occasionally painting her fauces and tonsils with a 2 per cent. solution of cocaine hydrochloride. Before luncheon she had painted her throat because of a "choky feeling." Immediately after luncheon, though not feeling ill, she again had the same sensation and retired to paint her throat a second time. No sooner had she done this than the sensation became worse, and she felt as if she could not breathe. She rang for her maid who found her in violent spasms. On my arrival, perhaps five minutes from the onset of the attack, I found her half sitting, half lying in a chair, clutching at her sides with both hands, making grimaces such as often accompany intense muscular effort, quite oblivious to her surroundings, and occasionally uttering piercing cries. Many of the movements were of the voluntary type, for on seizing her wrist in order to restrain her she made partial efforts to get it free.

---

[1] Journal of Laryngology, vol. xxiv., p. 251.

[2] Journal of Obstetrics and Gynæcology of the British Empire, vol. xvi.

A more careful examination was made after she had been placed on the floor; her face was intensely red, but was not moist, her eyes were more prominent than normal, her pupils were medium sized and equal, and her pulse was strong, full, regular, and slower than one would have expected. Her breathing was not obstructed except by the spasms. For a few moments she would remain somewhat quiet, then she would clench her teeth, strike out with her arms, and her whole body would become stiff with tonic muscular rigidity. During the spasms she was totally unconscious, but in the more quiet intervals she appeared to know what was going on and once inquired why she was lying on the floor. The movements were so violent and it was so difficult to prevent her from injury that chloroform was deemed advisable. A dose administered on a handkerchief quite insufficient to induce anæsthesia succeeded in allaying the convulsion, and it was then possible to place her on her bed, after which no further spasms occurred.

The whole attack did not last more than 15 or perhaps 20 minutes. The return to her normal state was extremely rapid and in some 20 minutes after being put to bed she was able to get up and relate to me her symptoms. She remembered nothing distinctly after she rang the bell for her maid until she found herself in bed. She had no recollection of my entry into the room, and the only feature that seems to have impressed itself on her memory was that she felt "full of fight." She was able to attend to her social duties in the course of the afternoon and felt no ill-effects until the next day when she lacked some of her usual energy.

The convulsions most nearly resembled those seen in hysteria, but they were more violent; they lacked entirely that avoidance of self-injury which is so conspicuous in many forms of hysteria; during their course the patient was completely unconscious; and, lastly, the patient is not a hysterical subject and has had no similar seizures before. The occurrence of the convulsions in relation to the use of cocaine as a throat application makes it most likely that they were due to that drug, especially when it is remembered that they occurred in a non-hysterical subject and, the drug having been withheld, have not been followed by any further tendency to spasm. An examination of the bottle showed that a deposit had settled to the bottom mixed with which was a fungoid growth, and it is natural to suppose that some of the solid drug or some decomposition product of it had been applied on one or both occasions of painting the throat preceding the attack.

Oxford.

THE INFLUENCE OF NARCOTICS ON PHAGOCYTOSIS.

BY LEETHEM REYNOLDS, B.A., M.B., B.C. CANTAB.,
CAPTAIN, I.M.S.; MEDICAL OFFICER, LAWRENCE MILITARY SCHOOL, SANAWAR, PUNJAB.

IN the practice of both medicine and surgery narcotics play an important part. One of the first principles taught to the medical student is the necessity of putting an injured part to rest. Simple appliances and remedies will often produce the desired result, but there are many cases in which rest, in the true sense of the term, can only be obtained by means of narcotics. A patient is suffering, we will say, from great pain, restlessness, and inability to sleep after a severe operation. A dose of morphia is given, all restlessness disappears, and the patient sleeps. Relief from pain and distress in such cases is generally considered sufficient to justify the means and no thought is taken of any ulterior effect of the drug.

A great deal of work has been done of recent years on the subject of immunity, and thanks to Metchnikoff, Ehrlich, Wright, and many others, we now appreciate the great importance of the natural resistance of the body to disease. Before deciding that narcotics may be used with advantage it would be well to consider what effect, if any, these drugs have on the phagocytes. In this paper the effect of morphia only will be discussed.

In 1898 Cantacuzène published[1] the results of some interesting experiments on the effect of opium on phagocytosis. A guinea-pig immunised against cholera was given tincture of opium subcutaneously, followed by a sublethal dose of cholera vibrios introduced into the peritoneal cavity. He found that in spite of vascular dilatation diapedesis did not take place. The vibrios retained their form and motility and multiplied rapidly. As the effect of the opium passed off diapedesis began, and in a short time large numbers of leucocytes appeared on the scene, which rapidly enveloped the vibrios. The animal invariably died in spite of the fact that no free vibrios were present in the exudate. On examining the exudate it was found that some of the leucocytes, showing marked signs of degeneration, were literally stuffed with vibrios. Cantacuzène explained this in the following way. Some of the leucocytes, enfeebled by the opium, although capable of enveloping the vibrios, are killed by the toxins produced by the latter, and serve as a suitable medium in which the vibrios multiply. He states that this never takes place unless the animal be under the influence of opium. In another series of experiments tincture of opium was given, followed by a mixture of immune serum and cholera vibrios in such proportion that the control survived. He found that Pfeiffer's reaction took place but phagocytosis was retarded and incomplete; some of the vibrios escaped, multiplied rapidly, and caused the death of the animal.

Metchnikoff was the first to call attention to the phagocytic power of the leucocytes and fixed connective tissue cells, and to the important part this phenomenon plays in saving the tissues from invasion by pathogenic organisms. In 1894 Pfeiffer described the phenomenon named after him, and maintained that the destruction of bacteria in the living body was brought about by substances contained in the blood serum and was not due to any influence exerted by the leucocytes. In reply to Pfeiffer the above-mentioned experiments were advanced by Cantacuzène in support of Metchnikoff's theory, and apparently no attempt has been made to apply the knowledge gained to the practice of medicine.

I have undertaken the following experiments with the object of throwing further light on this important question.

Experiment 1.—An emulsion was made from a 24 hours growth of staphylococcus aureus on agar slope in 1 per cent. sodium citrate. A dog was given half a grain of morphia subcutaneously. One volume of dog's blood and one volume of citrate emulsion were mixed together and incubated at 37° for 15 minutes. The number of bacteria was counted in 25 polymorph leucocytes: before morphia, 123; half hour after, 64; one and a half hours after, 29. After the morphia injection the dog became slightly drowsy.

Experiment 2.—A guinea-pig was given half a grain of morphia subcutaneously. One hour later two cubic centimetres of broth were injected into the peritoneal cavity. Three hours after giving morphia one cubic centimetre of an emulsion of staphylococcus aureus in normal saline, killed by heat, was injected into the peritoneal cavity. Fluid was withdrawn from the peritoneal cavity half an hour after giving the emulsion. The bacteria in 25 polymorph cells were counted: morphia guinea-pig, 89; control, 168.

Experiment repeated. 60 cells were counted: morphia guinea-pig, 59; control, 162.

Fluid was much more easily withdrawn from the control than from the morphia guinea-pig, and the exudate from the former was much richer in leucocytes. After 24 hours the exudate was again examined. In the control the cocci in the leucocytes were for the most part swollen up and stained badly, while those in the white cells of the morphia guinea-pig showed little change. After giving morphia the guinea-pig showed slight signs of narcosis.

Experiment 3.—A guinea-pig was given one-quarter grain of morphia hypodermically. Three-quarters of an hour later two cubic centimetres of broth were injected into the peritoneal cavity. Peritoneal fluid was removed after two hours and mixed with 2 per cent. sodium citrate, and the leucocytes were washed twice in normal saline. One volume of washed cells, one volume of own serum, and one volume of emulsion of staphylococcus aureus were mixed together and incubated at 37° C. for 15 minutes. Morphia guinea-pig, 2 in 30 cells; control, 21 in 30 cells.

Experiments were also made to see if morphia inhibited the growth of staphylococcus aureus. It was found that a plentiful growth took place in 10 cubic centimetres of broth containing 1-10th of a grain of morphia.

From the above experiments it would seem that morphia exerts a marked influence on the leucocytes. Not only does it check diapedesis, but phagocytosis is diminished in a marked degree. The growth of bacteria, on the other hand, is not appreciably affected.

Let us consider for a moment what bearing this has on the practice of medicine and surgery. It is probable that in most surgical operations a certain number of pathogenic organisms gain entrance to the wound, however carefully asepsis be observed. The further history of the case turns on this point. Will the phagocytes be able to destroy these bacteria before the latter have multiplied sufficiently to gain the upper hand? If morphia temporarily paralyses the activity of the phagocytes, if this drug be given time is lost during which the bacteria multiply. When the narcosis passes off the phagocytes may be unable to destroy the bacteria on account of their number and the paralysing effect of the toxins produced by them; in fact, by giving morphia the chances of sepsis have been increased.

---

[1] Annales de l'Institut Pasteur, 1898.

Again, consider the case of an acute infection such as lobar pneumonia. From the onset we know that a certain number of pathogenic bacteria are present at the site of inflammation and that the progress of the disease will depend largely on the extent to which these bacteria multiply. At the beginning of the case, when there is little secretion in the bronchial tubes and the cough dry and extremely painful, it is a common practice to give morphia, put the patient to sleep, and "reserve strength for the time when he must remain awake and cough or die of suffocation." Here, again, the phagocytes are placed *hors de combat* at a time when they should be particularly active. The bacteria steal a march when the phagocytes are asleep; they multiply and the phagocytes recover from their lethargy to find their task infinitely greater than before.

Lastly, let us take a case of early appendicitis where the symptoms are obscure and palliative treatment is adopted to await further developments. Text-books generally say in such a case, "A little morphia may be given to check peristalsis and quiet the patient, but not much, since it tends to mask the symptoms." Not only does it mask the symptoms, but it muzzles the phagocytes. When the latter recover their vitality, even though they be able to overcome the bacteria, the reaction is much greater than it would have been had the phagocytes been free to act from the first; more fluid is poured into the tissues of the inflamed appendix and the danger of strangulation and subsequent sloughing is so much the greater.

I have much pleasure in thanking Colonel D. Semple, R.A.M.C., director of the Central Research Institute, Kasauli, for the valuable help he has given me in placing material at my disposal.

N.B.—In The Lancet arriving by last mail I have read with much interest a paper on the Relation of Alcohol to Immunity by Dr. P. R. Parkinson.[2]

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Serum Diagnosis of Syphilis.—Grafting Fœtal Cartilage.

A meeting of this section was held on Feb. 15th, Dr. F. W. Mott, the President, being in the chair.

Dr. H. R. Dean read a paper on Some Factors in the Serum Diagnosis of Syphilis. During the examination of a series of 368 cases the opportunity was taken of making a number of comparative observations with a view of determining the importance of the various factors concerned in the reaction. In 158 cases alcoholic extracts of normal guinea-pigs' heart were compared with watery extracts obtained from syphilitic liver. The results appeared to show that the extract from syphilitic material was a more delicate reagent. In the majority of cases, however, a good extract of normal organ gave quite reliable results. In the standardisation of extract it was necessary to accurately determine (1) the dose of extract which by itself absorbed the usual dose of complement; (2) the dose of extract which in the presence of normal serum absorbed complement; and (3) the dose of serum which in the presence of syphilitic serum absorbed complement. A good extract was one which with syphilitic serum completely absorbed complement in a dose which was much smaller than the dose which absorbed complement in the presence of normal serum. The capacity possessed by many extracts in a marked degree of absorbing complement, in the presence of normal serum, was of great importance, and led to error unless the extract was carefully standardised. In using the original Wassermann method it was advisable to test the strength of the hæmolytic system immediately before carrying out the main test. In this way an indication was obtained of the complement content of the guinea-pig's serum. In employing the test two extracts should be used. The normal amboceptor present in human serum was subject to marked variation in amount. In the Wassermann test, in which a hæmolytic serum derived from the rabbit was always added, the question of excess of hæmolytic amboceptor was the only one which arose. Several of the sera examined gave marked positive reactions and were nevertheless found to contain very large amounts of normal amboceptor. In the case of one positive serum 0·1 cubic centimetre was found to contain ten times the minimal lytic dose. The normal amboceptor was removed from a series of sera by saturation with sheep's corpuscles. After the removal of the amboceptor the sera gave only a slightly more marked reaction. The number of cases in which the normal hæmolytic amboceptor was absent was small, but in many cases it was only present in small amount. Bauer's modification relied entirely on the presence of the normal amboceptor. There was a danger that the serum investigated might contain just sufficient amboceptor to produce hæmolysis in the control tube, containing serum alone, but might be unable to produce hæmolysis in the tube which contained serum + extract and thus a positive result might be simulated. It must not be forgotten that extract and normal serum possessed considerable power of absorbing complement. A control of normal serum and extract was not satisfactory, for if the control serum was rich in amboceptor and the serum to be examined poor in amboceptor the experiment was misleading. The subsequent addition of a further amount of normal serum in cases where the amboceptor was deficient was not free from objection, since complement might be fixed by extract and the double quantity of normal serum. In Stern's modification the fresh human serum was employed and the complement of the guinea-pig was not used. The larger percentage of positive results obtained by Stern's method were to be attributed to the fact that unheated sera were known to react more powerfully or to the well-known variations in the complement content of human serum. There was much evidence that the reaction with unheated sera, although more readily obtained, tended to be non-specific. A series of 87 cases had been examined by Stern's method and by Wassermann's method. The sera were also titrated to determine the complement content. 23 cases were positive by Stern's method and 14 were positive by Wassermann's method. Of the 9 cases which were only positive by Stern's method 4 were shown to be deficient in complement. The entire object of the experiment was to test the deviation of complement, and it was essential that each tube should receive an equal dose of complement. It was possible when the complement content of the serum was small for hæmolysis to occur in the control tube but not in the tube which contained the serum + extract. A positive result was thus simulated. Hecht depended entirely on the normal human amboceptor and the human complement. The objections which applied to the methods of Bauer and Stern applied with double force to that of Hecht. The best method was that in which the conditions of the experiment, and especially the dose of complement, were constant in each tube. Although the modifications mentioned gave in practice good results the original method was more reliable and the liability to error was smaller.

Mr. S. G. Shattock, Mr. L. S. Dudgeon, and Dr. C. G. Seligmann communicated an interim report upon their work of attempting to produce Cartilaginous or Osseous Tumours, the whole of the expenses of which had been defrayed by the Imperial Cancer Research. The attempt to raise a chondroma by the grafting of fœtal cartilage had often been made since Cohnheim enunciated his well-known theory of tumour-origin. It was clear that the simple tumour transference of embryonic or of growing cartilage from one animal to another of the same, and *a fortiori* of a different, species was fruitless. The authors had formulated a working hypothesis before commencing investigations, which was: that the different tissues of the body tended *per se* to grow without limit, and that the growth of any one tissue in particular was restrained by substances produced by all the rest; the hypothetical substances might be named Restraining bodies—Corpora cohibentia. They were not lysins, for the indefinite growth of a given tissue (e.g., cartilage) was not prevented by the lytic destruction of a surplus formation of it. Bashford, Murray, and Haaland's memorable experiment, which showed that an extract of mouse skin inhibited the growth of a subsequently made graft of mouse epithelioma, might be explained by the sum of the bodies which restrain the unlimited growth of skin having accumulated and being loosely fixed in the skin itself, and, as Bashford and Murray had also shown, blood had the same power, but in less marked degree. The work of the authors consisted in grafting the living bones of fœtal rabbits beneath the skin of other rabbits, not once but at regular intervals, and in considerable quantity, with the object of exhausting the "restraining bodies." They had selected for the animals to be grafted young rabbits and does which were kept regularly pregnant with the object of aiding the projected result. Six or eight fœtal long bones were inserted at each sitting. Of the two does used, one had up to the present received subcutaneous insertions of fœtal bones on five occasions, and had been pregnant seven times; the other had had fœtal bones inserted on seven occasions, and had been pregnant eight times. The authors, as they proceeded, had made the important modification of using the progeny of each doe to furnish the grafts inserted beneath the skin of the mother herself. The epiphyseal ends of the grafted bones underwent a certain amount of enlargement, but as yet no tumour had arisen. In the case of one of the does thyroid extract was now being administered. The authors proposed to test the possibility of the grafting having increased the output of restraining bodies by injecting the blood of these animals into others, with the object of producing anti-antibodies which might allow of the growth of fœtal bones grafted into the second series of rabbits so prepared.

---

[2] The Lancet, Nov. 27th, 1909, p. 1580.

CLINICAL SECTION.

Exhibition of Cases.—Aneurysm of the Descending Thoracic Aorta.

A meeting of this section was held on Feb. 11th, Mr. A. Pearce Gould being in the chair.

Dr. StClair Thomson showed four cases of Epithelioma of the Larynx after Operation. These four cases were interesting from several points of view. All of them showed the safety of the operation of laryngo-fissure. One of them had remained without recurrence for nearly six years. In one case both vocal cords were completely removed, and yet the patient had a loud, strong, though harsh voice, and was free from recurrence two years and four months after operation. This case was also noteworthy because the whole operation was done under local anæsthesia and because part of the thyroid cartilage was excised at the same time. The third case showed a good voice one year after operation. In the fourth case laryngo-fissure had to be followed by complete excision of the larynx. The result was particularly interesting, as the patient was enabled to speak and to carry on much of his respiration through his nose and mouth by means of a von Bruns tracheotomy cannula. This patient was seen in February, 1909, reporting that his voice had not been strong for a year. The cords moved, but not freely, being impeded by an infiltration into the right vocal cord, of which the anterior third was ulcerated and the posterior two-thirds were white and warty. Laryngo-fissure under chloroform was performed on Feb. 25th. By May last the patient had a rough, strong voice, but by the end of that month thickening appeared over the anterior end of the right ventricular band, and stenosis with stridor slowly set in. The larynx was completely removed on Dec. 6th. The extremity of the severed trachea was attached to the front of the neck and the opening into the larynx was closed with catgut and the muscles sewn together over this. It was intended to cut off all communication between the mouth and the lungs; but these stitches broke down, leaving a good-sized opening into the pharynx and necessitating careful plugging and feeding with a nasal stomach-tube. The result was much more satisfactory than if the stitches in the pharynx had all held, for as the wound steadily closed by granulation the opportunity was taken of keeping open a track by means of an inverted rubber tracheotomy-tube. Into this track later the lobster-tail part of a von Bruns artificial larynx was fitted. Through this, by closing up the orifice in the neck, the patient when at rest was able to carry on respiration comfortably through his nose. The instrument also permitted of his talking freely in a strong whisper.

Cases were also shown by Dr. H. Morley Fletcher, Dr. Frederick Langmead, Mr. Albert Carless, Mr. Edred M. Corner, Dr. E. Rock Carling, Mr. Arthur E. J. Barker, and Mr. W. Douglas Harmer.

Dr. W. Essex Wynter read a paper on a case of Aneurysm of the Descending Thoracic Aorta associated with Dilatation of the Arch. The patient, a male aged 58 years, had enjoyed excellent health till January, 1906, when he commenced to suffer from dull aching pain in the left side of the chest, back, and axilla. When under observation from Feb. 21st to March 7th, 1907, the heart's apex beat was in the anterior axillary line, fifth space, dulness extending from this point to the right edge of the sternum. The first sound was normal, but the second was accentuated over the aortic cartilage. The heart sounds could be heard, though indistinctly, below the left scapula. There was tracheal tugging. Pain was so severe at night that the patient could not remain in bed. A skiagram revealed a shadow indicating considerable enlargement of the heart, and another above this projecting to the left of the vertebral column, indicating aneurysmal dilatation of the arch and descending portion of the thoracic aorta. He was treated with potassium iodide, but was unwilling to remain more than a fortnight, and left in much the same state. The condition, on the whole, grew worse, and when seen again the skiagram showed considerable enlargement, both of heart and aneurysm, the shadows occupying quite a third of the thorax.

MEDICAL SOCIETY OF LONDON.

The Cerebellum and its Affections.

A meeting of this society was held on Feb. 21st, Dr. Samuel West being in the chair.

Dr. J. S. Risien Russell delivered the second of the 1910 Lettsomian lectures on the Cerebellum and its Affections. He said that although the same morbid conditions may be met with in the cerebellum that affect the cerebrum, vascular lesions are uncommon and tumours are most often responsible for disordered function of the organ. The same general symptoms occur as in the case of intracranial tumours in other situations. Optic neuritis is liable to set in early, to be severe, and to lead to rapid loss of sight and consecutive atrophy. His own experience had been in accord with that of those who are of opinion that when neuritis begins in one eye before the other, or is more intense in the one eye, this usually corresponds with the side of the cerebellum in which the tumour is situated. Leslie Paton had arrived at the conclusion that optic neuritis has not this localising value in intracranial tumour, but in the discussion that followed the reading of his paper Sir Victor Horsley expressed himself as diametrically opposed to this conclusion, and Sir William Gowers also considered it at variance with the weight of evidence. In discussing the disorders of equilibration that may result from tumours of the cerebellum, reference was made to the remarkable provision which exists in the central nervous system for compensating defects of the cerebellum, and which explains why in some cases of tumour in the organ so little evidence of disordered function may be forthcoming. The observations of Grainger Stewart and Gordon Holmes are regarded as of special value as indicating the symptoms and physical signs to be expected from cerebellar lesions in man, as so many of them are based on cases in which operations for the removal of tumours from the cerebellum had been performed, which made the results comparable to those of ablation experiments in the laboratory. The sense of rotation of external objects experienced by the patient, irrespective of whether the tumour was intra- or extra-cerebellar, they found to be from the side of the tumour to the opposite side as the object appeared to pass in front of the individual. The sense of rotation of the patient was in this same direction when the tumour was intra-medullary, but in the opposite direction when it was extra-medullary. The attitude described as the result of unilateral ablation of the cerebellum, in which the head inclines to the homo-lateral side while the chin points to the contra-lateral, is met with in some cases, but, as has been pointed out by Batten, is not a reliable sign, as in some cases the head inclines to the contra-lateral instead of the homo-lateral side. The irresistible feeling which compels the patient to lie on the normal side and which is independent of any sense of vertigo was referred to, as was the inclination which there is for him to deviate from a straight line towards the side of the tumour in walking, and the erroneous impression to which over-correction of this tendency with staggering to the opposite side may lead. The homo-lateral relations of the cerebellum to the spinal cord, emphasised in the first lecture, were further brought out by the defects to be ascribed to tumours of one lateral lobe of the organ. These include inability to stand as well on the homo-lateral leg alone as on the contra-lateral one, incoördination in the movements of the homo-lateral limbs, including the phenomenon described by Babinski as "diadococinesia," in which attempts at rapid movements of pronation and supination of the forearm result in awkward, slow, and imperfect movements of the kind. Paresis with atonia of the muscles of the homo-lateral limbs may often be determined, and the hypnotic condition of the muscles is responsible for a phenomenon on which Stewart and Holmes laid special emphasis; when resistance that has previously been exerted against a movement such as flexion of the forearm is suddenly removed the movement is continued to an extent that does not occur in a normal limb, and none of the normal recoil is seen. Although exaggeration of the knee-jerk in greater degree on the homo-lateral side is one of the results of unilateral ablation of the cerebellum which he (the speaker) determined, no such constancy is to be expected in cases of tumour in man, for the knee-jerks are most variable under these circumstances; indeed, the way in which they may vary in the same patient within short periods of time is rather a characteristic of tumours of the cerebellum. The abdominal and plantar reflexes are not altered in uncomplicated cases of cerebellar tumour, so that absence of the former or the extensor type of the latter should suggest involvement of the pyramidal system in the pons or elsewhere. Defective power of movement of the eyes to the homo-lateral side, with in some cases even a slight tendency to conjugate deviation to the contra-lateral side, are phenomena to be looked for, as is paresis of the external rectus on the homo-lateral side, and lateral nystagmus in which the jerks are coarse and slow when the eyes are directed to the side of the lesion, and small in range and rapid when they are turned in the opposite direction. Apart from the optic nerves, the sixth is the only one that is liable to suffer in intra-cerebellar growths, whereas in extra-cerebellar tumours other nerves may be involved, notably the facial and auditory. Other phenomena which serve to distinguish intra- from extra-cerebellar growths were discussed, and in pointing out that defects which are to be ascribed to destruction of cerebellar tissue are not to be expected in extra-medullary tumours, emphasis was laid on the absence of homo-lateral paresis in these cases, in which, nevertheless, contra-lateral paresis of the spastic type, with possibly the extensor plantar reflex, may result from pressure of the tumour on the pons. Tumours of the middle lobe of the cerebellum occasion symptoms that are similar to those which result when the lateral lobe is affected but are bilateral. The patient may tend to fall to either side, and there may be a special tendency to fall backwards or forwards. The proximity of the cerebellum to the pons, and the important connexions which exist between these two parts of the central nervous system, make it important to be able to distinguish the effects produced by tumours of the pons from those which result from tumours of the cerebellum. The outstanding feature is spastic paralysis, with its usual accompaniment, which is commonly bi lateral; but crossed paralysis, in which there is paralysis of one or more of the cranial nerves on one side and of the limbs on the other, may occur instead. Any of the nerves which take their origin from the pons and medulla may be affected, and not only those usually involved by tumour of the cerebellum, in addition to which their affection is commonly bilateral. Optic neuritis is much less common than is the case with cerebellar tumours, and may only appear in the final stages of the illness. It is generally recognised that when the source of infection is the middle ear the most common seats of intracranial suppuration are the temporo-sphenoidal lobe of the cerebrum and one lateral lobe of the cerebellum. The clinical pictures produced may be very definite and easy to distinguish, but in a large proportion of the cases it is otherwise, as but few, if any, localising signs can be determined. A case of abscess of the right lateral lobe of the cerebellum recorded by Acland and Ballance was referred to in which the patient lay curled up on his left side with all his limbs flexed. His eyes were deviated to the left and presented lateral nystagmus. The right arm was markedly weak, while both lower limbs were slightly so. The right knee-jerk was brisk, and, of course, greater than the left. A case reported by Wilfred Trotter was also quoted, in which, with a left cerebellar abscess, conjugate movement of the eyes to the left was weak, nystagmus was most marked when the patient looked to the left, the knee- and ankle-jerks were exaggerated on the left side, the left arm and leg were weak and ataxic, while the arm revealed marked continuation of flexion at the elbow without recoil when resistance that had been exerted was removed. Such complete pictures are rare, but enough may commonly be determined on which to base a correct diagnosis. Nystagmus is one of the most constant signs, and although actual conjugate deviation of the eyes is rare, weakness of the conjugate movement to the side of the abscess can often be determined, with or without an added weakness of the external rectus of the homo-lateral eye. Paresis of the homo-lateral limbs, especially of the arm, is becoming more and more recognised as part of the clinical picture that may result from abscess of the cerebellum, and the same may be said of exaggeration of the homo-lateral knee-jerk. Aphasia supplies one of the most certain signs of abscess of the temporo-sphenoidal lobe, but is usually only helpful when the left side of the brain is affected and not always then. Logan Turner regards an inability to name objects as a sign of great diagnostic value, the absence of which would favour the probability that the abscess is in the cerebellum. When hemiplegia exists it is on the contra-lateral side, commonly includes the face, is of the spastic type, and is accompanied by the extensor type of plantar reflex, none of which features belong to the hemiparesis of cerebellar origin. As the hemiplegia is sometimes produced by pressure on the crus cerebri, third nerve paralysis on the side homo-lateral to the abscess may occur, while irrespective of these other phenomena a dilated stabile pupil on the same side as the abscess is comparatively common.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Gonorrhœa and the Gonorrhœal Infection.—Exhibition of Specimens.

A MEETING of this society was held on Feb. 4th, Dr. J. B. HELLIER, the President, being in the chair.

Mr. H. LITTLEWOOD opened a discussion on Gonorrhœa and the Gonorrhœal Infection. He discussed the subject under the headings of gonorrhœa in the male and female and the extension of the disease (1) by epithelial continuity, (2) by the lymphatics, and (3) by the blood stream. In his opinion a large number of cases recovered by rest in bed and the use of purgatives and alkaline diuretics without local injections. Abortive treatment in the male if carried out should be done by the surgeon and not left to the patient. There were, however, a good many unsatisfactory semi-chronic and chronic cases which were very difficult to treat successfully by the usual methods—e.g., gleet and gonorrhœal rheumatism. He thought that the articular complications were not regarded seriously enough in the early stage and that ankylosis, which so often resulted, could be prevented by aspiration, early movements, &c. In the chronic cases better results seemed to be obtained by vaccine treatment than by any other means, and he thought the time was rapidly approaching when the vaccine treatment would supersede all other methods in the treatment of both the acute and chronic conditions.

Dr. A. G BARRS said that in his experience fatal complications of gonorrhœa were extremely rare. He had found, however, that certain obscure cases of pyrexia had been due to unrecognised gonorrhœa, principally in men. He commented very strongly on the necessity for local, especially surgical, treatment of gonorrhœa of the joints and gonorrhœal arthritis; if aspiration were not successful, then incision and drainage should be attempted; if active surgical interference was not adopted it was important to secure a good position of the limb, a detail which was not infrequently neglected in treatment in the medical ward.

Mr. J. F. Dobson said that in cases of chronic urethritis he had not found the urethroscope of much value. He thought that instillations into the posterior urethra were on the whole fairly efficient, but must be carried out daily and by the surgeon himself. The surgical treatment of arthritis should consist in open incision, washing out the joint, and immediate closure. Those cases in which considerable effusion of fluid was present were most likely to benefit by this form of active interference.

Dr. Myer Coplans said that in a recent investigation of 30,000 patients discharged from the Navy with reference to simple continued fever he had been struck with the large proportion of men who had had gonorrhœa and had thought that some causal relation possibly existed. He said that in gleet other organisms were present so that no two cases of gleet were alike. The best results were obtained by isolating the organisms in a particular case and treating with the appropriate vaccines prepared from them. In the Navy the results had so far been excellent. In affected joints the organisms were in all cases gonococci and might be treated with a vaccine obtained from an acute case. In acute gonorrhœa variable results had been obtained by vaccine treatment, and some authorities had now given up this form of treatment in the early acute stage. In practice the taking of opsonic indices was not necessary. It was useless to administer a vaccine or serum in any case in which a collection of pus was present, because pent-up toxin would be liberated and more harm than good would be done.

Mr. H. Collinson said that in all cases injections should be made by the surgeon, as when left to the patient they were useless because they reached only as far as the compressor urethræ, and consequently did not come in contact with the affected part.

Dr. E. O. Croft referred to the importance of diagnosis of gonorrhœa in the female and of the facts of bacteriological pathology which had proved valuable as a guidance to treatment both in the initial stages of the disease and in the operative treatment of gonococcal pelvic suppuration. He said that the detection of gonococci in the discharge was only occasionally useful. In recent acute cases when the gonococci were more easily detected the clinical signs were usually fairly obvious, but in the more chronic conditions where differential diagnosis was important the organisms were difficult to find owing to the depth of their lurking places, and diagnosis then had to be largely based on certain clinical signs together with a careful history. He was not in favour of curetting and vigorous antisepsis in the early stages, and had obtained better results by less violent means provided the disease was recognised early and the patient treated in bed. In later stages curetting was occasionally useful. Of local applications the silver preparations were useful, but he had not noted that the organic silver preparations were more effectual than the inorganic silver nitrate. Formalin in suitable strengths had given good results. Radical operation in pelvic suppuration when due to gonorrhœal infection had usually been most successful when delayed until the acute symptoms had subsided. The pus was then either sterile or attenuated and non-virulent, especially when encapsuled in tubal or tubo-ovarian sacs. This localisation and automatic sterilisation were more frequent in gonorrhœal cases than in suppuration due to the streptococcus and other organisms. The latter more frequently infected the veins and connective tissue, as well as the tubes and peritoneum, and might require earlier surgical treatment.

Dr. A. Mackenzie said that he had had a large experience of cases in the military hospitals, and he found that the acute cases invariably got well on a milk diet and rest in bed without any other form of treatment. In private practice this good result was not obtainable, because patients would not take the necessary rest in bed.

The President showed: (1) An Oviduct thickened by chronic inflammation, probably gonococcal, the swelling being chiefly in the cellular tissue of the tube; and (2) an Ovarian Abscess of the size of a pigeon's egg, due to gonococcal infection of a Graafian follicle.

Mr. Littlewood showed Specimens of Two Stomachs, three-quarters of each of which had been removed for malignant disease; the patients had made good recoveries. He also showed a Perforated Appendix removed from a woman at the seventh month of pregnancy; she made a good recovery without aborting.

Other cases and specimens were also shown by Dr. O. C. Gruner, Dr. E. F. Trevelyan, Dr. T. Wardrop Griffith, Mr. Michael A. Teale, and Mr. J. Stewart.

Society of Medical Officers of Health.—A meeting of this society was held on Feb. 11th, Dr. H. Cooper Pattin, the President, being in the chair.—Dr. R. A. Lyster, county medical officer of health and school medical officer of Hampshire, read a paper on Problems connected with the Medical Treatment of School Children. Referring to the vague and unsatisfactory wording of the latter portion of Section 13 of the Education (Administrative Provisions) Act, 1907, Dr. Lyster said that it might well be doubted whether the Act really contemplated that money which had been raised for purposes of education could be spent upon individual medical treatment or whether the words "attending to the health and physical condition of the children" legally permitted such money to be used for hospitals, for philanthropy, or for carrying out duties that had been already placed upon Poor-law authorities. He pointed out that the fact that certain education committees had already undertaken duties connected with the spread of ringworm, vermin, and certain infectious diseases did not legalise further action in any way, and that these steps were obviously undertaken as a means of protection of other children rather than as a specific treatment for the individual. Furthermore, when it was suggested that a share of the responsibility for treatment was cast upon education authorities through such enactments as those dealing with the provision of meals, with the blind and deaf, and with epileptics and those who were defective, it must not be forgotten that with respect to all these the parent was liable for that part of the expenditure incurred which was personal and not educational. The Local Education Authorities Medical Treatment Act, 1909, had not materially altered the position, for in order satisfactorily to work this Act it would be necessary for an education authority to establish machinery for the investigation of the means possessed by all parents for whose children treatment was to be provided; to establish other machinery for recovering the cost of treatment; and there would also have to be compiled elaborate scales by means of which it would be possible to determine whether the authority was satisfied that the parent was unable to pay the required amount. The defects for which at the present time treatment was to be provided included sores of all kinds (including skin diseases), verminous conditions, ringworm, and discharging ears. These might be dealt with by the local sanitary authorities as a fairly reasonable extension of their present duties. In addition, there were to be treated conditions of the tonsils, adenoids, and defective teeth, and these might be taken over at once by the Poor law authorities, who had power to make special arrangements for operative treatment. Lastly, there was the question of eyesight. The testing of sight was not really a part of treatment at all, but was purely a part of medical inspection. It should be carried out easily and expeditiously by arranging for the examination of accumulated cases at special temporary centres, such as schools, on Saturday mornings. Prescriptions could then be issued and the parents could obtain spectacles at contract prices. Such a scheme had been working successfully in Hampshire for some time past. After discussing at some length the various arguments which have from time to time been adduced in favour of and against the medical treatment of school children by the Poor law authorities and by public health committees respectively, Dr. Lyster dealt with the question of school clinics, and one objection to this method of treatment which he raised was the fact that it dealt merely with a special small period of life. He considered that there was no valid reason why the ages 5 to 14 should be selected for the special provision of treatment, while the younger children and older persons were left entirely unprovided for. On the other hand, he considered that there would not be much to be said against school clinics if they could be managed under the ideal conditions of excluding those children whose parents were in a position to pay for treatment and of adequately paying the medical staff who carried out the work.—The discussion which followed revealed considerable differences of opinion among the members of the society, although to a certain extent they were upon points of detail.—Mr. F. E. Fremantle considered that they must go in for a system which should include the unification of the public medical services, and that they would only increase the confusion at present existing if they tried to prop up voluntary hospitals with public money. Until such reorganisation was assured he was averse to forcing the pace with regard to the medical treatment of school children. He urged the appointment by the Local Government Board of a departmental committee to consider the details of such reorganisation.—Dr. H. Meredith Richards strongly deprecated these proposals and considered that they should do all they could under existing conditions. The suggestion of a departmental committee was only another way of hanging the subject up. He did not think that there would be much opposition by general practitioners to school clinics provided they limited their sphere of action to ringworm, eye diseases, and dental work. He was very favourably impressed with the usefulness of the school nurse. —Dr. E. H. T. Nash approved of treatment being carried out by the general practitioner provided he was properly paid for it. He protested against a common practice of children's aid societies paying the railway fares of children to enable them to attend as out-patients at distant hospitals.—Dr. D. A. Carruthers considered that it would be extremely difficult to formulate a general scheme of treatment in rural districts, but he thought that the number of parents who were unable to pay for treatment had been underestimated. In certain districts in England he found that 57 per cent. of the children who required treatment were treated by their parents voluntarily, while in Germany where free treatment was obtainable the percentage ranged from 60 per cent to a maximum of 80 per cent. He thought that their greatest difficulty in securing treatment lay in the fact that medical inspection itself was not compulsory.—Dr. A. H. Bygott considered that the education authorities should pay a rent for the hospitals in which the school children were treated and should adequately remunerate the medical staff for doing the necessary work.—Dr. Lockhart E. W. Stephens was of opinion that as medical inspection of school children was an honest attempt to deal with the question of physical deterioration, so the State should provide the medical treatment found by the inspections to be needed. There should be no claim on the parents, but the children should be educated in such a manner that they would grow up into healthy men and women.—Dr. Sidney Davies agreed that medical treatment provided by the State was the complement of State medical inspection.—Dr. C Sanders thought that there would be great difficulties and many objections to any proposal that a scale of incomes should be drawn up in order to decide as to who should be entitled to medical treatment by the State.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb 4th, Dr. Neville T. Wood, the President, being in the chair.—Mr. W. McAdam Eccles showed a specimen of the rare tumour known as a "Retro-peritoneal Myxo-fibro-lipoma" which he had removed from a woman aged 39 years. The tumour weighed 19 pounds and 11 ounces after removal. The patient made an uninterrupted recovery.—Mr. Alban Doran mentioned the difficulties and dangers met with in these cases by himself and others—especially from the vessels coming from the aorta and the veins and occasionally from adherence of the capsule to the intestine, when resection might be imperative.—Mr. Eccles also showed a Gall-stone from the Small Intestine.—Mr. T B. Layton showed a Tumour of the Submaxillary Gland (5″ × 4″ × 4″). The patient had noticed some enlargement in this region all her life, but it had been enlarging during the last two years. On microscopic examination it was seen to have the same structure as the mixed parotid tumours. He also showed an "embryoma" of the testis removed from a man aged 28 years. It measured 6″ × 5″ × 4″. Microscopic slides were shown demonstrating a great variety of tissues, some epithelial, others mesoblastic.—Mr. J. McDonagh showed sections (microscopical) from nodules in the skin from two cases clinically resembling one another, one a case of a Late Syphilide, the other the case of Mycosis Fungoides shown by Dr. P. S. Abraham at the clinical meeting on Jan. 7th last. In both lesions the swelling consisted of a plasmoma, but the transformations of the plasma cells were quite distinct. Both cases gave a positive Wassermann's reaction, but Mr. McDonagh considered them to be histologically distinct.—Mr. N. Bishop Harman showed a mounted specimen of an Eye removed on account of injury. He said that though it was their duty to try to save an injured eye, if it was seriously injured and irritation continued for two or three weeks it was better to excise it. He also showed a Hair from an "Albino" Negro. The patient was a full-blooded negro, 20 years old, in excellent condition. He said that his father and mother and brothers and sisters were quite black.—Dr. Cairns Forsyth showed Six Gall-Bladders removed by operation: (1) gall-bladder showing calculous cholecystitis with carcinoma of the neck of the gall-bladder; (2) gall-bladder showing hour-glass contraction with carcinoma arising at stricture and invading liver; (3) gall-bladder showing chronic calculous cholecystitis; (4) gall-bladder showing hydrops due to impaction of stones in the cystic duct; and (5 and 6) gall-bladders excised for acute cholecystitis.—Mr. L. A. Bidwell showed a specimen of Carcinoma of the Rectum to prove that it was necessary to remove the peri-rectal fat in order to clear away the glands. The sigmoid in this case had been brought down and complete union with skin at the anus had taken place and both sphincters left intact. He also showed a large number of Gall-stones removed from a man, aged 43 years. About 300 were removed from the gall-bladder and 50 from the common duct.—Dr. J. M. Bernstein showed the following specimens: 1. Suprarenals from a case of Addison's Disease. 2. Œsophageal Cancer Perforating a Bronchus. 3. Puerperal Endo-parametritis, Septic Phlebitis, Phlegmasia Alba Dolens, and Pyæmia. 4. Ruptured Tubal Pregnancy showing Fœtus. 5. Fœtal Monstrosity. (Dr. Batteson's specimen.) 6. Phlegmonous Œsophagitis with Rupture into the Thorax occurring after a hearty Sunday dinner. The wall of the œsophagus showed the same condition as found in phlegmonous gastritis.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 10th, Dr. George Wilkinson, the President, being in the chair.—Dr. Sinclair White read a paper on Cancer of the Large Intestine based on 114 cases on which he had operated. He said that the sclerosing type of cancer was the one most often met with in the colon. It grew slowly, was late in infecting the glands, and when freely excised was followed by recurrence in a smaller proportion of cases than almost any other form of cancer. It was important to remember that nearly a third of the cases occurred in patients under the age of 40 years. The symptoms were usually indefinite until the growth had produced narrowing of the bowel. Then the co-existence of colicky pains and exaggerated peristalsis, with ever-increasing constipation, led to a diagnosis. The advent of obstruction should be the signal for colostomy, and advantage should be taken of the parietal wound to examine the growth and the abdominal viscera intra-peritoneally. Colectomy should not be undertaken in the presence of obstruction, because it was under any circumstances a dangerous operation and should be reserved for patients who were neither old nor feeble. There was a growing feeling in favour of the operation in three steps, even where obstruction was not imminent. By adopting the triple method the risk was reduced from upwards of 40 per cent. to less than one half that amount.—Dr. White also showed a woman, aged 72 years, on whom he had performed Rhinoplasty. The entire cartilaginous framework of the nose had been destroyed by a rodent ulcer of seven years' duration. After freely excising the ulcer, a suitably shaped frontal flap which included the periosteum and had its pedicle over the left inner canthus was raised and twisted into position. The large gap on the forehead was filled by a graft of the entire thickness of the skin taken from the chest. The wounds healed kindly and the æsthetic effect of the operation was remarkably good.—Professor J. M. Beattie and Dr. A. E. Barnes showed preparations demonstrating the Phenomena of Hæmolysis and its Applications in the Syphilis Serum Reaction of Wassermann, Neisser, and Brücke. Professor Beattie remarked that the reaction was certainly not specific but had been found on the continent to have great empirical value. It was found in scarlet fever, leprosy, trypanosomiasis, and some cases of tuberculosis.—Dr. J. Moir Mathieson showed a series of pathological specimens, among which were (1) the Brain of an Imbecile showing a Cystic Condition of the Cerebrum; (2) a Brain showing Left Hemiatrophy; (3) a Brain, the Left Hemisphere of which showed Arrested Development of the Fissure of Rolando; (4) a Brain, the Left Hemisphere of which showed Incomplete Porencephaly in Paretic Dementia; (5) Gall-stones Imbedded in the Peritoneum; and (6) Perforation of the Aorta and Œsophagus by a Needle.—Mr. A. C. Turner showed a young man with Alopecia Areata. The chief feature of the case was a red, depressed, glazed bald patch on the front of the scalp with great atrophy of the scalp tissues.

HARVEIAN SOCIETY.—A meeting of this society was held on Feb. 17th, Dr. M. Handfield-Jones, the President, being in the chair.—Mr. J. Gay French read a paper on "Some Points in Middle-ear Suppuration, its Sequelæ and Treatment." In dealing with the etiology he emphasised the severity of cases following scarlet fever, and also drew attention to oral sepsis as a factor in its causation. He then exhibited temporal bones showing perforations into the middle fossa and lateral sinus. In a brief account of the bacteriology he drew attention to a group of saprophytic organisms which under conditions of oral sepsis become pathogenic and cause when they attack the middle ear a very foul discharge unaccompanied by the formation of any protecting granulations. In dealing with the examination and treatment he entered a strong protest against the use of the syringe and the insufflation of powders, and directed attention to the importance of treating diseased conditions in the nasal, naso-pharyngeal, and oral cavities, the maintenance of free drainage, and the application of antiseptics preferably in the form of drops. Where possible he considered the best plan of treatment to be the passage of hot air medicated by antiseptics through the Eustachian tube into the middle ear, and showed an apparatus for the purpose. He used air at a temperature of 140° F., repeating the treatment for five minutes daily, and reported 8 cases in which the treatment had cured 5 and greatly improved the remainder, the average duration of treatment being about a fortnight. After a brief reference to vaccine treatment, he gave the indications for mastoid operation, and then spoke of some of the sequelæ of middle-ear suppuration, mentioning the good results he had obtained by fibrolysin in some cases of deafness and tinnitus.—In the discussion which followed, Dr. William Hill thought that Mr. Gay French went too far in his condemnation of the syringe. He failed to see the *rationale* of the hot-air treatment and recommended the use of protargol drops.—Dr. H. W. Fitzgerald Powell also thought syringing safe, provided proper methods were used, and emphasised the importance of treating nasal and post-nasal conditions.—Mr. W. Stuart-Low agreed with Mr. Gay French in condemning the syringe, and gave his experience of treatment with steam charged with kelvelin.—Dr. Andrew Wylie also condemned syringing, and said that he had used hot air, but for treatment of deafness, not suppuration, and gave statistics of 84 cases.—Dr. J. Atkinson drew attention to the importance of enlarging small openings in the membrana tympani and using a suction apparatus.—Dr. Dan McKenzie's experience of hot-air treatment had been unfortunate. He believed labyrinthine disease much commoner than supposed, and probably due in some cases to careless syringing.—Mr. E. Laming Evans congratulated the author, and Mr. Gay French replied.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Feb. 4th, Professor R. Muir, the President, being in the chair.—Dr. J. Miller read notes of the following cases treated by injections of bacterial vaccines:—(*a*) Tuberculosis of the Urinary System. 1. Male, aged 27 years, with tuberculosis of left kidney and ureter. Treatment by in all ten injections of tuberculin R., along with normal horse serum. Complete recovery. 2. Female, aged 22 years, with tuberculosis of bladder. Treated by five inoculations of T.R. and normal horse serum extending over three months. Marked improvement. (*b*) Tuberculous glands in neck. Two cases, a girl, aged 12 years, and a woman, aged 39 years. The former treated by 11 inoculations of 1-15,000th mg. T.R.; the latter by 12 inoculations of 1-10,000th mg. T.R. In both complete recovery. (*c*) Gonococcus Infections. Four cases: 1. Gonorrhœa in male. Vaccine prepared from patient's gonococci. Complete recovery after three injections. 2. Gonorrhœa in male, treated by mixed vaccine of gonococci and staphylococcus albus obtained from patient. Recovery after four injections. 3. Male with urethritis, arthritis of knees, conjunctivitis, and iritis. Treatment as in Case 2. Recovery after three injections. 4. Female with gonorrhœa (contracted from husband), arthritis, and conjunctivitis. Treated by vaccine prepared from husband's gonococci. Recovery after four inoculations. (*d*) Staphylococcus Infections. Four cases: 1. Man, aged 60 years, with carbuncle on neck, numerous abscesses over trunk and limbs, and cystitis, pyæmia, and severe glycosuria. Treated by vaccine prepared from patient's own staphylococcus pyogenes aureus. 24 inoculations given. Complete recovery. Cases 2, 3, and 4 had local infections more or less severe, with dyspepsia and slight glycosuria. Treated as Case 1 with complete recovery.—Dr. W. R. Jack read notes of four cases of Gonorrhœal Arthritis treated in Glasgow Royal Infirmary by vaccine therapy. 1. Male, aged 25 years, arthritis of both knees; gonorrhœa a year before; gonococci not found, but opsonic index low. Treated by six injections of a polyvalent vaccine at intervals of 4 or 5 days, beginning with about 4,000,000 cocci and increasing by 2,000,000 each time to a maximum dose of 10,000,000. Dismissed well in one month. 2. Male, aged 28 years. Arthritis of knees, shoulders, and wrist; gonorrhœa two years before; no organism found, but index low. Treatment as in Case 1. Dismissed well in six weeks. 3. Male, aged 31 years. Arthritis of knee, shoulder, and thumb; no improvement under salicylates; no history of gonorrhœa and no gonococci found, but index low. Treated as Case 1. Dismissed practically well after 7½ weeks' vaccine treatment. 4. Male, aged 29 years. Arthritis of left knee; gonorrhœa one month before admission; gonococci obtained from fluid in knee-joint and vaccine prepared. Four injections given and patient dismissed well in eight weeks.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Feb. 15th, Mr. Leonard A. Bidwell, the President, being in the chair.—Mr. Harold S. Barwell gave a demonstration of the Method of Direct Examination of the Larynx, Trachea, Bronchi, and Œsophagus with Brüning's Instruments, which depends on the fact that the trachea or œsophagus can be brought into a straight line with the mouth by fully extending the head and making forward traction on the moveable parts about the hyoid bone. After giving a brief history of œsophagoscopy, he showed that in Brüning's instrument the illumination is provided by a lamp fixed in the handle. The handle has two rectangular bends so that the actual grip is parallel to the tube and allows the forward traction to be made easily and steadily. There is a focussing lens, the mirror is adjustable, and can be swung backwards to allow of the introduction of the inner tubes. There is also a slide within the grip by which the lamp and mirror can be pulled away from the tube for nearly four inches to permit the use of intruments, but without interfering with the illumination. The distal end of the tube is cut away obliquely to facilitate introduction, and there is an inner tube which can be passed down, under inspection, by a spring marked to show the distance travelled. For bronchoscopy this inner tube is fenestrated to admit of breathing through one bronchus while the other is being explored, and, possibly, blocked up. The introduction can usually be made under local anæsthesia, but in sensitive or nervous people and children general anæsthesia is preferable. In these cases the left lateral position is the best, but the sitting posture when local anæsthesia is employed. The head is well extended and the instrument passed behind the epiglottis and downwards for half an inch. Forward traction then brings the larynx into view. To examine the œsophagus it is passed down close to the pharyngeal wall. The œsophagus always remains open one or two inches below the end of the tube and opens and closes with respiration to some xtent. There is no resistance till the phrenic opening is reached, and here the instrument, with gentle pressure, will enter the stomach. When in the trachea the scale should be watched and the bifurcation distinctly seen before attempting to enter either bronchus. The primary use of the instrument is, of course, the removal of foreign bodies, but it is also of great value in stricture causing bronchiectasis, stenosis of the trachea, and the removal of tracheal neoplasms. In the case of children, it has revolutionised the treatment of multiple papillomata of the larynx, which had previously been such a difficult problem. In the œsophagus it greatly facilitates the removal of foreign bodies, the diagnosis of malignant tumours, and the dilatation of impermeable strictures.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Feb. 11th, Dr. J. Lamond Lackie, Vice-President, being in the chair.—Mr. E. W. Scott Carmichael read a paper on Some Indications for Vaginal Fixation in Uterine Displacement. He said that following the teaching of Martin this operation had been performed on patients at all ages during the child-bearing period. In spite, however, of the results obtained by Martin and Dührssen, and their favourable reports of this operation in relation to childbirth, Mr. Scott Carmichael had not felt justified in performing it under the age of 40 years in his later cases, and in his opinion the true facts as to the cause of difficulty during childbirth after this operation had not been worked out. From the results of 20 cases in which he had operated he believed that the procedure was of undoubted value in cases of retroversion, prolapse, and cystocele, where the patient would not submit to an abdominal operation and where treatment by pessaries had proved inefficacious. In fixed retroversion it was of value where the adnexa were not involved by the inflammatory processes. In cystocele and mild cases of prolapsus uteri the symptoms could be entirely relieved by vagino-fixation. In following out the technique of Martin the uterus should be fixed to the anterior vaginal wall at a point 4·5 centimetres below the fundus, but if the patient had passed the menopause the point of fixation might be made nearer to the fundus. In the above class of cases next to the various methods for shortening the round ligaments vaginal fixation was to be preferred to ventro-fixation or ventro-suspension.—Dr. R. P. Ranken Lyle, Dr. J. Haig Ferguson, Dr. W. Fordyce, and others discussed the paper.—Dr. J. W. Keay read a paper on a Simple Perineal Operation for Relaxed Vaginal Outlet. A commencement was made by raising a flap from the lower end of the vaginal wall; into the right and left corners of the raw area Kocher's forceps were pushed through the fascial covering of the levator ani, and a portion of the muscle was grasped and pulled towards the median line and fixed there by strong catgut. By this means the vaginal outlet was narrowed and lifted up out of the axis in which the intra-abdominal pressure was directed downwards. The base of the flap was stitched to the fascial covering of the rectum, and the apex of the flap was stitched to the external wound, which was closed by a subcuticular stitch. In this way a new fourchette was formed, a strong perineum was obtained, and a vaginal sphincter of voluntary muscle was incorporated in the perineal body. Dr. Keay said that the operation was comparatively simple.—Dr. Lyle, Dr. Lackie, and others discussed the paper.

Reviews and Notices of Books.

Surgery: Its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; and JOHN CHALMERS DACOSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V. With 550 illustrations, 45 of them in colours. London and Philadelphia: W. B. Saunders Co. 1909. Pp. 1274. Price, cloth, 30*s.* net; half morocco, 34*s.* net.

WE welcome the appearance of the last volume of this most excellent System of Surgery, for it completes a work which will for years maintain its place as containing the best general account of surgery in the English language. Nearly 70 writers have contributed toward the making of this great work and of these two died before the appearance of the last volume. When the work was first suggested it was intended that it should have filled some 4000 pages. In carrying out the idea which the editors had in mind they have found it necessary to employ nearly 5500 pages, representing an increase of over 25 per cent. We congratulate all concerned in it on the completion of this great work, but especially are our congratulations due to Professor Knee for the manner in which he has carried out so arduous a task.

The contents of this volume are in no way less interesting than those in any of the preceding volumes. The Surgery of the Vascular System has been furnished by Dr. Rudolf Matas of New Orleans. This commences with an account of the surgery of the pericardium and of the heart. We cordially agree with the writer in his expression of opinion that incision of the pericardium for the purpose of letting out fluid, whether serum or pus, is far safer than aspiration or paracentesis, but Voinitch-Sianojentsky, whose work on the pericardium has been quoted, is one person and not two, as the writer apparently considers him to be. We do not think that the author lays sufficient stress on the compression of the great veins as they enter the heart and of the auricles as the essential part of the evil wrought by excessive intra-pericardial tension. He speaks of the increase in the intra-pericardial pressure interfering with the diastolic dilatation of the auricles and ventricles, but the effect on the auricles is vastly greater than that on the ventricles, because their walls are so much thinner. The fall in the general arterial pressure is entirely due to the interference with the supply of blood to the heart. A good description is given of the chief principles of the treatment of wounds of the heart. In the account of the surgery of the arteries we would especially commend the description of the rules for the tying of wounded arteries. The reasons of the methods employed are clearly given and the exceptions are explained. Arteriorrhaphy is of so modern an origin that it is only natural that we should seek with interest what a writer with so special a knowledge of the surgery of the arteries has said on the matter. The description is very full and is quite up to date. In speaking of the injection of saline solution, the author gives the temperature of the solution in the container as 120° F. We are certainly in favour of employing a higher temperature than that which is usually suggested, but we think that the temperature given here is a little above what is desirable. We are glad to see that the value of blood serum injections is recognised in the treatment of hæmophilia. Dr. Matas a few years ago devised an ingenious operation for the treatment of aneurysm, and this method is usually called after his name, though it has a name of its own, endo-aneurysmorrhaphy. The method is of distinct value and it is becoming more widely used; it is here described clearly. Altogether the surgery of the vascular system has been excellently treated.

The next section deals with the Surgery of the Female Genito-urinary Organs and occupies more than 230 pages. It has been divided between three surgeons; the first part, dealing with the methods of examination and with congenital malformations, has been entrusted to Dr. P. Brooke Bland of Philadelphia. The second portion, by Dr. John M. Fisher of Philadelphia, deals with the surgery of the vulva and the vagina. Both these sections are good, in particular the account of the treatment of ruptured perineum is very clear, and the illustrations representing the several stages of the operation are especially good. Dr. E. E. Montgomery of Philadelphia has written on the surgery of the uterus, broad ligaments, and Fallopian tubes.

Dr. John H. Gibbon of Philadelphia has contributed the chapter on Surgical Technic. In this are described the various methods employed in modern aseptic surgery and the materials used. An interesting contrast is afforded by reprinting an illustration from Sir Watson Cheyne's "Antiseptic Surgery" published in 1882, and one of a modern operating room. The contrast is certainly very great, but it can hardly be said that there is an equally great contrast between the results obtained.

Dr. Warren S. Bickham of New York has described the Ligation of the Arteries in their continuity, and the various illustrations given in order to show the relative position of the arteries to the surrounding structures are numerous and good. Dr. James Peter Warbasse of Brooklyn is responsible for the chapter dealing with the Operations on Bones and Joints. In this are described the various operations for resection of bones and joints, and the osteotomies. The chapter on Amputations is also from the pen of Dr. Bickham, and we need only say that it describes all the usual methods. Dr. John B. Roberts of Philadelphia has written an interesting chapter on Plastic Surgery, illustrated by some striking new pictures. The space at his disposal was hardly sufficient to deal with the subject adequately. Dr. W. L. Estes of South Bethlehem, Pennsylvania, has described the Surgery of Accidents in a short chapter. In addition to the ordinary injuries described those resulting from electricity are also mentioned.

The parathyroid bodies are assuredly very interesting, but we think their importance has been somewhat overestimated in devoting 16 pages to the consideration of the surgery concerning them. We say this without any wish to undervalue Dr. Charles H. Mayo's contribution, which is thorough, interesting, and well written. As is well known, much difference of opinion exists as to the function of the parathyroids; there are those who consider that the parathyroids are merely undeveloped thyroid tissue, and therefore in themselves of little value, and those who look upon them as of very great importance.

Dr. Charles H. Frazier of Philadelphia has written the chapter on the Surgery of the Fifth and Auditory Nerves. Not unreasonably he prefers his own incision route (the auricular temporal) for the removal of the Gasserian ganglion, and we agree that his operation is extremely good. This chapter is well illustrated.

Dr. Hobart Amory Hare writes the article on General Anæsthesia and Anæsthetics. He lays stress on the fact that ether is far safer than chloroform, and therefore maintains that it should be the anæsthetic of choice in ordinary conditions, though he acknowledges that ether has many contra-indications. The chapter contains all the essentials, but we think that it would be well to have placed the methods of resuscitation from an overdose of an anæsthetic in the same volume as that describing the use of the anæsthetics during which these methods might be required.

The late Professor Karl Lennander of Upsala, Sweden, wrote the chapter on Local Anæsthesia only a short time before his death, and the section on Spinal Anæsthesia was completed by his assistant, Dr. Fredrik Zachrissen. Professor Lennander expresses himself as strongly in favour of the mixture of novocaine and adrenalin for local anæsthesia, and he gives instructions as to the technique to be followed for local anæsthesia for different regions of the body and for different operations. The editor adds a small note on Bier's venous anæsthesia, which has yet to prove its value and innocuousness. Dr. Zachrissen's account of spinal anæsthesia is sufficiently detailed to prove useful. He acknowledges that certain difficulties still exist, but he believes that these will be overcome.

Dr. George E. Armstrong of Montreal has contributed the chapter dealing with the Surgery of the Infective Diseases. This is, we believe, somewhat of a novelty in a treatise on surgery, but there are obviously many good reasons for its inclusion. Typhoid fever and pneumonia are those acute "medical" diseases which are most likely to need surgical assistance, and naturally they receive more consideration than those in which the surgical complications are less common.

Dr. Ernest Amory Codman of Boston has written the chapter on the use of the X Rays and Radium in Surgery, which is somewhat original in treatment. It should prove very helpful to the surgeon in teaching him in what direction he may expect aid from skiagrams, and also, and this is equally important, how he may correctly interpret them when they have been obtained. Not the least valuable part of this section deals with the deleterious effects of the X rays. The description of the therapeutics of radium is disappointingly brief.

The Legal Relations of the Surgeon have been described by Mr. Hampton L. Carson, who is a member of the Philadelphia Bar and was formerly Attorney-General of the State of Pennsylvania. Nowadays when actions for malpractice are fairly common, and when surgeons frequently have to give expert evidence in court, it is well that they should devote some attention to the legal aspect of the profession. Although the laws of different countries differ somewhat in regard to the legal aspect of the acts of surgeons, yet the general principles vary but little, and therefore this chapter should prove of value even to surgeons practising in the British Isles.

Dr. William M. Late Coplin of Philadelphia has contributed a valuable little chapter on the Laboratory as an Aid to Surgical Technique and Surgical Diagnosis. It is chiefly concerned with the methods to be observed in obtaining tissues and other material for bacteriological examination, although a short account is given of the methods suitable for preserving specimens. Dr. Albert Gay Ochsner has devoted some 25 pages to the consideration of the Surgical Organisation of a Hospital. It deals with many points, from the number of surgeons required for a hospital to the method of election to the visiting and resident staff; it discusses the plans of a hospital and the methods of diagnosis of patients brought in insensible. Altogether it is likely to prove of service.

The perusal of the concluding volume of this System of Surgery has but served to confirm the favourable opinion which we formed on examination of the earlier volumes. We hope it will meet with the success it deserves, for the editors, contributors, and publishers have done their best.

Diet in Health and Disease. By JULIUS FRIEDENWALD, M.D., Professor of Gastro-enterology in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRÄH, Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Third edition, thoroughly revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 765. Price 18*s.* net.

THE question of diet practically involves a number of very complex considerations in which chemistry and physiology are commonly mixed up; and the general practitioner is, as a rule, too busy a man to follow the fine arguments contained in the great and many researches which appear from time to time upon the subject. He will be glad therefore to have a book available in which is collected the substance of the modern views held in regard to both the practical and theoretical side of dietetics. The authors' aim has been to produce a practical handbook for everyday use, and they have carried out their purpose with marked success.

We take this to be the meaning of the issue of a third edition of the book within five years of the issue of the first. The chapters present a simple classification of the subject, the chemistry and physiology of digestion being taken first. Then in the succeeding chapter the foods are divided into classes, the individual members being described in regard to their particular values, based first on their chemical composition and then on their digestibility. An excellent chapter on beverages and stimulants follows, in which a useful classification of natural mineral waters appears. Several waters are here mentioned which will be unknown to readers in Europe, but it is obvious that the United States possess a wealth of mineral water supplies, amongst which occur a number having a chemical composition similar to some of the waters of the well-known spas on the continent. An interesting chapter, and one which is remarkable for its terseness and yet for its wealth of detail, is that which includes the consideration of such important matters as the concentration and preservation of food, artificial food preparations, cooking of foods, food poisoning, auto-intoxications, idiosyncrasies, food adulteration, the detection of preservatives and colouring matters, and so on. Here within the compass of a few pages we have the *pros* and *cons* of difficult questions lucidly placed before us, and the practitioner cannot do better than follow the lead that is given him in each case.

The application of general principles commences in the chapters on diets for special conditions, diet in various diseases, and special methods of feeding, and here again the treatment of the subject is of an eminently practical kind. The book concludes with a number of rapid reference diet-lists, to which is appended a "sample pamphlet of information for distribution among the poor in summer" containing plain, sensible words on a subject of vital importance to every nation.

English Poor-law Policy. By SIDNEY and BEATRICE WEBB. London: Longmans, Green, and Co. 1910. Pp. 379. Price 7*s.* 6*d.* net.

Mr. and Mrs. Sidney Webb have compiled for the benefit of those interested in Poor-law reform, among whom members of the medical profession take a prominent place, a succinct and interesting analysis of the development of the existing Poor-law, because, as they suggest in their preface, "nothing of to-day can be really understood without its history." Five chapters out of eight in their volume are devoted to tracing the history of their subject, from the report of the Royal Commission of 1834 to the present day, and the remaining three chapters are entitled "The Majority Report of the Royal Commission of 1905–1909," "The Minority Report of the Royal Commission of 1905–1909," and "Summary and Conclusion." These last chapters, together with the second of two appendices containing "an extract from the Minority Report for Scotland, giving the reasons in favour of the complete supersession of the Poor-law," supply, no doubt, the original reason for the compilation of the historical chapters which precede them, and are interesting from a different point of view. As advocacy of the scheme of reform propounded in the Minority Report they are excellent, even though they display a tendency (from which the ablest advocates are not always free) to beg the very questions, the answer to which is what the reader wishes to have established by argument and by reference to proven facts. As criticism, a book the cover of which is inscribed "English Poor-law Policy, Webb," must take the same place as would one with the title "The Budget, Lloyd George," or "Tariff Reform, Chamberlain." Its arguments or expressions of opinion must be balanced against those of counsel on the other side; they must not be regarded as a judicial summing-up of the case.

The historical chapters, however, may stand by themselves without impelling us immediately to the consideration of the controversial questions which have been introduced from the desire of the authors to win support for the Minority proposals, and in accordance with a process which may be described in popular terms as "rubbing it in." Not the least interesting pages are those devoted to reviewing the gradual bringing into existence of the Poor-law medical service as we now have it, and the stages of its development through successive statutes, orders, circulars, and instructional communications. This development has been accelerated in recent years, and the general impression which Mr. and Mrs. Webb's summary conveys may be explained by saying that the care of the sick under the Poor-law has come nearer to attaining the objects propounded to those engaged upon it than has been the case in the other matters more exclusively the charge of the Poor-law guardians. If in the future the task assigned to the guardians is entrusted to others, together with a wider field of operations, in the expectation and intention of securing results more satisfactory as regards the social welfare of the nation than those exhibited in the past, the medical profession will play a part of increased importance. We shall, so to speak, "secure a better start" than was permitted under the legislation which resulted from the report of the Commission of 1834. Moreover, the improved position will be due to the efforts of the profession in the development of the science which it practises, in winning public recognition for that science, and in insisting upon the right of the humblest of the poor to participate in its benefits.

In the report of 1834, we read, the revolutionary proposals of the Commissioners with regard to the able-bodied, with which we are not here concerned, were accompanied by no suggestion of any change relating to the care of the sick, who up to that date were dealt with by outdoor relief, with or without medical attendance. There were, indeed, suggestions of improved institutional treatment of such defectives as lunatics and blind persons, but there was no reference to anything in the nature of a hospital in recommendations as to workhouses, and none as to indoor medical officers. The Act of Parliament which followed was, not unnaturally, equally silent upon the subject, and the Poor-law Commissioners, who during the period 1834–1847 were the central authority, do not appear to have suggested by their orders that any change of policy seemed to them desirable. The medical profession at this point can hardly be said to have obtained a footing in Poor-law administrative circles. The period which followed, that of 1847–1871, with the Poor-law Board as the central authority, witnessed "a slow and almost un-selfconscious development of a supplementary policy in respect to certain favoured classes of paupers—notably children and sick," although as the central authority as late as 1869 explained, the sick-wards of workhouses, which then at any rate existed in some buildings, "were originally provided for the cases of paupers in the workhouse who might be attacked by illness; and not as State hospitals."

The improvement is traced in the pages before us to a new policy of bringing pressure to bear upon boards of guardians to improve their medical attendance and medicine supplies. The "principle of less eligibility" recommended in the report of 1834 demanded that the conditions of existence afforded by the relief should be less eligible to the applicant than those of the lowest grade of independent labourers. The hardships involved in the enforcement of such a doctrine in the case of the sick are so obvious to us in the twentieth century that there is no need to dwell upon them, and the principle referred to was gradually abandoned under the Poor-law Board with regard to both indoor and outdoor medical relief. The new conditions of medical attendance, we are told, were "the outcome of a long campaign on behalf of the poorer members of the medical profession of which Wakley was the leader in the House of Commons, and THE LANCET the efficient organ." We read also that the insanitary conditions of the workhouses of the period (*circ.* 1847) and their excessive death-rate were "repeatedly brought to notice not only by irresponsible agitators, but also by such competent statistical and medical critics as McCulloch and Wakley." The more general institutional treatment of the sick had its origin during the same period, and received an impetus in 1864 when "the death of a pauper in Holborn Workhouse and of another in St. Giles's Workhouse, under conditions which seemed to point to inhumanity and neglect, led to an inquiry by three doctors (Anstie, Carr, and Ernest Hart) commissioned by THE LANCET newspaper, the formation of an 'association for improving the condition of the sick poor,' and a deputation to the Poor-law Board." From this period the history of the medical side of the Poor-law system has been one of improvement, both under the Poor-law Board and, since 1871, under the Local Government Board which succeeded the Poor-law Board in the performance of the same duties without any immediate change of function or policy. The tendency of recent innovation is to be gathered from a quotation from the thirty-second annual report of the Local Government Board, 1902–03, recording that "the workhouses of a past and bygone age are no longer refuges for the able-bodied, but are becoming every day more of the nature of State hospitals for the aged sick and infirm. As such they should be furnished with the very best nursing procurable."

We need not say anything as to developments within the scope of modern memory, as our readers are quite familiar with these, but they are adequately brought to the notice of the reader in this volume, and the importance attributed to the Metropolitan Asylums Board and its hospitals by Mr. and Mrs. Sidney Webb is very right and proper. Their book should be read with interest, particularly by those who, from their memory and experience or by the aid of literature at their command, are able to place side by side with the history of the Poor-law the record of outside social developments which have stimulated its evolution, and which are now apparently responsible for a demand for its abolition. It would be interesting to see traced accurately the extent to which Poor-law administration in medical and in general matters has lagged behind or has kept pace with contemporary progress and also how far the constant, if at times slow, advance made has been accelerated by the pressure of medical opinion. That this has been exerted unsparingly both inside and outside official circles will be gathered from Mr. and Mrs. Sidney Webb's book, and we cordially thank them for their recognition and appreciation of medical work (and incidentally of our founder and ourselves) in the field of Poor-law policy.

Atlas der Elektropathologie. By Dr. S. JELLINEK. With 96 plates and 16 figures in the text. Berlin and Vienna: Urban and Schwarzenberg. 1909. Pp. 103. Price 35 marks.

IN this volume the author has successfully undertaken the pictorial representation of the electro-pathological collection in the Museum of Forensic Medicine at Vienna. Not the least admirable feature of the work is the excellence of the illustrations with which the volume is profusely furnished. We understand that this is the result of a four-colour printing process which we may surely hope to see in more general use. The accurate and realistic rendering of the appearance of severe electric burns, scars, blistering of feet, and articles of clothing worn at the time of accident from electric shock is quite remarkable. The author describes his cases according to a definite system. Each one is more or less typical of its class, and after relating the circumstances that led up to the accident he proceeds to enlarge upon it in its clinical, forensic, and technical aspects. Incidentally, he affords convincing proof of the truth of the saying that "familiarity breeds contempt," since the majority of the accidents illustrated happened to electricians and those employed about electrical plant and installations generally—the very people who ought to, and probably do, know the precautions to be observed under any given set of conditions.

Plate II. illustrates an interesting and important point—the danger of having any electric light fitting within reach of a person in a bath. The author reconstitutes the conditions of the accident in every particular, down to the post-mortem appearances. And in this case we are told that death, which occurred from touching an electric light fitting while still in the bath, was so sudden that the girl had not breathed after receiving the shock. The body was found submerged, but no water had entered the lungs. In all cases the author points out the further precautions that ought to be taken to secure safety in addition to those usually practised in any given set of conditions. One fact impressed by the illustrations is that electrical burns heal very kindly, and leave soft elastic scars and little deformity behind. In Plate L., however, is shown a curious set of changes following an electric burn at the wrist-joint. There are thickening and deformity with atrophy of bone, as shown by an X ray examination. The patient concurrently developed symptoms of progressive paralysis. The penultimate section is devoted to the effects of lightning on the body and clothing. Here is shown a case of lightning-stroke characterised by loss of consciousness, aphasia, and crossed paralysis, and yet recovery was practically complete after three months. In the last section the author deals with the influence of stray earth currents upon water-pipes and shows how the electrolytic action thereby set up may be a cause of lead-poisoning. These are the salient features of a work which should find a place in every legal and medical library.

JOURNALS AND MAGAZINES.

Proceedings of the Royal Society of Medicine. Vol. III., No. 3. January, 1910. London: Longmans, Green, and Co.—The Section of Anæsthetics is included in this number with the discussion on Lymphatism, opened by Dr. R. Salusbury Trevor in a paper which should prove a valuable contribution to the literature of a subject of importance. Dr. Trevor gives a bibliography of cases of sudden death due to the disease and a full account of a case that came under his own observation. He sets before the section the following problems: (1) the cause of sudden death in lymphatism; (2) in what subjects to suspect lymphatic hyperplasia; (3) how to diagnose it; (4) how to treat it; and (5) how to conduct anæsthesia in patients who suffer from it. In the Balneological and Climatological Section is an interesting account, by Dr. S. D. Clippingdale, of the Natural and Medical Aspects of the Chiltern Hills and Dales, including the famous Parliamentary "Hundreds." In a day which echoes and re-echoes with abuse of landlords we are glad to read this testimony from a medical man to a famous landowner of the district: "In a typical 'Rothschild Village' the public-house is unknown, and the medical man goes about with an assurance from his 'over-lord' that the non-medical wants of the sick will not be neglected—a state of things reminiscent of the feudal system, with all its advantages but with none of its disadvantages." Mr. A. G. S. Mahomed follows with a paper on Atmospheric Electricity, in which he describes some observations upon atmospheric potential and advances a graphic theory of ionisation. In the Clinical Section the following cases are described. Acromegaly, by Mr. J. R. Lunn and Dr. Robert Milne, who also contributes two cases of achondroplasia; adiposis dolorosa, by Dr. G. McMullan, a case illustrated from two extraordinary photographs, as is a similar case described by Dr. A. M. Gossage; rheumatoid arthritis with albuminuria and enlarged liver, by Dr. W. P. Herringham; impaction of calculus in the ureter, by Mr. Albert Carless; a successful case of trephining for general epilepsy, by Mr. W. G. Spencer; two familial cases of congenital œdema and cardiac defect, by Dr. F. J. Poynton; resection of the bladder for malignant disease, by Mr. J. W. Thomson Walker; excavating rodent ulcer under treatment by radium, by Mr. Charters J. Symonds; pachydermatocele, by Mr. E. Archibald Smith and Mr. J. McDonagh; arterio-venous aneurysm with exophthalmos following an injury to the head, by Mr. F. Eve; Recklinghausen's disease, by Dr. F. Parkes Weber; and other cases by Mr. C. A. Ballance, Mr. J. D. Malcolm, and Mr. Percy W. G. Sargent. In the Dermatological Section, amongst many others, Dr. P. S. Abraham contributes a case of pemphigus vegetans, Dr. E. G. Graham Little a case of pigmented moles in a female child, and Dr. J. H. Sequeira two cases of mycosis fungoides, all of which are illustrated from excellent photographs. In the Electro-Therapeutical Section Dr. N. S. Finzi writes on radium in the treatment of malignant growths, in a paper characterised by the President of the Section in the subsequent discussion as "an admirable and just record of his work," which is the class of record needed, especially for the literature of radium. In the Laryngological Section, besides a large number of cases, Dr. R. H. Scanes Spicer's model to demonstrate the effects of what he calls "back" and "belly" breathing is described. In the Neurological Section Dr. James Taylor, Dr. E. Farquhar Buzzard, Dr. T. Grainger Stewart, Dr. Wilfred Harris, Dr. R. C. B. Wall, Dr. Arthur J. Hall, and Dr. Henry Head all describe cases. In the Obstetrical and Gynæcological Section Dr. P. D. Turner, Dr. A. H. N. Lewers, Dr. L. Garrett Anderson, Mr. J. D. Barris, Mr. H. J. Paterson, and Dr. Walter Tate describe interesting operations and specimens, and Dr. Clifford White contributes a note on a case of quadruplets born at the twenty-sixth week, two of which were stillborn, whilst one lived for half an hour and another for five and a half hours. Their weights were 10½, 11, 18, and 18 ounces respectively. Three ova were represented, the small children being uniovular twins. Dr. J. Abernethy Willett also describes the placenta and membranes from a case of quadruplets. In the Otological Section Mr. R. Lake and Dr. Norman H. Pike give a summary of the post-operative tests in eight cases of labyrinthine disease, and Mr. Herbert Tilley, Dr. W. Milligan, Dr. A. A. Gray, and Dr. G. N. Biggs make other communications. The Pathological Section is occupied by a valuable report on the systematic histological examination of the central nervous system of a case of transverse lesion of the spinal cord in the lower cervical region by Mr. S. V. Sewell and Mr. H. Hume Turnbull, and a note by Dr. Helen Chambers on a method for studying the action of blood-fluids and other substances on the leucocytes. The Surgical Section reports the discussion on the diagnosis and treatment of duodenal ulcer opened by Mr. B. G. A. Moynihan and recently reported in our columns, whilst the Therapeutical and Pharmacological Section reports a debate on the therapeutical value of the lactic acid bacillus opened by Dr. George Herschell, in which he utters the warning that many of the commercial preparations do not contain the genuine Bulgarian bacillus.

The Liverpool Medico-Chirurgical Journal.—This quarterly magazine may be relied upon for interesting articles, and the January number does not disappoint us. It opens with a historical sketch of Dr. John Rutter, founder of the Liverpool Medical Institution, written by Mr. Thomas H. Bickerton. Dr. T. R. Bradshaw deals in a clinical lecture with the management and treatment of chronic Bright's disease, and Dr. W. B. Warrington with that of diabetes mellitus, the latter writer being favourably impressed, it would seem, with the value of the "so-called oatmeal cure." Dr. John Hay discusses the condition of the heart in pulmonary tuberculosis, confirming the view that valvular disease of the heart seldom coexists with this affection; and Mr. Frank Jeans records very favourable results (eight recoveries) in ten consecutive cases of perforative peritonitis, emphasising the value of the "Fowler position" and the inexpediency of swabbing or irrigating the peritoneum. Mr. R. E. Kelly and Dr. Ernest E. Glynn record a case of pneumococcal meningitis following trauma, and Dr. William Seaman Bainbridge of New York reports unfavourably on the enzyme (trypsin) treatment of cancer, which neither checks the malignant process nor prevents metastasis.

Edinburgh Medical Journal.—In the February number Dr. Alexander Miles discusses some points in relation to compensation for injuries, and notes, as others have done, certain unfavourable aspects of recent legislation. Dr. A. Graham Butler and Dr. D. A. Welsh record a case of botryomycosis in man. Dr. Hugh S. Davidson writes on ovarian epilepsy and discusses its treatment, medicinal and operative; and an unsigned article on the State Registration of Nurses points out the practical unanimity which exists as to the desirability of the end, and also the divergences of opinion as to the means for attaining it.

The Medical Chronicle.—In the February issue is published a paper by Dr. Arthur F. Hertz on duodenal ulcer, which he regards as constituting a common disease, but one very amenable to medical treatment, thus contradicting the views which have been recently advocated that operation is called for in all such cases. Mr. A. H. Habgood discusses the incidence, signs, and complications of mitral stenosis in children, in whom this affection rarely occurs apart from other affections of the heart, and Dr. Alfred A. Mumford contributes a critical review of some recent writings on physical efficiency and the strain of school life, and emphasises the need for continuation schools and the value of learning a handicraft as a mental training.

Caledonian Medical Journal.—In the January number of this journal Dr. H. Cameron Gillies contributes a scholarly article on a Gaelic medical manuscript which almost certainly belonged to the family of Beatons who were hereditary physicians to the early kings of Scotland. Dr. Gillies prints several pages of the Gaelic original, together with an English translation. A discursive article on Anthropology by Dr. A. Macdonald of Inverness raises some interesting points. In the editorial paragraphs the members of the Caledonian Medical Society are asked to inform the secretary before March 15th whether they are favourable to holding the next annual meeting at Fort William.

MEDICINE AND THE LAW.

Medical Men's Attendance in Midwives' Cases: A Variant of the Usual Difficulty.

AT an inquest held recently at Sheffield an unusual phase of the difficulty as to fees when a medical man is summoned to a confinement attended by a midwife was presented, and it is to be noted that the good sense and tact of the coroner probably prevented the jury from taking upon themselves to blame the medical man for the death of the deceased. The evidence showed that the wife of a collier had been attended at her confinement by a woman named Lyons practising as a midwife but not on the midwives' roll. Owing to the condition of the mother before the child was born Lyons sent to ask a medical man to attend. He did not come, and another practitioner, Mr. W. F. Cockayne Bennett, was applied to, but refused unless his fee were paid. Afterwards the authority of the relieving officer was obtained and Mr. Bennett attended. The child had then been born two hours and the condition of the mother was such that she was removed to the hospital at once, where she died. Upon the question of the delay in medical attendance being raised Mr. Bennett narrated to the jury how on a previous occasion he had had a fee refused by the guardians on the ground that the case was not one under the Midwives Act, because the summons came some hours after the confinement, and because, in the view of the guardians, the need for his presence arose from the weak condition of the patient's heart and not from the childbirth. He explained before reading to the jury the guardians' letter received after the case referred to, that, although the guardians were now authorised by law to pay fees in cases under the Midwives Act, Mrs. Lyons was not certified, so that his application for a fee, made after medical attendance had been given, would probably have been refused. It was, in fact, a case which was not under the Act, although the sending for a medical practitioner may have been due to the course prescribed in cases to which the Act applies. Mr. Bennett appears to have put his position as a medical man clearly before the jury, explaining that having been refused a fee before in a letter, the terms of which were before them, he did not wish to lose his rest and at the same time lay himself open to a second refusal and to an attendance without remuneration. Members of the jury made observations in favour of and against his view, but in the end were guided to the expression of an opinion that "in similar cases the guardians should guarantee medical men's fees." Whether the person who attends a confinement be a certified midwife or not, it is unjust to expect a medical man to give as an act of charity assistance which, on the deliberate choice of the patient, a woman, whether qualified or not, has undertaken to supply in consideration of a fee. Moreover, persons entitled to have the attention of the Poor-law medical officer or of a medical man paid by the guardians should not expect a medical man to risk losing all payment owing to their omission to comply with the requisite formalities. After all, it is the relations, or the patient herself, who are primarily concerned with her safety, and it may be suggested that it might be useful, if it were possible, to obtain from the guardians a provisional order for medical attendance in the event of the necessity for it arising. This would apply in any cases like that above described, in which remuneration sought afterwards would possibly be refused. It may be noted that Mrs. Lyons referred to in the above case, who stated that she had practised as a midwife for nearly 40 years, will have to desist from so doing on and after April 1st. At all events, she will be liable to a fine of £10 if she practises habitually and for gain.

Fraudulent Use of the Name of a Medical Practitioner.

In THE LANCET of Nov. 20th, 1909, p. 1561, was published a letter from Messrs. Radford and Frankland, solicitors, stating that a person engaged in pushing the sale of a mineral water had been calling upon members of the medical profession and had been endeavouring to interest them in his goods by representing himself as the father of one of the assistant physicians at a metropolitan hospital, whom he named. This representation was untrue, and the letter published in THE LANCET was written with a view of stopping an extremely irritating, as well as dishonest, course of conduct likely to injure the reputation of the medical practitioner and of his father. The sequel of the case referred to has recently been made public at the Mansion House police-court, when Jacob Hertz, trading as Hertz and Co., appeared as defendant under two summonses. One of these charged him under the Merchandise Marks Act with having applied a false trade description to goods—to wit, that an "inhaler" sold by him was patented; the other summons charged the defendant under the Patents and Designs Act, 1907, with falsely representing the inhaler to be patented. The offence alleged in the two cases was practically the same, proceedings being taken under both Acts, because under the first mentioned it is a good defence if the defendant can prove that he acted without intent to defraud; under the second, falsely to describe an article as patented is an offence whatever the intent. The actual infringement of the Acts was due to the inhaler sold by Hertz bearing the inscription on its box, "Patent No. 347,538," but in addition to this there was pasted over a name previously used (the Simplex Inhaler) a strip of paper which caused the full title to appear as "The Dr. Hertz Perfect Inhaler." The inhaler was not patented in England, but it was stated at the police court that the number given referred to a German patent. This did not constitute a good defence according to the decision in the case of Wright, Crossley, and Co. *v.* W. Dobbin and Co., 15 Reports of Patent Cases, p. 21, so far as the fact of the false description is concerned, but it might have been open to the defendant to urge that no fraud was intended, in reply to the summons under the Merchandise Marks Act. In order that this defence might not be set up, however, proof was given that the defendant had not only added "Dr. Hertz" to the description of the inhaler (the surname, not the title Dr., being his), but that in arranging with Messrs. Allen and Hanburys for its sale and distribution by them had said that it was the invention and property of Dr. A. F. Hertz, assistant physician at Guy's Hospital, and also that Dr. Hertz was his, the defendant's, son. As a consequence of this Messrs. Allen and Hanburys in advertising the inhaler had sent out some thousands of circulars, supplied by the defendant, to the medical profession. This conduct of the defendant was rendered worse by the fact that before the name of Dr. Hertz had been inserted in the description of the inhaler the defendant had called upon medical men in pushing the sale of a mineral water, and had made the same representation that he was the father of "Dr. Hertz of Guy's Hospital," and had received a letter complaining of his so doing from Messrs. Radford and Frankland, Dr. Hertz's solicitors. It was at this time that they also wrote to THE LANCET the letter referred to above. The defendant denied that he had said that Dr. A. F. Hertz was his son, and alleged that the inhaler was the invention of a Dr. Hertz, formerly of Antwerp and now residing in California. The Alderman presiding at the Mansion House police court told the defendant that in his opinion he had committed a distinct fraud and fined him £20 with 10 guineas costs, and the alternative of one month's imprisonment. on the summons under the Merchandise Marks Act, and 5*s.* with 2*s.* costs, or seven days, on that under the Patents and Designs Act.

Workmen's Compensation and the Form of a Medical Referee's Certificate.

In the recent case of Jones *v.* Ebbw Vale Steel, Iron, and Coal Company, Limited, there was an appeal to the Court of Appeal which, strictly speaking, was against the award of the county court judge sitting at Tredegar, made in favour of a workman, a miner, after a certifying surgeon had certified that he was suffering from nystagmus, against which certificate the employers had appealed to a medical referee. The question at issue, however, really concerned the form in which the certificate of the medical referee had been given. The medical referee, under the regulations dated June 21st, 1907, is required to notify his decision in writing "in the form prescribed in the schedule to these regulations (subject to such additions and modifications as the circumstances of the case may require)," the form applicable to the case in question being "I dismiss (or allow) the appeal of —— against the certificate of disablement given to —— on the —— day of ——." The employers objected that the certificate given by the medical referee did not comply with the above form and did not state in terms whether or not the workman was suffering from the disease in question at the time when the certificate of the certifying surgeon was given. The Court of Appeal was of the opinion that the case must go back to the county court judge, but ultimately the parties arrived at a settlement. In commenting upon the regulation quoted and upon the form of certificate prescribed for the medical referee, the Master of the Rolls pointed out the great difficulty of applying such a form to cases of industrial disease of an intermittent character, because the medical referee was only authorised to dismiss or to allow the appeal, and he pointed out that it might not be possible for a medical referee to certify as to the condition of a workman on a particular date antecedent to his own examination of him. He suggested reconsideration of the regulation. It will be observed that the decision of the medical referee in such a case as the above has to be directed only to the question whether the certifying surgeon was or was not right, and that he is not asked to say whether in consequence of a change in the workman's condition since the examination by the certifying surgeon an alteration with regard to compensation should be made.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 26, 1910.

Beneficent Foreign Bodies.

As a rule, the presence of a foreign body in the tissues has a harmful effect. It acts as an irritant, and the resulting inflammation leads to softening of the surrounding structures, so that a cavity tends to form around it, and the irritation and inflammation persist until the foreign substance is extruded from the body by a process of breaking down of the tissues intervening between it and the surface. If this does not happen the surgeon must usually intervene. The concurrence of sepsis is especially aidful in bringing about intolerance to the presence of a foreign body, and many a substance might have lain undisturbed within the body had it not been that with it had been included some micro-organisms able to flourish in the tissues. The more marked the septic condition associated with the foreign body the more rapidly does it make its presence felt, and within a very few days the need for the removal of the foreign body becomes manifest. Often, however, the sepsis, though present, is so mild in character that weeks, or even months, may elapse before any evidence is forthcoming that the foreign body is causing any disturbance. It may be said that it is wrong to speak of the foreign body being the cause of the irritation when germs are present capable of giving rise to the inflammation, but there is very definite evidence that foreign bodies which are absolutely aseptic are capable by themselves of giving rise to irritation and to such a degree of inflammation as to lead ultimately to their extrusion. In proof of this we have the fact that a readily absorbable foreign body such as catgut is much less likely to excite irritation than is one which is absorbed with difficulty or not at all, such as silk, yet silk can be rendered aseptic with much greater ease than can catgut. The explanation of this is that the absorbable catgut is removed rapidly before it has time to give rise to much irritation, while the silk, though unirritating at first, may at one time or another give rise to some trouble. The shape of a foreign body may also have an influence; the smoother it is, the less likely is it to act as an irritant, and the rougher it is, the more likely is it to disturb the tissue in which it lies. Surgical literature can supply numberless instances of bullets remaining in the body for many years without the production of any symptoms. If shape favours movement, a foreign body such as a needle may travel great distances and may pass through important structures with marvellously little irritation. Tension is nowhere caused, and this is a very important factor in the production of disturbance. A stitch which is tight enough to strangulate the tissues embraced will be much more likely to be extruded than one that exerts no tension, and the greater the tension the greater the probability of irritation and the greater the risk of extrusion.

The beneficent uses of foreign bodies in surgery are many. As ligatures they afford the best methods of stopping hæmorrhage, but not many decades have passed since it was thought bad surgery to allow a ligature to remain in the tissues; one end of the ligature was left long, and after the eighth or tenth day at each dressing the surgeon pulled gently on the ligature to see if it would come away. Even at the present time there are many who maintain that the advantages of an absorbable ligature are very great, for the non-absorbable are always liable to be extruded. Ligatures of metal have from time to time been employed, but they have never been largely adopted. For the suture of deep structures, especially in the radical cure of hernia, silver wire was for long employed, but gradually its use has been abandoned, for it was often found that one or other of the metal stitches caused some irritation sooner or later, until it cut its way out or had to be removed. The introduction of the filigree is of great interest in this connexion. It is employed to close large openings in the deeper structures in the radical cure of hernia, where the weakness of the abdominal wall precludes the possibility of otherwise preventing the recurrence of the hernia. The first attempt appears to have been made by WITZEL, who, after uniting the deeper structures as far as possible with wire sutures, formed a network by weaving the wire in and out amongst these sutures. GÖPEL employed silver wire netting which had been previously prepared. The tendency is to employ softer and more flexible wire than at first; for the stiffer the filigree the more likely is it to cause irritation, thus conforming with the general principle that for a foreign body to remain quiescent in the tissues it must not be less flexible than the tissues in which it lies, for if it be it will cause some irritation on every movement of the tissues.

In the present issue of THE LANCET we publish an article by Mr. W. ARBUTHNOT LANE on the operative treatment of an interesting case of double fracture of the leg. He there shows the results attainable by perfect apposition and complete immobilisation of the fragments. But immobility does not necessarily mean tension, for it is an essential point that there shall be as little tension as possible on the bone, for where there is much tension there will be a tendency to absorption of the bone. If screws are used it is necessary that they should not fit too tightly, and this quite apart from the risk of cracking the bone, though that danger has to be considered. But there are many other examples of the implantation of foreign bodies in the tissues in surgery where the same respect for immobility has not to be observed. In all cases in which foreign bodies are placed in the body these principles should be followed—that if unabsorbable they should never exceed in rigidity the tissues in which they lie, that they should exert as little tension or pressure as possible on the living structures, and that they should be as smooth and as unirritating chemically as circumstances will permit. The range of utility of foreign bodies at present is limited, but it is certain that in the future when we appreciate more accurately the conditions needed for their peaceable continuance in the tissues they will be much more widely employed.

An Open-air Recovery School.

PROFESSOR RALPH P. WILLIAMS has recently presented to the Sheffield Education Committee a report upon the open-air recovery school at Whiteley Wood, and in his introductory remarks he refers to the investigation made into the condition of the Berlin school children. This inquiry showed that about 7 per cent. of the children were dull and backward, such backwardness in 50 per cent. of the cases being attributed to malnutrition and depressed vitality caused by improper feeding, insufficient sleep, and anæmia. To remedy these defects the first open-air recovery school was founded in Charlottenburg in 1904, and since then London, Halifax, Norwich, Bradford, and now Sheffield, have followed the Prussian example. A disused school some five miles from Sheffield was modified to suit the requirements, the infants' class-room being converted into a kitchen, and another class-room divided by a wooden partition. One half of this was used as a bath-room and the other half for the inspection, medical and lay, of the children. Two outside sheds were utilised—one as a dining-room, the other for a class-room in wet weather, and the total accommodation provided was for 50 children. Two female teachers were appointed and a weekly visit was made by a school nurse. The children were selected by inviting the head teachers in certain of the city schools near to a tram terminus to recommend four or more of their most anæmic and poorly nourished children, and these (100 in all) were subsequently examined by the school medical officer. In making his final selection Dr. WILLIAMS had to be influenced largely by the fact that the school was distant 1½ miles from the tram-car terminus, and although the children were driven to the school from the terminus in the morning they were left to walk across the fields to the tram in the evening. However, the children actually selected were suffering from malnutrition due to poverty, anæmia, oral sepsis, debility after operation for enlarged tonsils or adenoids, and from early pulmonary tuberculosis. As regards this latter defect, three children were credited with definite and nine with doubtful tuberculosis of the lungs, while two had tuberculous glands. But the bulk of the children were suffering from anæmia, malnutrition, and oral sepsis. Three good meals were provided daily—breakfast on arrival at 9.20 A.M., dinner at 1, and tea at 5 P.M.—and the cost for five days per week came to a little under 2*s.* 6*d.* per head, the parent contributing from 6*d.* to 2*s.* 6*d.* per week. The intellectual work occupied only 3¾ hours daily, most time being devoted to gardening, housewifery, nature study, and personal hygiene. Each day after the midday meal the children rested in their deck-chairs, and the school was open from June 21st to Oct. 20th, there being no holiday given during that period. Apparently the children came to regard the whole proceedings as one long holiday and their attendance was excellent. The actual cost of the experiment amounted to some £367, but a considerable amount of this has to be regarded as establishment expenses and therefore not a recurring item. Moreover, the grant is estimated at £70 and the parents' fees came to £18. The conveyance of the children by tram and brake formed a substantial item, £80. The immediate results of the experiment are thus grouped: cured, 17; improved, 32; same condition, 1; and we are promised a further report as to the condition of the same children in six months' time.

The medical officer regards the results as very satisfactory, although educationally many of the children were found to have lost ground in their ordinary curriculum. The children were on their return to school much brighter, more alert, and more able to cope with their daily work than formerly, and the curve as to their body weight evinces a remarkable progress. From a social standpoint they also made great advance, and the medical officer recommends that the school should be continued next year for 72 children. Several photographs are reproduced showing the condition of the children before and after their open-air school curriculum and systematic feeding, and no question can arise as to their improvement. They looked alert, fit, and happy, instead of listless, unfit, and indifferent. Indeed, it is obvious that the conditions of their lives during what is in effect a long holiday period must benefit the children both physically and morally, and the only criticism which can be levelled against it is an economical one, a consideration which would take us into regions whither we must not venture. But the parents who have received all this treatment for, at the most, 2*s.* 6*d.* a week have obtained a good return for their money, and it is, of course, not altogether improbable that the ratepayers may have been saved something in the prevention of sickness and future incapacity; but the promised report will, we trust, give us detailed information as to this, and the Charlottenburg experience is certainly satisfactory.

The "Brown Dog" of Battersea.

IT is now common knowledge that the Battersea borough council has decided by a considerable majority to repudiate the ill-advised action of its predecessors in office of five years ago and to order the return to its donors of the monument to the "Brown Dog" which was erected in the Latchmere Recreation Ground in 1906. It would hardly be worth calling further attention to the close of a policy of stupid prejudice on the part of one of the metropolitan boroughs were it not for the fact that the history of the monument affords an interesting symbol of the anti-vivisection cause. The guardians of the statue have discovered by bitter experience that the game was not worth the candle, and we have no hesitation in saying that before many years the deliberate enemies of experimental research and of the progress of medicine will discover that the price which the nation would have to pay for the adoption of their bigoted ideas would be such that the nation will have none of them. The "Brown Dog" monument was born of a lie which had received condign punishment from a British jury, it was erected in prejudice which at last has been overcome by considerations of common sense, and it was maintained in strife, which resulted inevitably from its impudent public challenge of the honour of a great profession, numbering many young men of spirit amongst the candidates for its ranks. Now the effigy is to be returned to the hands of its sponsors, who, if they were wise, would order it to be broken up, but who, we believe, are taking up an attitude of protest.

It may be of interest to recall the circumstances of its erection. In 1903 Dr. WILLIAM M. BAYLISS, assistant professor of physiology at University College, London, brought an action for libel against the Hon. STEPHEN COLERIDGE, honorary secretary of the Antivivisection Society, which, after occupying Lord ALVERSTONE and a special jury for several days, ended in a verdict for the plaintiff for £2000 damages and costs. The libel consisted in the publication of a written statement at a meeting of the society in question, and subsequently in a newspaper, imputing the infliction of extreme cruelty on "a big brown dog of the terrier type" by the plaintiff at University College, London, where in the course of a demonstration he was alleged on the evidence of two prejudiced foreign ladies to have submitted the animal to painful experiments without having rendered it insensible to pain by the administration of an anæsthetic. Although there were many intelligent and observant persons present at the demonstration, the defence was unable to produce a single witness to support the ladies in question in their accusations—a point upon which the Lord Chief Justice made a severe comment—whilst Dr. BAYLISS produced perfectly clear and unimpeachable evidence in plenty that the animal had been properly anæsthetised throughout. In the result the antivivisection party were taught that the recklessness of speech which has often distinguished their methods of propaganda was a two-edged weapon which might do serious damage to its user. Consequent upon the action a book named "The Shambles of Science," written by the two foreign witnesses and containing the same libel, was withdrawn from circulation by its publisher, who offered a full apology to Dr. BAYLISS for having issued it. As an aftermath to the case there ensued a squabble as to whether the National Antivivisection Society as a body was defraying Mr. COLERIDGE'S expenses in the action or whether it was only asking its members to collect subscriptions for that purpose, and then the matter was happily forgotten until July, 1906, upon which date the monument to the "Brown Dog" which had formed the subject of the libel first appeared on the scene. By 32 votes to 21 the Battersea borough council accepted the offer of the International Antivivisection Council to present a statue of the dog for erection in the Latchmere Recreation Ground, and two months later the then Mayor performed the opening ceremony, although a protest appeared in the local press as to the possible danger in which the action might place the municipal purse. It was understood that the funds for the monument were provided by a lady, but the Antivivisection Council took full responsibility for the gift. The monument consisted of a small granite drinking fountain set in the middle of an asphalted waste, and surmounted by a bronze statue of a dog. The pedestal is inscribed: "In Memory of the Brown Terrier Dog Done to Death in the Laboratories of University College in February, 1903, after having endured Vivisections extending over more than two months and having been handed over from one Vivisector to another till Death came to his release." On the base of the pedestal is inscribed: "Also in memory of the 232 dogs vivisected in the same place during the year '02. 'Men and Women of England! How long shall these things be?'" whilst on the opposite side are the words, "Erected by the Antivivisection Council." The events subsequent to the erection of this standing insult to the honour of one of our great medical colleges are in recent memory. By force and guile succeeding bodies of medical students have tried to cast down the idol which the antivivisection party had erected, but money was spent without stint in its defence until, as was stated on responsible authority at a recent meeting of the Battersea council, a sum of £700 a year was being paid for special police protection to the statue. Battersea will be this much the richer for the future, but we know that the decision to return the statue to its owners has not been dictated by the exigencies of municipal finance. These may have played their part, but the injustice of maintaining a concrete libel upon the medical profession has been the mainspring of their action.

Possibly this incident and some other recent occurrences will teach the antivivisection party better manners in the future conduct of campaigns. The story of the "Brown Dog" of Battersea is a sign of the times. Intelligent people, under the beneficent instruction of the Research Defence Society and of certain enlightened journals (not medical or scientific journals, but lay papers), are beginning to realise what modern humanity owes to the scientific practice of experimental physiology. If we could imagine, for instance, the supply of antidiphtheritic serum to be stopped in response to the ignorant clamour raised against its use, can we not picture many of those who have shouted loudest against it begging for its restoration when diphtheria came to their neighbourhood, as in the old days, to take a death-toll of more than half of the children it attacked—especially if the children of these humanitarians should be amongst the sufferers? But they are saved from such a terrible lesson, for the national penalty to pay for the dereliction of medical research would be, as was the cost exacted for the maintenance of the "Brown Dog," too heavy for an intelligent community to support.

Annotations.

"Ne quid nimis."

THE IDENTIFICATION OF HUMAN BLOOD-STAINS.

THE medical man, in the exercise of his multifarious public and private duties, must of necessity come into contact with phases of conduct and emotion far removed from the experience of other citizens. Intimately conversant as he is with the human drama of suffering, anxiety, courage, and self-sacrifice, there is probably no phase of his activity which can appeal so strongly, alike to his sense of responsibility and to his appreciation of the tragedy of life, as that which passes in a court of law, himself being the chief actor, when he has been summoned by the State to assess by his professional skill the guilt or innocence of a man upon his trial for murder. Of course, this supreme proof of confidence in medical skill and integrity is rightly placed only in the expert few, but the progress of knowledge in a branch of research which may become fraught with such dreadful authority must be of interest to all medical men no less than to the public. No medico-legal problem has gained a greater hold on the popular imagination than the identification of blood-spots, which has always figured so large in the romantic literature constructed around the annals of crime; but although the medical expert has for long been popularly invested with extraordinary powers of detection the great majority of medical men who may read these lines were taught in their student days that it was not possible to distinguish the blood of a human being from that of another mammal. But of late years, as is now generally known, the perfection of the complement reaction by the biological chemists of Germany has placed a new and delicate means of investigating this problem in the hands of the medico-legal expert, and at a meeting of the Section of State Medicine of the Royal Academy of Medicine in Ireland on Jan. 28th, the President, Professor E. J. McWeeney, delivered a most interesting address upon the Precipitin Reaction in Medico-legal Work, treating chiefly of this subject. He first reminded his audience that up to the year 1900 the difficulties in the way of certainly identifying the origin of blood-stains were practically insuperable. The differences in size between the red corpuscles of man and those of the domestic animals were insufficient to admit of certain microscopic distinction unless the blood were fresh and unaltered, which is practically never the case. It was from the bacteriological side, owing to the labours of Uhlenhuth, Wassermann, and Schütze in Germany, and of Nuttall in this country, that this unsatisfactory state of things was changed, and the biological method elaborated. Professor McWeeney then referred to his own experience of the method which he had been applying in medico-legal cases for the Crown in Ireland since 1902. Quite recently he had had to inquire into a case in which there was one spot of blood, and one only, on the clothes of a man accused of committing a murder. It was on his cap, and was no bigger than a threepenny-piece. By the aid of highly potent anti-sera and the capillary-tube method he was enabled to satisfy himself that the blood was not of human, but of equine, origin, and reported to that effect. On subsequent inquiry it was found that the accused man had been in the employment of a large horse-dealer, and had frequently to perform, or assist at, operations on horses. In another case, where a man accused of a brutal murder had tried to account for blood-stains on his knife by saying that he had been killing a goat, Professor McWeeney had been able to show that the stains in question were composed of human and not of goat's blood. The man had since been executed. Professor McWeeney then entered upon a minute description of the several steps of the method—the obtaining of the antigen, the preparation of the rabbit employed for the production of the specific anti-serum, the preparation of the stain-extract, the titration of the precipitating power of the anti-serum, and the determination of its specificity. He referred to the delicacy of the method, which could be made to reveal as little as 1-20000th gramme of albumin, and to the sources of error, the most important being the overlapping of the reaction on either sera or stain-extracts from biologically allied, and sometimes from widely removed, species as described by Nuttall. Professor McWeeney showed how these errors were to be avoided by using the antigen diluted to somewhere near the *titre* of the anti-serum. The other biological method of diluting the origin of albuminous matter—that by complement fixation—was then briefly referred to, and Professor McWeeney concluded by pointing out the wide possibilities of the precipitin method, and the uses to which it might be applied in hygienic work—such, for example, as the detection of horse and cat flesh in sausages. The address was followed by a demonstration of the mode of determining the precipitating power and specificity of a sample of anti-human serum, and the recognition by means of anti-ox-serum of the bovine origin of a blood-stain that had been over two years dried on boot leather.

BONUSES FOR BABIES.

IT is a question in ethics whether parents ought to be bribed to take the care of their infants to which in their helplessness the infants are entitled. There is no question, however, as to the benevolence which leads to the offer of the bribe. Colonel Pollitt during his tenure of the mayoralty of Ashton-under-Lyne was struck by the high death-rate among infants in that town. With a view to reducing this mortality he offered £100 to be divided among 100 mothers living in cottage homes who each brought up her child to the age of 12 months. Before the end of the year all the sovereigns were claimed. It was, no doubt, an interesting gathering when the proud parents and their friends met in the town hall under the auspices of the Ladies' Health Society and the Ashton Day-Nursery. Mrs. Pollitt received a handsome bouquet from the mothers, and she and her husband were heartily thanked for their gifts. This was quite as it should be, but the question may be asked, What becomes of the sovereigns? Many of the parents may use the money judiciously, some foolishly, and others may spend it in drink. Would it be possible to let it form the nucleus of a fund for the benefit of the child later in life, which might be added to by the pence of the parents as they could afford? The chief drawback to this form of benevolence, first set on foot by Mr. Broadbent of Huddersfield, seems to be the slur cast on the character of the mothers of our manufacturing districts, as if a bribe were needed to induce them to take the care of their children that natural affection should sufficiently prompt. Unfortunately, the very success of the experiment seems to show some truth in the surmise. We may console ourselves, however, that England is not the only country in which mothers need to be bribed to look after their babies properly, for our Vienna Correspondent last week reported the private establishment in Vienna of a fund from which weekly payments of as much as a guinea a month are made to poor mothers who consent to suckle their own infants. This substantial bribe has induced a number of multiparæ to fulfil their maternal functions for the first time, and it is much to be hoped that they are spending a fair proportion of the subsidy on nourishing food for themselves and proper clothing for their babies.

THE PUBLIC ASSISTANCE OF TUBERCULOUS PATIENTS.

THE recent annual meeting of the District Provident and Charity Organisation of Manchester and Salford was only attended by about 15 people, but, as the Lord Mayor, who presided, ingeniously pointed out, the sparse attendance showed how satisfied were the vast body of its supporters, and the institutions that received its aid, with the way in which it did its great work. Certainly the organisation does useful work in investigating cases for the medical charities and so prevents imposition. The cases investigated were about 7000 more than in the previous year. Mr. Hennesey said the cases investigated averaged about 1500 a week. He spoke also of the dangers to children of from 5 to 14 years of age of consumption if they were not better nourished in early life, and regretted that there was an impression in Manchester that the society was intended to dry up the sources of charity, whereas it was meant to dispense charity more widely and more wisely. In response to a call from the Lord Mayor, Dr. J. Niven, the medical officer for the city, said he had very much at heart the provision of some assistance of a more permanent character for the families of consumptives.

He believed the absence of such assistance caused people to delay acknowledging they were ill, and to avoid seeking medical aid and the help of the hospitals. The result was that treatment was delayed till too late for the disease to be perfectly curable. This diminished very much the usefulness of hospitals for consumption, both in the cure of the disease, and in preventing its spread by infection. Another reason was that, when consumption took hold of one of a family, those exposed to infection were much more easily and much more strongly affected, if they were weakened by the absence of the nourishment which was required to enable the body to resist the disease, than if more favourable conditions obtained. Of course, when the chief wage-earner is partially or wholly disabled the grip of poverty is more and more felt. Dr. Niven thought that a fund should be started to provide a measure of assistance for a certain number of families who could not otherwise live in such a condition that they would have sufficient clothing and food to enable them to ward off the inroads of the disease. These suggestions of Dr. Niven are very important, and it is to be hoped they will bear good fruit beyond the ground in which he has planted them.

THE ESSENTIAL OILS OF THE PHARMACOPŒIA.

SINCE the publication of the 1898 edition of the British Pharmacopœia considerable progress has been made in our knowledge of essential oils, and from the data which are now available the compilers of the next edition will be enabled to include monographs which will ensure, as far as is at present possible, that the official essential oils shall have a maximum of therapeutic and odour value. The practice of adulteration has reached a high state of perfection, and sophisticators seem to have singled out essential oils for especial study, which is perhaps not surprising as their market price is, in many cases, comparatively high. At the request of the Committee of Reference in Pharmacy, which is rendering useful assistance to the Pharmacopœia Committee of the General Medical Council, Mr. C. A. Hill and Mr. J. C. Umney, two members of the Committee of Reference who have opportunities of producing and examining essential oils, recorded their views at the February evening meeting of the Pharmaceutical Society, and made a number of suggestions which may be taken as the basis for the monographs of the next Pharmacopœia. While it is now possible to assay many of the essential oils for what are admittedly their most important constituents, the authors confess that the time has not yet arrived to replace the natural oils by those constituents. Just as in the Pharmacopœia we now have nux vomica and strychnine, cinchona and quinine, opium and morphine, so we have peppermint oil and menthol, and Mr. Hill and Mr. Umney think it will be well to retain such oils as dill and caraway, and not to replace them by, or even to include, carvone. They also think it well to retain the oils of cloves and pimento, and not to include eugenol, since they are of opinion that the other bodies present in these oils make the oils themselves more readily acceptable than these, their chief constituents. In the 1898 Pharmacopœia the proportion of the actual medicinal or odorous constituents is regulated in most cases by the physical characters, and in a few cases by special tests—for instance, a due proportion of cineol, cajuput and eucalyptus oils; a due proportion of eugenol in clove and pimento oils; and at least 50 per cent. of cinnamic aldehyde in cinnamon oil. Mr. Hill and Mr. Umney propose to extend this principle to the following quantitative determinations: cineol in cajuput and eucalyptus oils; phenols in clove, pimento, and thyme oils; esters in lavender and pine oils; alcohols in peppermint, rosemary, and santal oils; citral in lemon oil; allyl-iso-thiocyanate in mustard oil. In other cases, such as dill and caraway, the official characters are in themselves sufficient to ensure high proportions of active constituents within fairly narrow limits. Mr. Hill and Mr. Umney suggest monographs for oils of orange, sweet birch, fennel, and thyme, the inclusion of which oils depends upon the decision of the Pharmacopœia Committee of the General Medical Council, and they recommend the omission of the oil of *Pinus Pumilio* and the substitution for it of the oil of *Pinus Sibirica*, which is readily obtainable pure and is probably of equal medicinal value and is of preferable odour. The authors have drafted proposed new monographs for the oils at present in the Pharmacopœia, as well as for the oils of orange, sweet birch, fennel, and thyme, and they suggest that the general processes for the estimation of alcohols and esters shall be included in the appendix to the Pharmacopœia.

ACUTE ŒDEMA OF THE LARYNX DUE TO THE PNEUMOCOCCUS.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Nov. 19th, 1909, M. A. Chauffard and M. Guy Laroche reported a case in which a very rare manifestation of pneumococcic infection occurred—acute œdema of the larynx. A man, aged 40 years, was admitted into the Cochin Hospital on May 5th, 1909, in such a serious condition of laryngeal dyspnœa that tracheotomy was performed. After the operation artificial respiration was necessary to resuscitate him. The history was that on May 3rd he became feverish and had slight difficulty in swallowing. On the following day he continued to work, but the difficulty in swallowing increased until he could not take either liquids or solids. In the night dyspnœa appeared; it increased so much that he was taken to hospital. After the tracheotomy the respiration became calm and regular. On the 6th there was slight dyspnœa (a respiration rate of 26), the pulse was 136, and the temperature was 105·4° F. The tonsils were red and swollen, and on the left pillar was a hæmorrhagic point. On the inferior surface of the tongue was a small opaline and painful ulcer. Deglutition was almost impossible. The urine contained albumin. Laryngeal dyspnœa due to œdema of the larynx was diagnosed. Examination with the laryngoscope on the 8th confirmed this diagnosis. The epiglottis was found violaceous and of thrice its normal size. The mucous membrane covering the arytenoids was swollen and violaceous. The laryngeal lumen was much narrowed and the vocal cords could not be seen. The presence of abundant mucus increased the laryngeal obstruction. Neither ulceration nor false membrane could be seen. At the base of the left lung was a focus of consolidation. On this day marked herpes labialis appeared. The pneumonia proceeded without incident, and on the 10th signs of resolution were present, though the blood yielded a pure culture of the pneumococcus. From the 7th to the 14th there were aphthous stomatitis and glossitis, which increased the dysphagia. In the tracheotomy wound a greyish membrane of diphtheritic appearance formed around the cannula. This was accompanied by slight sloughing with a tendency to phagedæna. The membrane contained the pneumococcus. On the following days these various conditions improved. The state of the mouth was ameliorated and swallowing became easier. On the 13th all swelling of the epiglottis had disappeared and there remained only diffuse redness of this structure and of the arytenoids. The tracheotomy tube was removed on the 19th, but in the meantime there had appeared another pneumococcic lesion—periarthritis of the right shoulder. On the 15th there was a fluctuating swelling on the upper surface of the shoulder. Exploratory puncture yielded pus and was followed by incision through the deltoid, which showed that the subdeltoid bursa was full of pus. A huge abscess also formed in the right thigh at the site of injection of saline solution. The pus contained the pneumococcus in pure culture. The mucus discharged by the tracheotomy tube contained a pneumococcus which would kill a mouse in 16 hours. Recovery ensued and the patient left hospital on July 18th, with only a little stiffness of the right shoulder as a relic of the long attack of pneumococcic septicæmia. Laryngitis is a very rare complication of pneumonia. A case resembling the one now reported has been recorded by Dévé.[1] An old woman had pneumonia of the right upper lobe. On the fifth day after defervescence she suffered from pain in the throat and dysphagia. Dyspnœa with stridor followed and proved fatal in 48 hours. The necropsy revealed œdematous swelling of a greenish-yellow tint over the aryteno-epiglottic folds and ventricular bands. Histological examination showed diffuse fibrino-purulent œdema of the mucous membrane of the larynx, and in the sections were numerous diplococci with the characters of the pneumococcus. This case differs from the preceding one in that the œdema of the larynx supervened during the decline of the pneumonia, whereas in the former case the œdema appeared to be, at least clinically, the first localisation of the pneumococcic infection.

PHYSICAL EDUCATION IN FOREIGN COUNTRIES.

THE joint committee of the National League for Physical Education and Improvement recently circulated a series of questions to various foreign countries as to the condition of physical education which exists in these countries respectively. Replies were received from Austria-Hungary, Belgium, France, Germany (Bavaria, Prussia, and Saxony), Greece, Holland, Scandinavia, including Sweden, Denmark, and Norway, Switzerland, the United States of America, and Chile. Broadly, the answers fall under two heads—namely, the system of education known as the "turn system," invented in Germany at the beginning of the last century by Jahn and Eiselen, and the Swedish "Ling" system, invented about the same time by P. H. Ling. These answers have now been printed as a report and issued in pamphlet form. The summary appended shows that physical education, mainly in the form of gymnastics, is, or is to be, obligatory in the schools of most countries. Games are in many cases recommended, are not as a rule obligatory, and have been introduced in but few. Medical inspection as a preliminary to physical exercises is the exception rather than the rule, except in Scandinavia. The subject is generally taught by the ordinary teacher in lower-grade schools, and by special gymnastic teachers in higher schools. The training of the gymnastic specialist varies considerably and is most thorough in Sweden and in the other countries which have adopted the Ling system more or less completely—namely, Belgium, France, and Greece. Belgium has incorporated the training with the Medical Faculty of the University of Ghent. Perhaps the most interesting part of the pamphlet is a reprint of a report on the Organisation of School Gymnastics presented to the Greek Minister of Education in 1907. This report recommends the Swedish system, and lays stress upon the necessity for the abolition of movable apparatus, such as dumb-bells, clubs, and staves. The body is to make its own resistance, and in every exercise both sides of the body are to be employed equally, so that in throwing exercises both hands are to be used alternately. "Free gymnastic games" are also recommended as teaching self-control, coöperation, and the need for corporate action. In our opinion these last-mentioned matters are by far the most important part of physical education. The knowledge of what is, and of what is not, "cricket" is of the greatest importance in every department of life, and, as Prince George of Greece points out, a child who learns the drill of gymnastic games "places confidence in his comrades besides belief in himself, recognises the good qualities of others, and sees the need for corporate action if a common end is to be won." We in this country have until recently, in our usual happy-go-lucky fashion, neglected the systematic teaching of physical exercises, except in the case of the services, and the report before us may well give our educational authorities material for consideration. A sense of discipline is the crying need of the day and this the foreign system of physical education inculcates more generally than our own systems, or rather want of system. But with the extension of physical exercises let us see that we do not lose the splendid discipline which we possess in football, cricket, and rowing. We are not blind to the merit of our national games, though we are impatient of the mischievous hero-worship which they have evoked.

ENGLISH AND GERMAN VITAL STATISTICS.

LAST week a paper was read before the Royal Statistical Society by Mr. A. W. Flux, of the Board of Trade, on "Urban Vital Statistics in England and Germany." Notwithstanding the almost inevitable drawbacks to all attempts to compare international statistics, collected and tabulated under widely varying conditions, this paper is both valuable and suggestive. It shows clearly that both urban aggregation and decline in the birth-rate have, in recent years, increased at a greater rate in Germany than in England. It must, however, be remembered that these changes in Germany, which have been coincident with remarkably rapid growth of manufacture and commerce, are of much more recent origin than in England and Wales. An elaborate comparison of English and German mortality statistics seems to prove that the mean duration of life in England and Wales, based on national life-tables, exceeds that in Germany by more than three years and a half, both among males and females. This result, however, is apparently entirely due to the excess of infant mortality in Germany, more especially in German towns, in which Mr. Flux estimates the mean excess, as compared with that in English towns, to range between 25 and 30 per cent. Between the ages of 10 and 50 years, indeed, the expectation of life in Germany somewhat exceeds that in England. It is a fact, however, that notwithstanding the recent rapid increase of urban population in Germany the proportion of the population residing in rural districts still very far exceeds the proportion of rural population in England. There is little ground for doubting the soundness of these general conclusions, at which Mr. Flux arrives in his paper, but the value of much of the statistical detail therein, and of the deductions based thereon, would have been increased if he could have expressed assurance that census organisation and the registration system for births and deaths are practically identical in Germany and in England, as without such assurance there is considerable doubt as to the value of conclusions based on any comparison of international statistics. We know, for instance, that in Germany statisticians have long had the enormous advantage of a quinquennial census, whereas the value of the statistics issued in England by the Registrar-General, more especially for our large urban populations, is seriously depreciated during the latter portion of our ten-year intercensal periods, because it is out of his power in many cases to estimate even approximately the true population of our large towns. It is beyond question that the official estimates of the present population of several of the large English towns in which the population doubled, or nearly doubled, between 1891 and 1901, based as they are upon these exceptional rates of increase, very considerably exceed the true population. One of the results of these excessive estimates is to cause local sanitary authorities to considerably undertate the death-rate, and thus to congratulate themselves on imaginary evidence of exceptionally favourable sanitary condition. This defect of our vital statistics can only be obviated by due provision for a quinquennial census of the number and ages of the population of England and Wales.

---

[1] Normandie Médicale, June 1st, 1908, p. 306.

THE SUNSHINE AND RAINFALL OF LAST YEAR.

ACCORDING to a summary of the weather for last year recently published by the Meteorological Office the general conditions over the United Kingdom, considered as a whole, were neither dull nor especially rainy. This will doubtless appear somewhat surprising to many who, living in large centres of population, are apt to judge the year's weather by that which happens to prevail during the summer holiday season. The arguments of the sunshine recorders and the rain gauge are, however, extremely difficult to refute, and the figures obtained from these instruments show that, except in certain districts in the east and north-east of England, the much-abused weather was most generous in its sunshine, the excess over the average being especially large in London. A large number of places both on the coast and inland recorded a total equivalent to a mean of about half an hour per day more than the normal, while London and Blackpool, where the excess was largest, were favoured with about 40 minutes per day more than during an average year. The mean for each day in London (Westminster) was 3¾ hours, and on the south coast of England about 5¼ hours, while at Manchester, the most sunless city, it was no more than about 2¾ hours. With regard to rainfall, it is shown that while some localities in Great Britain were drier than usual, many others were wetter, although the total excess of rain was in many cases rather slight. In Ireland nearly every place had less rain than usual, the deficit in the south and south-west being very large. The year, considered in its entirety, may be said therefore to have vindicated its character. But when the weather of the summer is examined it must be admitted at once that the complaints heard from nearly all sides were fully justified. There was really nothing worthy the name of summer except a fortnight of fine, warm weather in August, which commenced soon after the Bank Holiday; and after that had been superseded by rain and gloom, there was nothing worthy to be called autumn until November. After April and May had both beaten the record for sunshine and given too little rather than too much rain, June was a dismal failure. In some localities, among which was London, it made itself notorious by yielding less sunshine than any June on record; in London there were only about three hours per day. 19 of its days were more or less rainy, and its aggregate rainfall large. July brought little improvement. In Westminster its sunshine was only about half an hour per day below the average, but along the south coast of England its deficiency amounted to about two hours daily. The number of more or less rainy days was also high; in London there were, as in June, 19. After its fine fortnight August could do no more, and its later days were but an unwelcome repetition of so many of those in July. In Westminster, however, there were only nine days with rain, while the total duration of sunshine exceeded the average by 48 hours. September and October were cold and rainy over the country generally; London had 20 rainy days in the former and 24 in the latter month. A very important feature in London and the south and south-east of England generally was that the number of days on which rain fell was greater than the average. Although the total rainfall in Westminster was only 0·5 inch in excess of the average the number of days on which it fell was no less than 200, whereas the average is no more than 165 days. This unusual rain frequency was chiefly owing to the wet summer period and the miserable months of early autumn.

LIGATURE OF THE SPERMATIC ARTERY IN THE OPERATION FOR VARICOCELE.

THE importance of a knowledge of the effects of ligature of the spermatic artery depends chiefly on the frequency with which it is involved in the modern operation for varicocele, and the effects, immediate and remote, of such ligature on the vitality and nutrition of the testis itself. Divergent views on the consequences of this procedure have been held from time to time. Harvey[1] ligatured the spermatic in an attempt to limit the growth of a scrotal tumour which was only temporarily successful, as modern knowledge of the growth of tumours would have led one to expect. Later, Wardrop[2] described a case where atrophy of the testes occurred in a middle-aged man who had an aneurysm of the abdominal aorta occluding both spermatics. Sir Astley Cooper[3] experimentally divided all the structure of the cord (artery, veins, and vas) between two ligatures and as a consequence got sloughing of the testis. The disastrous result of this experiment, coupled with the great name of its author, had a paralysing effect for many years on all operations on the cord. The risk of venous thrombosis in pre-Listerian days, the scrotal incision for varicocele with its inevitable septic sequelæ, and the supposed risk of tying the spermatic artery in the operation, all helped to deter surgeons from attempting to deal radically with the condition. Finally, the experiments by Miflet[4] on dogs, in which the arrangement of vessels is practically identical with those in man, seemed to show that ligature of the spermatic produced atrophy of the testis, as the spermatics were "end" or "terminal" arteries in the sense used by Cohnheim. Meanwhile, the spread of Listerian ideas was rapidly widening the field of possible surgery; tentative open operations on the varicose condition of the pampiniform plexus were attempted; and elaborate directions given as to how to avoid including the spermatic artery in the ligature. Again, following quite a different line of thought, and remembering Wardrop's observations and Miflet's experiments, attempts were made, by deliberately tying the arteries, to produce atrophy of the testes as a substitute for castration in the now obsolete operation for reducing the size of the enlarged prostate. The non-success of these latter attempts[5] and the fact that when sections of the portions excised in the operation for varicocele were examined they were almost invariably found to contain the spermatic artery, cast the whole subject again into the melting-pot of dispute. Operating surgeons (Bennett,[6] Kocher, Treves[7]) asserted that ligature of the artery with the vein made no difference, the testis being adequately supplied by the artery to the vas, Bennett, indeed, asserting that the removal of the artery was an advantage, preventing the organ from becoming engorged before the venous collateral circulation had been restored. The view now held by most surgeons may be taken as follows: That ligature of the spermatic artery is practically unavoidable in the operation for varicocele, and that no ill-effects follow provided that the vas, its artery, a few veins around it, and the sympathetic nerves of the testis which go with the vas are left undisturbed.[8]

---

[1] Harvey: Anat. Exercitations Concerning the Generation of Living Creatures.

[2] Wardrop: Note to Baillic's Works, 11–315.

[3] Astley Cooper: Diseases of the Testis.

[4] Miflet, quoted by Griffiths, Ligature of the Spermatic Artery; Journal of Anatomy and Physiology, vol. xxx.

[5] White: Annals of Surgery, July, 1895.

[6] William Bennett on Varicocele.

[7] Treves: Operative Surgery.

THE ART OF EATING.

EATING, that is to say rational eating, as a means not only of supplying fuel to the organism but as bringing about a condition of euphoria and of good health, has always been a matter of consideration to medical men and other men of affairs, such, for instance, as Napoleon, who, it will be remembered, said, "An army marches on its stomach." That brilliant worldling Brillat-Savarin wrote a delightful, and for the most part sound, work entitled "Physiologie du Goût"; and one of the best cookery books in the English language—namely, "The Cook's Oracle"—was written by that eminent physician Dr. W. Kitchener. Of recent years, however, the physiology of eating has become a subject to be considered from an exceedingly serious point of view, and numberless societies more or less faddy are devoted to "rational foods" and other forms of gastronomic heresy. As a contrast to all the literature issued by such societies, a book has recently appeared written, as is only fitting, by a Frenchman.[1] Its subtitle is "Manuel d'Alimentation Rationelle," and Dr. Armand Gautier has written a laudatory and illuminating preface thereto. Dr. Gouraud's book is written upon what is to us quite a new plan. He takes the various articles of food—meat, fish, milk, cheese, eggs, and so on—in order and discusses their preparation or source, the ways in which they are used, and their chemical composition; then follows a section entitled "Répercussions," a word difficult to translate, but which may be rendered "influence." From the study of the "répercussion" Dr. Gouraud proceeds to deduce the reasons for the use of any particular food or for its rejection. He also in the case of some foods—e.g., vegetables, milk, and grapes—gives an account of their use as particular diets, with the diseases in which such diets have been found useful and the indications for or against prescribing them. His definition of a rational diet may be quoted. It is one which, "while pleasant to the taste, maintains the bodily equilibrium, favours the easy working (*jeu*) of all our organs, and reduces to a minimum the work which its presence necessarily imposes on them." The chapter on vegetarianism is admirable and should be studied by all medical men of the present day, for vegetarianism, like so many other things which have much good in them, has been so exploited by cranks and made to connote all sorts of revolutionary ideas, that the real good in it has been much obscured. We are grateful to Dr. Gouraud for a plain, practical work written in a style which makes it pleasant as well as profitable to read.

THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THE West London Medico-Chirurgical Society now numbers over 620 members, and the successful banquet which it held on the evening of Feb. 16th in the Wharncliffe Rooms afforded a striking demonstration of its vitality no less than of the organising powers of Mr. W. E. Fry and Mr. H. M. Page, its honorary secretaries. The chair was naturally occupied by the President, Dr. Neville T. Wood, who had on his right hand Inspector-General James Porter, C.B., and on his left Sir William Church, Bart., who in the course of his eloquent speech in support of the toast of the evening—namely, that of the society—showed that there is ample room in London for the co-existence of such an association and of the great amalgamated society of the medical sciences over which he himself presides. The only shadow on the festivity of the evening was the absence of the late Mr. C. B. Keetley, to whom, as Sir William Church said, the West London Society owes its existence, and whose energy, zeal, and powers of organisation brought it into the position which it now occupies, an estimate which was corroborated by the chairman in replying to the toast. Sir William Church also reminded the society that to the West London Hospital, with which Mr. Keetley as well as the society were so closely associated, is due in chief measure the introduction of post-graduate teaching into the metropolis, and he spoke with admiration of the roll of past Cavendish lecturers. An interesting feature of the evening was the presentation of silver candelabra and a silver salver to Dr. Leonard Dobson and Mr. John Pardoe respectively as a token of the society's gratitude for the manner in which they have respectively served the society's journal in the capacity of editor and editorial secretary during the last six years. In making the presentation the chairman alluded to the work of Mr. W. McAdam Eccles and Mr. Percy Dunn in founding the journal, and recounted some of the difficulties which they had had to overcome and the worthy way in which their work had been continued by the recipients of the present gifts, who acknowledged them in suitable terms. The toast of "The Imperial Forces" was proposed by Mr. F. Swinford Edwards, who proclaimed warmly his belief in universal military service as the only way of ensuring the safety of the nation, an expression of opinion that was acclaimed by the company. Inspector-General Porter, in replying for the toast, gave a reassuring account of the state of the national defences and alluded confidently to the efficiency of the Navy both as regards ships and *personnel*. He spoke of his own intention to keep the naval medical service in a state of readiness for war and made an interesting allusion to the efficient state of the sister service in the United States, as it had been revealed to him in a recent visit to America. Lastly, he commended the medical branch of the Naval League to the active support of the meeting. The remaining toast of "Kindred Societies and Guests" was given by Mr. Eccles and responded to by Mr. L. A. Bidwell, President of the Chelsea Clinical Society. Amongst those present at the dinner were Colonel T. H. Hendley, C.I.E., Inspector-General R. Bentham, R.N., Dr. J. A. Mansell Moullin, Mr. Cuthbert Lockyer, Dr. A. H. N. Lewers, Dr. T. Grainger Stewart, Mr. R. Lake, Mr. Reginald Morton, Mr. G. Pernet, Mr. Cecil Leaf, and Mr. R. J. Gilbert, secretary of the West London Hospital. We must not omit to refer to the charming programme of vocal music which was performed during the evening by Miss Edith Kirkwood and Mr. Harold Wilde, and to the equally accomplished performances of Miss Nadia Silva on the violin.

THE OUTBREAK OF ENTERIC FEVER IN MADEIRA.

A LOCALISED outbreak of enteric fever has occurred in Madeira at a large hotel where at least 200 visitors and their servants are passing the winter season. Two maid-servants sickened first and subsequently others. Mostly English and German servants were attacked, numbering at the present moment about 15 persons. The bedrooms of the valets and maids are scattered throughout the hotel in the vicinity of their employers' apartments, and the steward's room, where they assemble, is a spacious hall far removed from lavatories and the usual association of typhoid infection. Though there is no epidemic, several solitary cases of enteric fever are reported from the mountain slopes around Funchal, but the extensive district served by the running stream which supplies the hotel has been singularly free from the disease. Nevertheless, the victims of the present outbreak are mostly water-drinkers and may easily have had access, notwithstanding the supply from Pasteur filters, to the unfiltered water of the stream above mentioned. The milk coming to the hotel is all boiled, and has been consumed universally with apparent immunity. A large and neighbouring house has been prepared to receive the sick, who are all doing well. An expert sanitary inspector is on his way from London, and with the drastic measures of cleansing, disinfection, and precaution now in progress the present outbreak should soon be overcome. Meanwhile the steamship companies have been notified as to what has happened. Our correspondent in Madeira, who sends us this information, adds, "The position of the hotel, built in spacious grounds upon the naked basaltic outcrop of a sea-cliff promontory, is delightful. But when private enterprise has done its best, the apathy or indifference of the municipality of Funchal to the most elementary requirements of their matchless health resort is on all hands felt to be deplorable and disastrous; for as yet, though the expenditure has long since been sanctioned by the Government, we have no efficient supply of water. Much good, however, may come from our present trouble now that radical measures are being taken to fix its responsibility."

---

[8] Keen's Surgery, vol. iv., p. 611.

[1] Que Faut-Il Manger: Manuel d'Alimentation Rationelle. By Dr F. X. Gouraud. Paris: Jules Rousset. 1910. Pp. 327. Price 3.50 francs.

Mr. Ernest Blechynden Waggett, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed surgeon in ordinary to Their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

The King has appointed Sir Thomas Myles, M.D., B.C. Dub., F.R.C.S. Irel., to be one of the honorary surgeons to His Majesty in Ireland in the room of Sir William Thomson, C.B., deceased.

Medical Men and the Petrol Tax.—The Motor Union has received from the Board of Customs and Excise a letter stating that special forms for the purpose of enabling members of the medical profession to claim repayment of motor spirit duty at 3*d.* per gallon have not been prepared; but the officers of the Department have been instructed that form No. 232 B, for claiming repayment of one half of the full duty, must be adapted for claiming the full duty. A medical practitioner may obtain the necessary forms from the local officer of Customs and Excise, and in the application for them it should be explained that it is proposed to claim repayment of the whole of the duty and not one-half. The letter also states that for the present repayment of duty may not be claimed on motor spirit received by a medical practitioner on or after Dec. 4th last, although it may have been used before Jan. 1st. The letter was accompanied by a specimen form No. 232 B, showing the alterations which must be made to adapt it for a claim for the full duty.

Hunterian Society.—The annual dinner of this society was held on Feb. 16th at the Café Royal, the President, Mr. T. H. Openshaw, C.M.G., being in the chair. There were 85 Fellows and guests present, including a fair sprinkling of ladies. The loyal toasts having been honoured, the toast of "The Navy, Army, and Reserve Forces" was proposed by Sir Thomas B. Crosby, and responded to by Surgeon-General W. L. Gubbins, C.B., M.V.O., Director-General A.M.S. "The Society" was proposed by Mr. Butlin, President of the Royal College of Surgeons of England, and replied to by the President. Dr. R. Hingston Fox then proposed "The Guests and Sister Societies," Sir Richard Douglas Powell, Bart., President of the Royal College of Physicians of London, and Mr. J. F. P. Rawlinson, K.C., M.P. for Cambridge University, replying; and, finally, Dr. G. Newton Pitt proposed "The Orator and Officers of the Society," Dr. R. Fortescue Fox, this year's Orator, replying. An excellent programme of music had been arranged by Mr. Hugh Lett, and was ably carried out by Mr. Barclay Gammon and Miss Belle Thynne, Miss Audrey Richardson, and Miss Christine Keay.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

By Harry Campbell, M.D. Lond., F.R.C.P. Lond.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

VIII.[1]

The Resistance of the Veins to Progressive Yielding under the Influence of the Blood Pressure.

In the veins, as in the arteries, the muscular tissue performs an important function in counteracting the tendency of the blood pressure to cause over-stretching of the vessel wall. Indeed, this seems to me to be its essential function in their case. It was a long time a puzzle to me why the veins should be so abundantly supplied with muscular tissue, seeing that, except in the case of the portal system, there is no evidence that they are under vaso-motor control, or that their lumen is ever greatly influenced by modifications in tonus. When, however, I came to realise how pre-eminently adapted actively contracted muscle is to resist over-stretching, I realised that one of the objects of the muscular tissue in the veins is to prevent them from being over-stretched by the blood pressure and thus becoming varicose. It is true that venous blood pressure is on the whole considerably less than arterial, but it must not be forgotten that even a moderate pressure would, if long continued, suffice to cause progressive dilatation and lengthening of a vessel were its walls not peculiarly adapted to resist over-stretching, and further, that in the case of some of the veins—e.g., of the lower extremities in the upright position of the body—the blood pressure rises at times to a considerable height. It is noteworthy that (as in the case of the arteries) those veins which are required to withstand the highest pressure are the most richly endowed with muscular and elastic elements. Thus the veins (like the arteries) of the lower extremities are peculiarly rich in both these elements, while those in the head and neck are but slenderly supplied with them.

When the horizontal position is changed for the vertical the dependent veins undergo (like the corresponding arteries) active muscular contraction. This has a double object. In the first place the blood is in this way prevented from over-distending the dependent veins and thus accumulating unduly in the lower extremities; and in the second place the heightened venous tonus by bracing up the venous walls prevents them from undergoing that progressive yielding which results in varicosis. When the superficial veins of the lower extremities are defective in this latter function, either from congenital deficiency in their muscular elements or from insufficient tonus, varicosis results.

We have here, I venture to think, an important factor in the pathology of varicosis. Other anatomical factors which predispose to varicosis in the lower extremities are: deficiency of elastic tissue in the venous walls, deficiency of subcutaneous fat, and defective cutaneous elasticity. Nor must the influence of stature be forgotten in this connexion, for the taller the person the longer is the column of blood which the veins of the lower extremities are required to sustain.

The thickening which takes place in the walls of varicose veins is to be explained in exactly the same way as the corresponding thickening met with in pathologically tortuous arteries; and this no matter what the cause of the varicosis, whether, for example, it be the form so commonly met with in the superficial veins of the lower extremities, or that which occurs in the collateral veins after blockage of a venous trunk.

As regards the etiology of this latter variety of varicosis, I do not suggest that a primary hypotonus plays the same part in it as in the case of the arterial tortuosity which takes place in the collateral arteries after ligature. The chief etiological factor is doubtless excessive distension from augmented venous pressure.

* * * * *

Writers are all but silent in regard to the part played by the muscular media in counteracting the tendency of the blood pressure to over-stretch the blood-vessels. Among the many physiological text-books I have consulted that of Starling is the only one in which this function of the muscular media is hinted at. He writes: "Although the muscular fibres in the coat of the aorta and large arteries cannot by their contraction alter appreciably the flow of blood through these tubes, they have nevertheless an important function. Like all other kinds of unstriated muscle, they are extremely susceptible to changes in tension. Any sudden increase in the pressure within the arteries will therefore excite these fibres to contract, so that the muscular tissue is able to support and reinforce the inert elastic tissue of the arterial wall in withstanding any sudden strain caused by a great rise of arterial pressure." In this passage the function in question is recognised, although the writer does not make it clear that the muscular tissue of all the arteries, small as well as large, offers resistance, not only against sudden rises of blood, but against that never-ceasing mean pressure which is ever tending to cause a progressive yielding of the arterial tissue. Nor is any mention made of the similar function performed by the muscular tissue of the veins. Thoma, however, fully recognises the function under discussion. Thus he writes: "The walls of the vessels are the most elastic of all the tissues of the human body. In many persons they are able to bear the uninterrupted tension of the blood pressure during a long life without being in any marked degree overstretched or dilated. No inanimate substance is equal to such a function, as continuous tension would lead to a progressive stretching and the elasticity would thereby be considerably reduced. This property of the vessel wall is accounted for by the presence of the muscular coat. This is an apparatus which is able to transform the chemical energy brought to it by the blood and lymph into energy of elasticity, and thus to maintain the normal condition of elasticity of the vessel wall."[2]

---

[1] Nos. I., II., III., IV., V., VI., and VII. were published in The Lancet of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), 22nd (p. 256), and 29th (p. 318), and Feb. 5th (p. 388) and 19th (p. 521), respectively.

The function of muscular tissue in withstanding the stretching effects of long-continued or oft-repeated pressure is further recognised by Thoma in the following passage: "Whenever throughout the body a wall composed of soft parts is exposed to repeated high pressure muscular elements are found, and never elastic tissue alone."[3] And again: "The function of the unstriped muscle fibre in the trachea and in the entire bronchial tree is to offer resistance within the air-passages to the increased pressure that occurs in all forced expirations, as in speaking, singing, blowing, straining."[4]

* * * * *

We are now in a position to sum up the chief functions of the muscular tissue in the blood-vessels.

The arteries.—1. To modify the arterial lumen and thus: (*a*) To regulate the supply of capillary blood to different regions of the body in response to local functional requirements; and further, by controlling peripheral resistance to hold back a due proportion of blood in the arterial segment, and thus to prevent it from rushing too rapidly into the veins. This regulation is effected essentially by the arterioles. (*b*) To prevent the blood from flowing too rapidly into dependent parts and thus accumulating unduly in the capillaries and veins of such parts. (*c*) To regulate the capacity of the systemic arterial system and thus the relative quantity of blood in the arterial and venous segments of the systemic circuit. Thus when the proportion of blood in the systemic arteries is greatly augmented they tend to relax, and, contrariwise, when it is suddenly diminished they tend to become hypertonic. It is true that the arteries are able to adapt themselves to considerable variations of blood content by virtue of their passive elasticity; nevertheless, such variations generally require some modification in tonus. It would be impossible, e.g., for the systemic arterial segment to attain its maximum capacity when in a state of generalised hypertonus, no matter how powerfully the left ventricle contracted; nor, on the other hand, could it attain its minimum capacity by mere passive recoil. This does not reduce the arterial capacity to the same extent as complete hypertonus. It may be regarded as certain that in severe shock and in extreme cardiac failure when the blood accumulates in large quantity in the systemic veins, the capacity of the systemic arterial segment is by hypertonus reduced considerably beyond the limit of complete passive recoil. 2. To prevent the arteries of dependent parts from being temporarily sagged out by the hydrostatic pressure of the blood. 3. To prevent the arterial walls from being overstretched by the long-continued action of the blood pressure, thus obviating organic dilatation and tortuosity. 4. To assist by active contraction in stopping hæmorrhage after severance of an artery.

The veins.—1. To modify the venous lumen and thus: (*a*) to regulate the rate of blood-flow and the blood pressure in the capillaries in response to local functional requirements (this regulation is effected by the venules); and (*b*) to assist in regulating the distribution of blood as between one large portion of the vascular system and another. When there is a relatively large quantity of blood in the systemic arterial segment, the tonus of the systemic veins (in which I include the portal veins) is probably greater than when the arteries contain comparatively little blood, and contrariwise. So far as the portal system of veins is concerned, these are known to be supplied with vaso-motor nerves, and there can be little doubt that the tonus of these vessels varies considerably from time to time. 2. To prevent the veins of dependent parts from being sagged out by the hydrostatic pressure of the blood. 3. To prevent the venous walls from being permanently over-stretched by the blood pressure, thus obviating varicosis. 4. To assist by active contraction in checking hæmorrhage after severance of a vein.

The Resistance of the Capillaries to Progressive Yielding under the Influence of the Blood Pressure.

We have seen that in order to prevent them from yielding progressively under the protracted influence of the blood pressure the arteries and the veins need the support of muscular and yellow elastic tissue. How are we to explain the ability of the capillaries, constituted as they are of but a single layer of endothelial cells, to withstand the blood pressure within them, a pressure which may amount—e.g., in the capillaries of the lower extremities—to upwards of 100 mm. Hg.? How comes it that they do not undergo a progressive yielding issuing in dilatation and tortuosity, or that they do not burst outright?

The explanation is doubtless to be sought in the fact that in consequence of the smallness of the capillary lumen the tension in the capillary wall is always kept low. Let us suppose the blood pressure in the aorta and a capillary to be the same; then, inasmuch as the vascular tension due to the blood pressure is represented by the latter multiplied into the radius of the vessel lumen, it is obvious that if the radius of the capillary is 1-500th that of the aorta the tension of the capillary wall will only be 1-500th that of the tension in the aortic wall. It has further to be remembered that all the deep-seated capillaries are supported by the tissues in which they are imbedded. Superficial capillaries, however, such as those belonging to the skin and mucous membranes, and those distributed in the walls of the pulmonary vesicles, receive comparatively little external support. It is true that the superficially situated capillaries, in common with the deeper ones, are surrounded by a certain amount of connective tissue (white and yellow elastic fibres and connective tissue cells), and that they are covered by one or more layers of epithelial cells, and this affords them some support, inadequate though it may seem. It is probable that in the case of the superficial capillaries (if not of the more deeply seated ones also) the strength of the capillary walls is regulated by the degree of pressure they are called upon to sustain. We can hardly doubt, e.g., that the capillaries distributed to the skin of the feet are better able to withstand a high blood pressure than the conjunctival capillaries, which under normal conditions are not called upon to bear more than a few mm. Hg of pressure; for not only is there (except when the head is dependent) a complete absence of hydrostatic pressure in them, but it is highly probable that their hydrodynamic pressure is kept habitually low by a due regulation of the tonus of the arterioles feeding them.

Probably no capillaries in the body are less supported than those distributed to the pulmonary alveoli, for, in order to admit of free respiratory interchange, it is necessary that as little tissue as possible shall be interposed between the pulmonary blood and the alveolar air. Their sole support consists of a delicate connective tissue (containing an abundance of yellow elastic fibres) and a single layer of flattened epithelium ; a few unstriped muscle fibres can also be traced into the alveolar walls and may possibly afford some support to the capillaries.

---

[2] The following passage from Thoma is also of interest in this connexion: "The walls of the arteries and veins of the lower extremity are much thicker and, in particular, are richer in *muscular and elastic fibres* [my own italics] than the walls of the vessels of the neck, and of the head. The walls of the jugular veins have very few muscular and elastic fibres, while the walls of the veins of the lower extremities are almost as rich in these elements as are many arteries. Similar, though less striking, differences are found in the arteries of the upper and lower parts of the body."—Text-book of General Pathology, Richard Thoma, translated by Alexander Bruce, 1896, p. 246.

[3] Ibid., p. 90.

[4] Ibid., p. 203.

Though thus to some extent supported from without, the ability of the pulmonary capillaries to withstand the pressure of their contained blood is doubtless, as with other capillaries, chiefly to be explained by the smallness of their lumen. It has further to be remembered that normally the pressure in the alveolar capillaries is but slight, say 10 mm. Hg. In disease, however (e g., mitral obstruction), it may be increased considerably beyond this. Seeing that the obstruction in mitral disease is at the end of the pulmonary circuit, it is obvious that the resulting augmentation of pressure must be felt throughout the entire length of this circuit by arteries, capillaries, and veins alike. Exactly how great this augmentation may be we have no means of ascertaining, but it seems probable that it may at least reach as high a figure as 100 mm. Hg, and it is indeed remarkable that the delicately constructed and slenderly supported alveolar capillaries should be capable of withstanding so high a pressure for weeks, months—nay, even for years together. Equally remarkable is it that they should be capable of supporting for so long a time a pressure which suffices to bring about the dilatation, and ultimately the complete undoing, of the right ventricle, an organ whose massive muscular walls are many hundred times thicker than those of the capillaries. The explanation of this seeming paradox, which for long puzzled me, is to be sought for in the formula, $t = pr$: while the tension of the capillary wall can never rise beyond a low figure owing to the low value of r (radius of lumen), any decided augmentation in the diastolic pressure of the capacious right ventricle causes the tension in its walls to become greatly augmented, owing to the enormous value of r in the case of this chamber.

Rupture of the capillaries.—Though the capillaries are peculiarly adapted to withstand the pressure of blood within them, they do at times rupture when that pressure becomes excessive. This is especially the case with superficially situated capillaries. Concerning capillary rupture from primary disease of the capillary wall (such, e g., as may result from toxic states of the blood) I shall say nothing.

The hæmoptysis of mitral disease affords a familiar instance of hæmorrhage from augmented intra-capillary pressure. As the result of the heightened pressure in the pulmonary circuit the pulmonary capillaries become dilated and tortuous, their walls at the same time undergoing considerable compensatory thickening by a multiplication of their cells, while a hyperplasia of the other elements of the alveolar wall also takes place, all of which changes (though they cannot but retard the normal respiratory interchange) doubtless serve to protect the overstrained capillaries against rupture. Another not uncommon example of capillary rupture from augmentation of intracapillary pressure is afforded by sub-conjunctival hæmorrhage. This may take place from sudden effort—e.g., whooping-cough—and presumably also from local arteriolar dilatation, especially when occurring in conjunction with heightened systemic arterial pressure. It is not unlikely that the menstrual flux is also in large measure due to dilatation of the arterioles supplying the uterine mucous membrane. We may regard it as certain that "vicarious menstruation" is brought about by a vaso-dilator mechanism. The hæmatemesis of young women, when not due to gastric ulcer—and it is only exceptionally due to it—almost certainly is.

Rupture of the retinal capillaries is not rare. These vessels are in some measure supported by the intraocular pressure, but they are doubtless normally protected from an excess of blood pressure by the tonus of the retinal arterioles. An undue relaxation of these arterioles is probably a common cause of retinal hæmorrhage.[5]

The Resistance of the Heart and the Cardiac Valves to Progressive Yielding under the Influence of the Blood Pressure.

Like the blood-vessels, the heart and the heart valves are subjected to the action of the blood pressure, and we may now briefly inquire into the means by which they are able effectually to resist the tendency to be over-stretched by it.

The heart chambers.—So far as the muscular chambers of the heart are concerned, it has to be remembered that normally it is only during systole that the intra-cardiac pressure is high, and it is manifest that a cardiac chamber cannot undergo progressive yielding while its muscle fibres are in a state of firm contraction. During diastole, on the other hand, these fibres are in a condition of considerable, though by no means complete, relaxation, and the hypotonic heart, like the hypotonic vascular media, is comparatively yieldable to pressure. Normally, no harm comes of this, inasmuch as the intra-cardiac pressure during diastole is negative, or at most only amounts to a few mm. Hg; if, however, the diastolic pressure becomes pathologically augmented, as happens in many forms of heart disease,[6] the cardiac walls undergo progressive yielding and dilatation results. Thus the process of dilatation takes place during diastole, and it has to be remembered in this connexion that the comparatively large size of the cardiac chambers renders their walls so much the more liable to be rendered tense (in accordance with the formula $t = pr$); and further, that inasmuch as the tension in the cardiac walls increases with the dilatation, every advance in dilatation renders that process so much the easier: dilatation begets dilatation.

The cardiac valves.—The ability of the cardiac valves to withstand the blood pressure to which they are exposed is a subject of considerable interest, though, strangely enough, it has received but little attention from physiologists.

Consider the semilunar valves. These thin semi-transparent structures, somewhat thicker (as might be expected) in the left heart than in the right, consist of white and yellow elastic fibres covered with endothelium. A few muscular fibres pass to them from the adjacent arterial walls. Krehl, who first described these fibres, does not appear to assign them any function in supporting the valves when they are held closed by the pressure of blood above them. Be this as it may, one can hardly doubt that they do help in this respect. Yet, even so, it is difficult to believe that such delicate structures are capable of withstanding unaided, not for a short time only but for years together, the diastolic pressure in the large vessels above them, a pressure which in the case of the aortic valves amounts to upwards of 100 mm. Hg, one, in fact, *as great as that which the aorta itself is called upon to bear.* Let the reader ponder a moment on what would happen if a portion of the aortic wall were replaced by a window of aortic valve tissue. Can it for a moment be supposed that such a window could withstand the pressure of the aortic blood?

A point of interest in connexion with this question is the manner in which the semilunar valves close. In all the students' text-books, without exception, they are described as being driven together, forcibly hammered down as it were, by the shock of blood pressure above them, this sudden concussion and simultaneous augmentation in the tension of the valves (and of the walls of the adjacent arteries—aorta and pulmonary artery) producing the second heart sound; and we are asked to believe that the slender semilunar valves are capable of withstanding upwards of a hundred thousand such bangings every 24 hours—and this for several scores of years. Such a supposition is as unwarranted as the one which regards the semilunar valves as capable of withstanding unaided the pressure of blood above them. We may, indeed, regard it as tolerably certain that these valves, far from being violently slammed, are closed gradually and gently; and further, that during ventricular diastole they must be supported on their cardiac surfaces in some manner which physiologists have not taken account of.

---

[5] In some books it is stated that the retinal arterioles are devoid of muscular fibres, but this is assuredly not the case, for their varying degrees of tonus may actually be observed by means of the ophthalmoscope.

[6] The causes of augmented intra-cardiac diastolic pressure are: *a.* Regurgitation.—When this happens the blood is actively squirted into a cardiac chamber through its orifice of exit. Thus in aortic regurgitation the blood is driven with the full force of the aortic recoil into the relaxed left ventricle, and in mitral regurgitation it is pumped by the vigorous contraction of the left ventricle into the left auricle. The term "back-squirting," though inelegant, is more expressive of what happens in these cases than the term "regurgitation," which rather suggests a purely passive process. *b.* Inadequate systole.—This leaves an excess of residual blood in the inadequately systolising chamber, and this excess *plus* the charge of blood entering in the ordinary way gives rise to excessive diastolic distension. This is the mechanism of the left ventricular dilatation which takes place in aortic obstruction and in the obstruction resulting from generalised hypertonus of the systemic arterioles (e.g., in granular kidney). *c.* Excess of blood entering a heart chamber by the normal route.—During sprinting, e.g., the rhythmic contraction of practically the entire bodily musculature may pump the blood more rapidly into the right heart than the latter can deliver it into the lungs.

More than 20 years ago Mayo Collier argued for a gradual closing of the semilunar valves. Among recent writers Leonard Hill appears to be alone in holding this view. He maintains that their closure is "effected gently and leads to no sound."

In considering how the semilunar valves are supported during diastole, it must not be forgotten that they are so disposed as to receive some support from the ventricular wall, even during full ventricular diastole. I believe Sir William Savory was the first to draw attention to this fact. Among students' text-books the only one in which this point is referred to is that by Noel Paton, who draws attention to the fact that in the case of both the aortic and the pulmonary valves the lowest cusp is mounted on the cushion of the septum ventriculorum, and he argues that "the prejudicial effect of too great pressure upon these cusps is obviated by the lower cusp being mounted on the top of the muscular septum upon which the pressure falls—the other cusp shutting down upon this one." During complete ventricular diastole, however, a considerable portion of the valves is, in spite of this arrangement, left unsupported. Some other mechanism must be at work of which no account has yet been given. What its nature is I leave the physiologists to determine. Primâ facie it does not seem unlikely that a *ring of ventricular wall immediately beneath the valves remains contracted during the earlier part of diastole, and that it does not begin to relax until the intra-ventricular pressure has become sufficiently high to afford the valves substantial support.* (See note at the end of this section.)

But by whatever mechanism—anatomical, as set forth by Paton, or physiological as just suggested—the semilunar valves are supported during diastole, it is obviously insufficient of itself to prevent regurgitation in the absence of valves. This is evident from the fact that when these are rendered incompetent regurgitation occurs; and, indeed, were it otherwise they would have no *raison d'être*. On the other hand, it seems certain that the semilunar valves do not constitute the sole mechanism by which regurgitation is obviated, seeing that even in cases of extreme incompetence the amount of blood which regurgitates with each beat is—for some time at least—very much less than that which is driven through the systemic circuit, whereas, if the semilunar valves constituted the sole obstacle to regurgitation, the aortic blood would in such cases actually pass more readily backwards than forwards, seeing that the ventricular pressure during diastole, especially at the beginning of diastole, is so very much less than is the aortic pressure. I suggest that the comparatively small amount of blood which regurgitates under the circumstances is due to a diastolic sphincter action as above described.

A further question of interest presents itself at this point. Assuming the existence of such a sphincter action, it seems not improbable that as the ventricular dilatation which accompanies aortic regurgitation progresses, this sphincter action becomes increasingly inadequate, and that in this way dilatation of the left ventricle favours aortic regurgitation.[7] A dilated ventricle must also tend to favour regurgitation by providing increased room for the regurgitating blood.

Auriculo-ventricular.—We have next to consider the auriculo-ventricular valves from the point of view of the pressure they are required to sustain. This, be it noted, is no more than that which the corresponding semilunar valves have to support, the systolic pressure in each ventricle being practically the same as the aortic and pulmonary pressures respectively. Nevertheless, the auriculo-ventricular valves, of which (as in the case of the semilunar valves) the left is more powerful than the right, are much more powerfully constructed than the semilunar valves, constituted, as they are, of dense fibro-elastic membranes considerably strengthened by muscular tissue. During systole the auriculo-ventricular ring narrows considerably and the valves form a dense, compact mass, offering assuredly a far more powerful resistance to pressure than is offered by the closed semilunar valves, a resistance which is, indeed, capable of withstanding unaided the maximum intra-ventricular systolic pressure. This difference in the strength of the semilunar and the auriculo-ventricular valves is significant, seeing that each is called upon to bear the same amount of pressure. The explanation of the difference is doubtless to be sought for in the fact that while the former are buttressed by stout ventricular walls capable of affording support in the twofold way described, the latter can obtain no greater support from behind than that afforded by the comparatively thin auricular walls.

The valves of the veins.—These structures are well adapted to resist the pressure of the blood, consisting, as they do, not only of dense fibrous tissue, but also of yellow elastic and muscular tissue.

Note.—Since this paper was written I have ascertained that the view I have put forward regarding the existence of a ventricular sphincter which helps to support the semilunar valves during ventricular diastole has been experimentally proved to be correct. In a recent discussion (June, 1909) at a meeting of the Association of Physicians of Great Britain and Ireland on the existence of a mitral sphincter, I expressed the conviction that the semilunar valves must receive some support during ventricular diastole which the physiologists had not taken into account, and I put forward the view enunciated above. My remarks drew from Professor Thayer of Johns Hopkins University the interesting statement that Professor Steward had recently shown by an elaborate series of convincing experiments that the sphincter action I had prognosticated does in point of fact exist.

(To be continued.)

REPORT OF THE MEDICAL OFFICER FOR EDUCATION TO THE LONDON COUNTY COUNCIL.

Among the several appendices to the annual report of the medical officer of health of the Administrative County of London there is one to which the chairman of the Public Heath Committee directs particular attention in his prefatory address to the County Council; we refer to the report by Dr. James Kerr upon the medical work of the Council as the education authority for the metropolis. The present report consists primarily of a review of the proceedings during the last 21 months; but, in order to allow of comparison with previous reports, the statistics now presented show figures for the year ended March 31st, as well as for the calendar year ending with December, 1908. This change, which is in every way a desirable one, has been made in conformity with the regulations of the Education Code, and with the object of bringing the London reports into line with those of the provincial sanitary authorities, whose annual reports have for some years past been made up to the end of the calendar year. As Dr. Kerr's report runs to 79 closely printed folio pages, and discusses a variety of topics, most of which are of considerable public importance, we greatly miss the usual table of contents which, if present, would have materially assisted us in discussing its more salient points.

The period covered by the present report has been one of great activity in matters concerning school hygiene and the physical care of children, and Dr. Kerr tells us that still further and wide-reaching changes are in prospect, the nature of which he discusses at some length. From his remarks we gather that public opinion in the metropolis is still in need of definite instruction as to what the duties of an education authority should be and as to the due limitation of those duties. Otherwise there is danger of a labyrinth of legislative enactments as well as of a tangle of overlapping authorities, which will cause future trouble and confusion. As illustrative of this tendency the medical officer points to difficulties already experienced in London because of the overlapping of function among the several authorities concerned. "Hitherto," he says, "in our work it has for practical purposes been attempted to render unto Cæsar the things that are Cæsar's by regarding all that concerns the child in school as under the control of the education authority and all that concerns it beyond the school as being under the control of other local authorities, but in practice there is often lack of coördination and sometimes differences of standard which give rise to results that are most grievous." In regard to personal cleanliness, for example, we learn that efforts to secure this prime necessity among school children have often been frustrated by the lack of suitable local provision for cleansing purposes. Again, during periods of diphtheria prevalence several sanitary authorities have refused to test the conditions existing in children excluded from school as suspicious, on the ground that this duty belongs to the education authority. But the education authority simply excludes such children from school until the risk of infection is past, leaving the sanitary authority to deal with suspicious cases in their own district. Existing provision for the care of idiot and imbecile children is cited as another striking instance of administrative confusion. At present, as far as we know, there is no authority that is responsible for the care of non-pauper idiot or imbecile children. A child excluded from the special schools as imbecile is generally refused help by the guardians, but in the event of the care of an imbecile child being undertaken by them the parents are thereby pauperised, even although they may have paid the whole cost of the child's maintenance in a Poor-law institution. In Dr. Kerr's judgment the most economical and practical solution of the present difficulty is this, that any public provision for protecting and aiding the growth and development of these children should be made by the education authority, but for whose past exertions the light shed on ordinary educational problems in the last few years by the study in our schools of feeble-minded and partially defective children would have been almost entirely lost.

---

[7] On the other hand, the dilatation of the left ventricle in aortic regurgitation is compensatory (as was first pointed out by Dr. Herbert Davies) in so far as it enables this chamber to drive its normal charge of blood the round of the circulation with every beat: in full compensation the ventricle dilates just enough to receive its normal charge of pulmonary blood, plus the amount which is destined to regurgitate into it.

Provision for Medical Inspection.

In May, 1904, the London County Council took over the work of the late School Board, with the exception of that connected with the medical inspection of non-provided schools. Although the experience of the School Board had shown the serious conditions existing in various directions, the work of reform was found by the Council to be so extensive as to be impossible of accomplishment by the then existing staff. Accordingly, a scheme was prepared for dealing with the general condition of the school children, the prevalence of infection, the promotion of cleanliness, the hygiene of school work, and the sanitary amendment of school buildings.

In 1906 a complete system of medical supervision was extended to all non-provided schools, and large numbers of children were discovered who ought to have been accommodated in special schools, the rolls of which increased at once from 7056 to 8892. At the end of 1908 the medical staff numbered 52, of which the chief medical officer for education and 11 assistants form the permanent staff. The statutory medical inspection of schools is carried out by a temporary staff of "school doctors," each in charge of a district and having one or more medical assistants. Each member of the temporary staff holds office for a period of three years. The school nursing staff consists of a superintendent and 51 school nurses, who undertake the supervision of personal hygiene in both elementary and secondary schools. The details of routine medical inspection of schools need not be summarised. The names of children known to possess any abnormality, except defective vision, are reported to the school doctor, who takes note of every case of defect of hearing, speech, or locomotion, and registers particulars of such defect with a view to subsequent medical treatment. The general condition of the children as regards physique and nutrition is also entered in his report, together with particulars concerning the "hygiene of school work," such as the methods and duration of study, and any other matters affecting the health either of the teachers or of the taught. Moreover, the sanitary condition of the school buildings is closely examined by the school doctor, with especial regard to the lighting, heating, and ventilation of the rooms in which work is carried on. Lastly, the teacher has abundant opportunity for discussing with the doctor all matters affecting the health of the school, and arrangements are made for admission to a special hospital of cases requiring such treatment. All the foregoing particulars are recorded in the medical register now kept in each school, and this is forwarded with the doctor's report to the head office, where the conditions requiring attention are noted and dealt with.

Education (Administrative Provisions) Act, 1907.

The whole aspect of medical inspection in elementary schools has, of course, changed since the passing of the above Act. In addition to the inspections above referred to, which will, of course, be continued, the children in 80 selected schools will in future be brought under routine inspection. In one half of these schools the examination will be conducted in conformity with the Board of Education schedule, and in the remainder the clerical records will be kept in a somewhat simpler fashion. Where practicable it is intended that the examination should be conducted in school premises, the parents being invited to attend. A school nurse and the class teacher will also be present to assist the doctor and to obtain all needful information respecting the pupils. The education medical officer is hopeful that in the process of school inspection much assistance will be derived from the school teachers, "whose duty it is," in the words of the report, "not merely to teach but to educate"; and for this purpose they must become familiar with the mental and physical qualities of their pupils. Many teachers have a praiseworthy knowledge of their charges, but all of them ought to be able to note the height, weight, visual acuity, hardness of hearing, want of clothes or personal cleanliness of the pupils, for it is essential to their success as educators that they should be alert in observing such things for themselves.

Medical Examination of Infants.

From a special examination of infants at ages from three to five years we learn that out of a total of 221 only 115 could be regarded as normally healthy, while 46 per cent. of the boys and 38 per cent. of the girls were in some way defective. The largest number of defects were due to naso-pharyngeal affections, such as enlarged tonsils, adenoids, nasal obstruction, or mouth-breathing. One or other of these conditions was present in 20 per cent. of all the infants examined and in 47 per cent. of the defectives. But the true gravity of naso-pharyngeal defects in early infancy is not apparent until later in childhood, when there supervene such serious consequences as deafness, otorrhœa, dental caries, and other associated conditions.

Enlarged Glands.

The causes of 1500 cases of enlarged glands, distributed among the schools of London, were investigated by Miss A. M. Roberts, who contributes interesting particulars to this report. Tubercle is in some cases the cause of enlarged glands, but in many cases an irritant action apparently precedes the tuberculous infection, such as the irritation of pediculi, the catarrhal changes produced by enlarged tonsils or adenoids, carious teeth, blepharitis, conjunctivitis, and other affections of low infective power. From Miss Roberts's experience it appears that the cases among girls were much more numerous than among boys, perhaps from the less frequent pediculous irritation of the scalp among the latter. On the other hand, whilst 50 per cent. of the boys had decayed teeth without enlarged glands, only 13 per cent. of the girls were similarly affected, thus evidencing the large part played by pediculi in causing such irritation. When tubercle effects lodgment in chronically inflamed glands there is always risk of its progress, so that the brain, lungs, or peritoneum may ultimately become affected. Dr. Kerr properly insists that the foregoing inquiry shows the extreme importance of cleanliness among school children, as well as the necessity for the treatment of chronically enlarged tonsils and of carious teeth.

Adenoids.

An interesting account is given of the extent to which adenoids prevail among London school children. In the course of the year 1506 children were medically examined, and of these not fewer than 663 were found affected with adenoids and enlarged tonsils, and 75 with enlarged tonsils only. Of the 2251 children on the rolls of the schools selected about 7 per cent. were in a state requiring surgical treatment. But even these figures give an imperfect idea of the mass of educational inefficiency which they represent. Inattentiveness, dulness, backwardness, spurious mental defect, varying deafness, bronchial irritation, recurring colds—these are the regular accompaniments of obstructed nasal breathing, and Dr. Kerr tells us that they are so frequently mistaken for signs of phthisis that one lady medical inspector in another part of the country has recently attempted to show that some 14 or 15 per cent. of the elementary school children in that district are consumptive.

Underfed Children.

Dr. Kerr's critical remarks on this subject deserve attentive consideration. He tabulates evidence derived from certain of the London schools, showing the average amount of underfeeding, or rather of improper feeding, discovered in that portion of the school population; the principle of classification being (*a*) the degree of nutrition (good, indifferent, and bad), and (*b*) the amount of anæmia, as tested by colour (normal, pale, and very pale). With respect to the kind of food ordinarily given to school children experience shows that the children of the poor, and not necessarily the very poor, never eat fresh vegetables, that they rarely have fresh milk, and never enough of it; good eggs are unknown to them. They appear to live largely on bread, tea, and broth, with an occasional meal of bacon or frozen meat. This is the result either of carelessness or of ignorance, and is largely due to the fact that the mothers often have more to do than they can manage. From careful inquiry it appears that the usual breakfast of school children consists of tea with bread and butter, such cheap and wholesome food as oatmeal porridge, milk, and dripping being almost entirely denied them. The schools examined for the aforesaid purpose are arranged under three heads: (1) good schools, (2) medium schools, and (3) poor schools, and for each group tables are given in the report which deserve attentive study. "It is at once evident," says Dr. Kerr, "that although there is no direct connexion between anæmia and bad nutrition, both conditions are commonest in the poorer schools. Ill-nutrition is related largely to want of employment and consequent privation. It is also related in other cases largely to bad housing; to want of sleep and large families. Anæmia seems to be also intimately associated with the presence of adenoids, enlarged tonsils, and other similar conditions. Regarding the schools as a whole, these three conditions seem to have about equal effects, but to be principally evidenced as want of food in the poorer, want of sleep and proper domestic hygiene in the medium schools, and want of exercise and effects of debilitating disease in the better class schools."

Infectious Diseases in Schools.

A considerable portion of this report is devoted to a consideration of the extent to which school attendance is hindered by outbreaks of infectious disease. Among diseases of children of school age, the notification of which is not compulsory, the principal are measles, whooping-cough, mumps, chicken-pox, ringworm, ophthalmia, and scabies. With the exception of the first two, these diseases, although seriously affecting school attendance, are not dangerous to life. Among children's diseases measles claims the heaviest death-toll, largely because of the ignorance of parents. The first special inquiry concerning measles was undertaken at Woolwich five years ago at Dr. Kerr's suggestion, and has been continued ever since by Dr. C. J. Thomas in coöperation with Dr. Sidney Davies, the local medical officer of health. It may be said to have revolutionised our ideas on the subject, for it has given valuable information regarding the distribution and the treatment of outbreaks of measles in schools. It has resulted in a great saving of school attendance and has shown incidentally that measles fatality is capable of further reduction. The following procedure has been adopted in London generally, with the approval of the Local Government Board. The head teacher makes inquiry as to the measles history of every infant on admission to school. If a child has already had measles the fact is recorded in the register; if the child is not known to have suffered that fact likewise is recorded. The record thus established shows the proportion of children protected by previous attack to those unprotected, and it is upon this knowledge that all action is based. Immediately on the occurrence of a case of measles in a school a card is distributed to each of the unprotected children in the room warning the parents of the danger of infection and pointing out the serious character of measles. The case is then reported to the medical officer, who determines the precautionary measures desirable in view of the proportion of susceptible children in the room. School closure in outbreaks of measles is undertaken solely as a preventive measure, since it has been proved to be futile to take this step when once measles is established in a school; it is therefore carried out only on the first appearance of the disease in a class-room. Even when carried out successfully, closure in London only postpones an attack for a few months, and is of little value except when applied to babies' rooms.

Scarlet fever and diphtheria are the only notifiable diseases which to any material extent affect children at school. Charts are inserted in the report showing the incidence of both these diseases during the period under notice. Whilst the inquiries into the natural history of measles and of diphtheria have led to practical means of dealing with these diseases and have effected diminution in loss of school attendance, scarlet fever has not furnished a similar return. "We have ascertained," writes Dr. Kerr, "that the peeling stage of scarlet fever is of little importance as regards infectivity, and also that a large proportion of people escape the disease." Again he writes: "Closure of a school or department for scarlet fever, as it is now met with, may be relegated to the list of crude and unscientific measures ...... ill-considered measures of closure signify failure to detect the sources of spread, unrecognised cases possibly continuing to spread disease unchecked out of school."

In scarlet fever outbreaks occurring in London we learn that closure is now seldom applied, individual inspection and exclusion of suspicious cases being found to be of much greater utility in controlling the disease. Diphtheria is controlled in the metropolis by means of bacteriological investigation, and the exclusion and notification of children found to be harbouring bacilli. School closure for diphtheria, except in unusual circumstances, may mean loss of control of dangerous cases.

GRATUITOUS MEDICAL RELIEF IN SCOTLAND.

In our second article on the Report of the Poor-law Commission on the position in Scotland we referred[1] to the prominent place assigned in it to the gratuitous services rendered by medical men to the poor, to the abuse of medical charities in towns by those well able to pay for treatment, and to the absence of provident dispensaries and of medical service organised upon a provident basis. Whatever undesirable features at times and in individual cases may distinguish medical assistance thus obtained and paid for by combinations of working men, it implies a quality of thrift and independence of charity which we might expect to find existing no less north than south of the Tweed. Not to offer remuneration for that which is given gratuitously to those too poor to pay for it may be a tendency arising out of a thrifty disposition, but the idea of becoming dependent upon charity is repugnant to many, and although hospitals offer temptation by opening their doors freely to the necessitous poor, and exist for that purpose, the medical man is in a different position. He, no less than his humblest patients, pursues his calling with a view to earn his living, and to ask him to supply medical attendance as an act of charity is no less begging than to petition his neighbour, who may be a merchant, for its pecuniary equivalent. Why, then, should medical charity, public and private, or the abuse of it, take the place in Scotland, as apparently it does, of that medical aid which the Poor-law should pay for and of which it should regulate the distribution?

The report of the Poor-law Commission supplies the answer and contains evidence distributed through its pages of causes which have led to an absence of deterrent shame in connexion with the seeking of free medical aid. More particularly, an appendix following the report brings before us in a compendious memorandum by Professor Smart on "The History of the Scots Laws prior to 1845," the circumstances in which begging became, as it were, part of the system of Poor-law relief. The memorandum referred to is an interesting document, tracing the law relating to vagrancy in Scotland back to two statutes passed in the reign of

---

[1] The Lancet, Dec. 17th, 1909, p. 1768.

James I. (of Scotland). These were directed against able-bodied vagabonds refusing to work and preferring to live by "sorning," or sponging upon their neighbours. The first of these Acts passed in 1424–25 deliberately distinguishes the able-bodied from those for whom begging is to be recognised if not as a profession, at any rate as furnishing means of existence. "It is ordained" in it "that na thiggar be thollyt to thig, neither in burgh nor to land, betwixt fourteen and seventy years of age, but they be seen by the council of the town or the commons of the country that they may not win their living otherwise." Those thus "seen" are to be furnished with a "token" by the local authorities, and for beggars not able to display their tokens and refusing to work penalties are provided. They are to work for their living or to be burnt on the cheek and banished. The second Act, passed in 1425–26, defines the mode of inquiry with regard to idle men having no visible means of subsistence, and the principles laid down in the two Acts referred to are traceable in successive statutes relating to the subject. So far as they concern the matter under discussion they may be summarised by saying that a licence to beg was long recognised as the provision naturally to be adopted for those unable to work. The "sturdy," "strong," or "masterful" beggar was to be punished. He was on the border-line of criminality and not over-particular as to when or where he might cross it. Included with him were all "sornars," "bards," or "feigned fools," and "sic-like runners about." Those, on the other hand, who "might not win their living otherwise" found in the "awmous," or alms, a provision for their sustenance recognised by statute, subject to their compliance with the law in the matter of having a badge. This was the only legal provision made for them in the fourteenth and fifteenth centuries.

The badge or token appears at first to have been a licence to beg generally, but in 1535 an Act for the "Stanching of Maisterful Beggars" ordered that "na beggars be tholed to beg in ane parochin that are born in another," and after that each parish made its own tokens for its own beggars and extra-parochial mendicancy was an offence. Not much later than this, in 1597, the Kirk Sessions were assigned the duty of administering the Poor-laws and were enabled to "stent" or levy contributions from the inhabitants of the parish for the relief of the poor. The power of compulsory assessment for poor-relief was, however, adopted with reluctance, and very gradually through succeeding generations, the free contributions of parishioners to the offertory being almost universally preferred, and there are still four parishes in Scotland which have no legal assessment for the relief of their poor. We are not now tracing the history of the Scottish Poor-law or discussing the merits of the voluntary charity once administered universally by the Kirk Sessions, and now largely superseded by the levying of a compulsory rate. Nor are we concerned with the convenience or inconvenience of licensing beggars to solicit alms from door to door within prescribed areas, and its results with regard to general mendicancy in modern times. We mention, however, as a matter of some interest that although the licensed beggar has practically disappeared the Commission found a survivor in the person of a first-cousin of the provost of a certain town. He is stated to be an imbecile man, having the sum of £190 (a legacy) held in trust for him, enabling him to pay £2 half-yearly as rent, and being also permitted to collect the other necessities of life by "going through the houses." Our submission, however, is that legal approval of licensed begging and the subsequent elaboration of a system of poor-relief by church alms must have accustomed those in a position to help their neighbours to regard it as a duty, or as a more or less necessary obligation to do so, and that those who could give medical aid have naturally done so, either in addition to, or in the place of, money doles to the beggar and contributions to the offertory. Naturally such a tradition must have accustomed the modern poor to expect voluntary aid from the medical man rather than to pay him a small fee out of the money which the administrators of parochial alms supplied.

The licensed beggar may well have had the same feeling from the earliest days of his legal recognition, and it must often have been convenient to the medical man to help professionally rather than pecuniarily a class the membership of which between the ages of 14 and 70 years was only granted by law to "cruikit folk, blind folk, impotent folk, and waik folk." The poorer Scot has, in fact, been trained by the tradition and practice of centuries to seek personal rather than official assistance; and his neighbour, often not much better off than he, has in like manner inherited a willingness to assist him freely and without legal compulsion.

The expenditure in Scotland upon medical aid given under the Poor-law has increased slowly at first but more rapidly in recent years ever since the Poor-law Medical Relief Act of 1845 and the Medical Relief Grant of 1848. The sum so spent amounted in 1851 to but £20,311, and had risen in 1891 to £42,566; 10 years later it was £55,278; and in 1905 £66,651. In the large towns voluntary hospitals, and everywhere the charity of medical practitioners, assist in the care of the sick, some of whom are fit cases for Poor-law treatment, some of whom are properly objects of such charitable aid as the voluntary hospital and the private medical man can most advantageously supply, and of these a considerable number are persons capable of paying for their treatment but deliberately avoiding doing so. We read in the report of the Commission that the general hospitals of Glasgow are taxed to their fullest extent, the Western Infirmary having a waiting list of between 400 and 500 patients, and that similar conditions prevail at such centres as Edinburgh, Dundee, and Aberdeen. We note in the same page (p. 149) the prevalence in Scotland of "subscribers' lines" (giving the privilege of treatment), and also that "no general infirmary or hospital, so far as we have been able to ascertain, has made any systematic attempt, either by appointment of an almoner or otherwise, to institute inquiries into the circumstances of persons applying for treatment." We are told as an example of the effect of this laxness of the patient of a private medical practitioner at Glasgow who was removed to a general hospital, where he died, and who was afterwards found to be possessed of estate valued at £10,000. The gentleman who had attended him, and to whom, at the time of his removal, he owed £100 for treatment, had in the meanwhile remonstrated ineffectually with the professor who had the patient under his care in the charitable institution. The professor had no power to prevent the abuse of charity himself and was unwilling to invoke the interference of the directors of the hospital. It is added that other examples of a similar character might easily be given, and that in the case in question the admission was by "a guinea subscriber's line."

Outdoor medical relief in large towns is spoken of by the Commissioners (p. 152) as "very largely supplemented" by the medical charities and the gratuitous attendance of private practitioners. It is observed that although medical relief does not involve disfranchisement the stigma of pauperism is sometimes believed to prevent the poor from having recourse to the Poor-law until their cases have become incurable. "At the same time," the Commissioners add, "we cannot fail to observe that on this matter we have received fewer complaints from Scotland than from England. The abundance of medical charities may in great part account for this." In small towns and lowland rural districts the Commissioners find that there is no evidence of inadequate medical attendance on the poor, although they think it not improbable that the gratuitous attendance of private practitioners largely supplements the aid given under the Poor-law. In the Highlands and Islands the case is different. Owing to the poverty of their inhabitants many of the smaller parishes cannot maintain a medical officer, and a private practitioner can hardly earn a decent living in them. The problem arising out of the abuse of medical charity can scarcely occur in such localities, but is most conspicuously before us in those large towns which form the antithesis to them. There, it is estimated by one of the witnesses mentioned in the report, gratuitous medical treatment amounts in some cases to as much as 30 per cent. of the total practice of the practitioners affected. The degree in which such medical treatment is given to patients who otherwise would necessarily be treated under the Poor-law, or would go unattended, is a question discussed by different witnesses (see p. 158) without very exact conclusions being arrived at.

The remedy of such a state of things as we have referred to must come gradually; but if legislation follows the reports of the Commissioners upon the lines suggested by them, voluntary aid councils eventually should coöperate with the medical profession in the selection of cases suitable for treatment either in voluntary hospitals or in their homes by the charitable kindness of a profession ever ready to give its assistance where the gift is really and honestly needed. At the same time public assistance authorities will eliminate from the patients of the man who now is forced by circumstances and custom to treat them as an act of charity those for whom public funds should provide medical aid. Until such legislation is accomplished it is to be hoped that improved administration of the existing Poor-law will diminish that which can but be regarded as an unjust tax upon the charitable institution and upon the private medical practitioner. The development of a healthier public opinion condemning the cadging upon voluntary hospitals and upon medical men of those who can afford to pay may also be hoped for. The organisation of medical aid upon a provident basis, moreover, does not require legislation to bring it into being where it does not now exist.

COLOUR VISION.

AT a meeting of the Royal Society of Arts on Feb. 9th, Dr. F. W. EDRIDGE-GREEN read a paper on Colour-Blindness. He first explained the theory which he has adopted to explain vision and colour vision,[1] including the evolution of the colour sense, and described briefly his spectrometer for its estimation, showing how with this instrument the limits of visibility on each side of the spectrum could be ascertained, as well as the exact size of portions of the spectrum which appear monochromatic to different persons. Proceeding to discuss the test which he advocates for sailors and engine-drivers Dr. Edridge-Green said:—

On account of the arrangement of signals by sea and land, it is necessary that persons employed in the marine and railway services should be able to recognise and distinguish between the standard red, green, and white lights under all conditions in which they are likely to be placed.

It is not only necessary to find out whether a person is able to distinguish between the red, green, and white lights, but to ascertain as well that he thoroughly understands what is meant by colour, and the individual characteristics of red, green, and white respectively. Too little attention has been paid to this in constructing tests for colour-blindness, and those who have had much practical experience in testing for this defect are aware of the ignorance which exists among uneducated persons with regard to colours. Many are under the impression that every shade of a colour is a fresh colour, and others have the most novel ideas with respect to colour. It is necessary that a sailor or engine-driver should be able to recognise a red, green, or white light by its character of redness, greenness, or whiteness respectively; that is to say, that the examinee has definite ideas of colour and is able to reason with respect to them. All persons who are not able, through physical defect, to have definite ideas of the standard colours, and to be able to distinguish between them, must be excluded from the marine and railway services. In constructing a test for colour-blindness we must not forget the element of colour-ignorance, because an engine-driver or sailor has to name a coloured light when he sees it, not to match it. He has to say to himself, "This is a red light, therefore there is danger;" and this is practically the same as if he made the observation out loud. Therefore, from the very commencement we have colour-names introduced, and it is impossible to exclude them. Making a person name a colour is an advantage, because the colour-name excludes the element of shade. If, as some persons have said, testing by colour-names is useless, then the whole series of colour-names is useless. But if I say to a friend, "That tile is red," and he agrees with me, it is evident that one object, the colour of which is by him classed as red, is also classed as red by me. The ordinary colour-names, red, blue, yellow, and green, form excellent bases for classification. The engine-driver is told that red is a "danger" signal, green a "caution" signal, and white an "all right" signal. Therefore it is very necessary that he should know what is meant by these colours. It must be noticed that it is on account of there being so many variations in hue that such great difficulty has been found in constructing an adequate test for colour-blindness, as it is the definite colours and not the variations of them of which we wish to know the number. It will be seen that it is not merely a matter of shade as far as the colour-blind are concerned, but a distinct difference in tint. The normal-sighted could divide the green of the spectrum into yellow-green, green, and blue-green, and would, in the majority of cases, be able to range all greens under these three classes. The dichromic colour-blind see two colours only and name colours in this way.

We wish to exclude all those individuals who are included in the following three classes: 1. Those who see three or less colours in the spectrum. 2. Those who, whilst being able to perceive a greater number of colours than three, have the red end of the spectrum shortened to a degree incompatible with their recognition of a red light at a distance of two miles. 3. Those who are unable to distinguish between the red, green, and white lights at the normal distance through insensitiveness of the retinal-nervous apparatus when the image on the retina is diminished in size.

The dichromic regard green and red as almost, but not quite, identical, and this fact is one which it is nearly impossible to make a person who has not thoroughly studied colour-blindness comprehend—either the colour-blind himself, the public, or an unqualified examiner. They find that many colour-blind persons are able to recognise different colours and correctly name them, and therefore set down the mistakes made to want of education in colours.

It is astonishing with what accuracy many colour-blind (dichromic) persons name colours. I have met with several who were nearly always correct when they named a colour. One educated adult in particular had become so expert that he was often able to baffle attempts made by his friends to show that he was colour-blind. When I asked him the names of various coloured objects he was nearly always correct, and did not content himself with using the ordinary colour-names but employed such terms as cerise. He told me the means he adopted; he said all colours appeared modifications of blue and yellow. The brightest and purest yellow was yellow; slightly darker and not so pure, green; darker still, red. The brightest and most typical blue, violet; less bright, blue; blue with a tinge of grey (dirty blue), purple; very impure blue, cerise. This colour appeared to him blue by day, yellow by gaslight.

The following will show how it is that the colour-blind are able, under ordinary circumstances, to distinguish between the colours included in one of theirs. All colours have not a similar degree of luminosity; thus, yellow is much the brightest colour. Red, yellow, and green have, to the dichromic colour-blind, as far as colour is concerned, a very similar appearance. They are not exactly alike in colour.

It is very important that persons belonging to the second class should be excluded, and yet none of the ordinarily used tests detect them. The rays of red at the extreme left of the spectrum are the most penetrating, as may be seen by looking at a light or the sun on a foggy day, or through several thicknesses of neutral glass. It is chiefly by these rays that we recognise a red light at a distance, and it is therefore of great importance that a sailor or engine-driver should be able to perceive them. The third class is one in which a person is able to distinguish colours easily when they are close to him, but fails to distinguish them at a distance, owing to insensibility or to the nerve-fibres supplying the central portion of his retina being impaired. As a light at a distance occupies the central portion of the visual field, it is essential that the corresponding portion of the retina should be normal. We also do not wish to exclude persons who, though partially colour-blind, have a colour-perception sufficient for all practical purposes. If the persons to be tested have to distinguish between the standard red and green lights these lights should be used as the basis of the test, because if any other test were used we should still have the same problem before us from a practical point of view. A sailor might (with reason) object to any other test, and say that because he cannot distinguish between a green and a grey wool it is no reason why he should be unable to distinguish between the red and green lights. The candidate's capacity in this respect may be tested with a lantern which I now show. By using a lantern with slides containing standard red and green glass we can obtain the necessary colours. But there are few colour-blind persons who cannot distinguish between the red and blue-green lights at a short distance. A simile will show how they are able to do this. If a normal-sighted person were to take two coloured glasses, green and blue-green, and place them in a lantern at a short distance, he would be able to distinguish between them with ease. He would see as much difference between them as the colour-blind (dichromic) do between the standard red and green. But as the distance became greater he would find more difficulty in distinguishing between the green and blue-green, and it would be very unsafe to trust a ship or a train to his powers, especially when one light only was shown. The dichromic colour-blind find the same difficulty with ordinary red and green. The intensity and character of the light should, therefore, be changed without the knowledge of the candidate. This may be done effectually with certain kinds of neutral glass. The glasses I use, like a mist or fog, are most transparent to the red rays at the extreme left of the spectrum, and when several glasses are used together the light allowed to pass through them has a distinctly reddish hue. The normal-sighted easily recognise coloured lights that have had their intensity diminished by these neutral glasses, but the colour-blind find great difficulty in distinguishing the colours in these circumstances. The test consists in naming coloured lights, which are shown unmodified and modified, as they would be under ordinary atmospheric conditions. The neutral glasses represent fog, the ground glass mist, and the ribbed glass rain.

---

[1] THE LANCET, Oct. 2nd, 1909, p. 986.

The following are the objections to the wool test, which is the official test of the Board of Trade. The material for the purposes of a colour-test is not a good one. First, we have the difficulty of obtaining correctly coloured wools, then there is the great difficulty in obtaining duplicates of these wools; because two colours look alike it is not by any means necessary that they have the same composition. The probability is that if the dyes used be different the colours will differ in composition. When a good set of wools has been obtained the colours are liable to fade; and this fading will take place more rapidly in the case of some colours than in others. This will prevent the results of examinations made with one set of wools from being uniform and comparable. Then, the wools will become soiled, and this will happen in a very short time if the testing be conducted chiefly among the lower orders. Then the greens which it is necessary to pick out will become more soiled than the others, and so afford a mark of distinction to the colour-blind, who, not being confused by the striking differences of colour, are able to notice minutiæ of this kind. It will be found in testing a large number of persons that those who are colour-blind will try to find some distinguishing mark in the wools selected by others. There are other points connected with the material which enable the colour-blind to pass the test. They may distinguish between brown and green by the touch but not by the colour. The relative luminosity of the colours of wools is very great, and forms a distinguishing point to the colour-blind. An ordinary red-green colour-blind will not put a yellow wool with a green or red one, but he will put yellow glass with green or red glass.

The test colours used are a light green and a light shade of rose. A red is also used as a confirmatory test. A pure green is one of the worst possible colours to choose for a first test. If the blue-green be removed colour-blind persons may easily pass through the test without detection.

Whom are we to reject by this test? If we reject all the (so-called) partially red and green blind we shall reject many persons who are practically competent. If we only reject the (so-called) completely red or green blind we shall allow many persons who are dangerously colour-blind to officiate as signalmen. The test is more theoretical than practical, the main object of testing for colour-blindness being apparently lost sight of; thus, it has to be proved that a man who puts a confusion-colour with a green wool cannot distinguish between a red and a green light. Then when a man has put a confusion-colour with a green wool there is still the point to be decided whether he has been judging more by shade than by colour. A light green and a greenish-grey are very much alike to an uneducated man. In my experience an ignorant pentachromic or tetrachromic colour-blind (that is, a person who is partially colour-blind, but not colour-blind to an extent necessitating his rejection) is more likely to fail than an educated dichromic (red-green colour-blind). A person with central scotoma or insensitiveness to colour when occupying a small portion of the field of vision will escape detection if examined by this test. For example, I examined a person with central scotoma with my pocket colour-test (in which small pieces of coloured material are ranged in rows), and found him colour-blind with regard to red, green, and grey. I then examined him with Holmgren's test, and he went through it correctly with the greatest ease. As a light at a distance occupies the central portion of the field of vision, these persons will be found to recognise colours when close to them, but not when they are at a distance. The red end of the spectrum may be considerably shortened, so much so that a person may scarcely be able to distinguish red from black. It is obvious that this will not prevent him from matching a light green wool with other green wools. It is not by any means an efficient test. We cannot reject by it those persons who would be dangerous, as sailors or engine-drivers, and only those persons. It is also possible to instruct a red-green colour-blind so as to enable him to pass through this test with ease. I have taught an uneducated red-green colour-blind (not, of course, a candidate for one of the services) to pass through this test with less than five minutes' instruction. This man had previously painted a picture for me, representing the grass with vermilion, believing that he had made a very good match. After my instructions he picked out the correct colours with ease and certainty. It must not be supposed that these instructions were elaborate. I first told him to notice the exact colour of the test green, and when picking out the colours to be guided by colour only and not in any degree by shade. Having picked out the correct colours I showed him that they formed a series commencing at a very light green and ending at a dark one; I told him, therefore, to avoid all colours of the same shade as the test green and to note how many wools I had picked out. I then picked out a typical blue, yellow, and red, and placed them beside the test green. I then told him that he need only know four colours—red, yellow, green, and blue—and must pick out the exact hue of green, carefully avoiding all greens which inclined to yellow or blue.

In conclusion, I may mention that this test has in practice been a failure. I have examined a great many dangerously colour-blind men who have passed it, and many others have had the same experience. In the Board of Trade report for 1908 it will be seen that of those who were rejected by the wool test, and who appealed, over 53 per cent. were found to be normal sighted and to have been rejected wrongly. I hope that a committee will soon be appointed who will examine the facts fairly and carefully.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 25th, 1832.

At the debate at the *London Medical Society* on Monday night, the impressions *pro* and *con* on the cholera had not abated one jot, and it was now a charge brought against the *Cons* that they would believe in *no* evidence that could be adduced by the *Pros*.* Gentlemen (said Mr. HOOPER) came to him to see cases, but they never would acknowledge that any of the stages were indicative of a new disease, although out of seven cases he had attended, four had died. He showed them the blood, black as ink, thick as treacle, and not coagulated. They replied, "Oh, there is nothing peculiar about the blood." Well, the patients have no pulse, are as cold as ice, and vomit excessively before the visitors, who answer, "These things often occur in my practice." He would show the evacuations which in one case were at the time running away from the patient in a flood, of the colour and character of rice water.—"Why," the reply was, "we have seen such stools as these." The vomiting was like chyle, the exhaustion was frightful, the countenance such as he had never before seen, but it all went for nothing, for the visitors would coolly pronounce the whole disease "congestive typhus."

---

* This is the profession which is distinctly charged with trying to "create" a disease and raise an alarm. One of the proudest characteristics of the age, is said to be the amazing facility and speed with which men write powerful leaders in daily papers. If hasty charges and coarse insinuations are the requisites for powerful writing, then most assuredly the facility with which daily leaders are concocted need not *amaze* us.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8284 births and 5055 deaths were registered during the week ending Feb. 19th. The annual rate of mortality in these towns, which had been equal to 17·0 and 16·6 per 1000 in the two preceding weeks, further declined to 15·8 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 15·7 per 1000, and the mean rate in London during the same period was also equal to 15·7. The lowest reported annual rates of mortality in the 76 towns last week were 7·4 in Hornsey, 9·1 in Aston Manor, 9·2 in King's Norton, and 9·3 in Wallasey; the rates in the other towns ranged upwards, however, to 21·8 in Burnley, 22·2 in Swansea, 22·8 in Hastings, and 23·9 in Birkenhead. In London the recorded death-rate last week was equal to 16·3 per 1000. The 5055 deaths registered in the 76 towns last week showed a further decline of 256 from the numbers returned in the two previous weeks, and included 328 which were referred to the principal epidemic diseases, against 361, 354, and 331 in the three preceding weeks; of these 328 deaths, 135 resulted from whooping-cough, 71 from measles, 47 from diphtheria, 35 from diarrhœa, 22 from scarlet fever, and 18 from "fever" (principally enteric), but not one from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases was equal to 1·0 per 1000, and corresponded with the rate in the previous week. No death from any of these epidemic diseases was registered last week in Bristol, Croydon, Brighton, Norwich, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·6 in Swansea, 3·0 in Hanley, 3·4 in Ipswich, and 5·8 in Burnley. The fatal cases of whooping-cough in the 76 towns, which had been 165, 157, and 162 in the three preceding weeks, declined last week to 135; they caused annual death-rates, equal to 1·5 in Walthamstow and in Hastings, 1·6 in Gateshead, and 2·5 in West Hartlepool. The 71 deaths from measles exceeded the number in the previous week by 30; the highest annual rates from this disease last week were 1·6 in Swansea, 3·4 in Ipswich, and 5·3 in Burnley. The deaths referred to diphtheria, which had been 67 and 40 in the two previous weeks, rose again last week to 47, of which 13 occurred in London and its suburban districts, 5 in Manchester and Salford, 5 in Sheffield, and 3 each in Portsmouth, Halifax, and Newcastle-on-Tyne. The 35 deaths attributed to diarrhœa were fewer by 10 than those in the previous week. The fatal cases of scarlet fever, which had been 36, 30, and 31 in the three preceding weeks, declined to 22 last week, and were fewer than in any previous week of this year; they included 9 in London and its suburban districts, 3 in Manchester and Salford, and 2 both in Blackburn and in Birmingham. The 18 deaths referred to "fever" showed an increase of 6 upon the exceptionally low number in the previous week; 2 fatal cases of enteric fever were recorded both in Portsmouth and in Nottingham. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily declined in the 18 preceding weeks from 2819 to 1881, had further fallen to 1784 on Saturday last; 215 new cases of this disease were admitted to these hospitals last week, against 213 and 212 in the two preceding weeks. The Metropolitan Asylums Hospitals contained but one case of small-pox on Saturday last. Of the 1526 deaths registered in London last week, 395 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 285 to 425 in the five preceding weeks; these 395 deaths were 42 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 38, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Salford, and in 47 other smaller towns; the 38 uncertified causes of death in the 76 towns last week included 7 in Birmingham, 5 in Liverpool, and 2 each in Manchester, St. Helens, Preston, and Warrington.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 870 births and 643 deaths were registered during the week ending Feb. 19th. The annual rate of mortality in these towns, which had been equal to 20·5 and 17·0 per 1000 in the two preceding weeks, rose again to 17·7 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 18·1 per 1000, and exceeded by 2·4 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 10·6 and 16·0 in Paisley and Aberdeen to 28·0 in Perth and 34·7 in Greenock. The 643 deaths from all causes in the eight towns last week showed an increase of 28 upon the number returned in the previous week, and included 69 which were referred to the principal epidemic diseases, against 100 and 92 in the two preceding weeks. These 69 deaths were equal to an annual rate of 1·9 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 1·0 per 1000. The 69 deaths from these epidemic diseases in the Scotch towns last week included 37 from measles, 11 from diarrhœa, 7 from diphtheria, 7 from whooping-cough, 5 from scarlet fever, and 2 from "fever," but not one from small-pox. The fatal cases of measles in the eight towns, which had been 54, 46, and 55 in the three preceding weeks, declined to 37 last week, of which 27 occurred in Glasgow, 4 in Edinburgh, 3 in Greenock, and 2 in Leith. The 11 deaths attributed to diarrhœa corresponded with the number in the previous week, and included 6 in Dundee and 4 in Glasgow. The 7 deaths referred to diphtheria showed a considerable decline from the numbers in recent weeks; 2 occurred both in Glasgow and in Dundee. The fatal cases of whooping-cough, which had been 9 and 7 in the two previous weeks, were again 7 last week, of which 4 were returned in Glasgow and 2 in Edinburgh. Four of the five deaths from scarlet fever were recorded in Glasgow; and of the 2 deaths referred to "fever" 1 occurred in Glasgow and 1 in Paisley. The deaths in the eight towns referred to diseases of the respiratory system, which had been 150 and 110 in the two preceding weeks, rose again last week to 135, but were 13 below the number returned in the corresponding week of last year. The causes of 15, or 2·3 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 569 births and 503 deaths were registered during the week ending Feb. 19th. The mean annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 19·1 to 26·0, declined again to 22·8 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these Irish towns averaged 22·3 per 1000, whereas the mean rate during the same period did not exceed 15·7 in the 76 largest English towns and 18·1 in the eight principal Scotch towns. The annual death-rate last week was equal to 26·5 in Dublin, 20·8 in Belfast, 26·7 in Cork, 14·4 in Londonderry, 12·3 in Limerick, and 29·2 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 20·7 per 1000. The 503 deaths from all causes in the 22 town districts last week showed a decline of 72 from the number returned in the previous week, and included 32 which were referred to the principal epidemic diseases, against 30, 34, and 32 in the three preceding weeks; these 32 deaths were equal to an annual rate of 1·4 per 1000; in the 76 English towns the mean rate last week from the same diseases did not exceed 1·0 per 1000, while in the eight Scotch towns it was equal to 1·9. The 32 deaths from these diseases in the Irish towns last week included 20 from whooping-cough, 6 from diarrhœa, 3 from "fever," 2 from scarlet fever, and 1 from measles, but not one either from diphtheria or small-pox. The fatal cases of whooping-cough, which had been 25 and 19 in the two preceding weeks, rose again to 20 last week, of which 17 occurred in Belfast. Of the 3 deaths referred to "fever," 1 in Belfast was certified as enteric and 1 in Drogheda as typhus. Both the fatal cases of scarlet fever occurred in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had increased in the four preceding weeks from 107 to 185, declined again last week to 130. The causes of 31, or 6·2 per cent., of the deaths registered in the Irish towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., and in the eight principal Scotch towns it was equal to 2·3 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Deputy Inspector-General: T. J. Crowley to the *President*, additional, for Medical Department (to date March 4th) and to Medical Department of Admiralty (to date April 1st). Fleet-Surgeons: A. Maclean to the *Vanguard*, on commissioning; and E. Sutton to the *Bulwark*, on recommissioning, and to the *Magnificent*, on transfer of flag. Staff-Surgeons: P. L. Crosbie to the *Vivid*, additional, for disposal; W. H. Pope to the *Sapphire*, additional, and on recommissioning; G. M. Eastment to the *Vanguard*, on commissioning, and R. M. Richards to the *Vivid*, additional, for disposal; and H. P. Turnbull to the *Hannibal*, and on recommissioning. Surgeons: T. F. O'Keeffe to the *Victory*, additional, for the *Swift*, and to the *Blenheim*, additional, for the *Swift*, on commissioning; T. W. Jeffery to the *Victory*, for R.N. Barracks; and A. Davidson to the *Bulwark*, additional, on transfer of flag.

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be Lieutenants (on probation) (dated Jan. 28th, 1910):—John Gilmour, Wilfrid Warwick Treves, John Thomas Simson, Campbell Robb, and Eric Thomas Gaunt.

Lieutenant (on probation) John T. Simson is seconded under the provisions of Article 300, Royal Warrant for Pay and Promotion, 1909 (dated Jan. 28th, 1910).

Lieutenant Thomas T. H. Robinson, to be Captain (dated Oct. 4th, 1909).

Lieutenant-Colonel L. W. Swabey officiates as Principal Medical Officer, Aden Brigade, during the absence, on leave, of Colonel W. A. Quayle. Lieutenant-Colonel F. S. Heuston, C.M.G., in charge of the Military Hospital at Edinburgh, has been granted leave from Feb. 14th to March 31st, with permission to travel in France. Major H. W. K. Read, Captain J. D. Richmond, Captain R. B. Hole, Captain H. Harding, and Captain M. F. Grant have arrived home from India. Lieutenant-Colonel R. D. Hodson, R.P., has been appointed to the medical charge of troops at Trowbridge. Major D. J. Collins from Wynberg, South Africa, has been appointed specialist in ophthalmology at Dublin. Major R. J. Copeland, from Meerut, has been appointed to the command of the station hospital at Darjeeling. Major H. G. Martin, from Agra, has been appointed to the command of the station hospital at Lebong. Captain J. S. Dunn, from Agra, has been granted eight months' leave. Major W. C. Poole, Major H. W. Grattan, Captain C. J. O'Gorman, D.S.O., Captain F. J. Palmer, and Captain L. M. Purser have embarked for India.

INDIAN MEDICAL SERVICE.

Surgeon-General C. P. Lukis, Director-General, Indian Medical Service, has been nominated an official member of the Legislative Council of H.E. the Governor-General of India. Colonel R. W. S. Lyons has been appointed principal medical officer, Kohat Brigade. Approval has been granted to the retirement of Lieutenant-Colonel J. Anderson, Bengal, from April 1st next. Major E. S. Peck has been appointed civil surgeon, Jullundur, on return from leave. Major H. Smith, from Jullundur, is posted to Amritsar. Major G. T. Birdwood, on the expiration of his appointment as principal of the Medical College at Agra, has been placed on special duty in the Central Provinces to inspect the Dufferin hospitals. Captain W. Tarr has been posted to the Jubbulpore District for duty. Captain H. W. Illius, civil surgeon, of Bahraich, has been appointed special plague officer to the Cawnpore and Unao Districts. Lieutenant A. de C. C. Charles has been appointed a specialist in advanced operative surgery to the Third (Lahore) Division, and Lieutenant S. J. Bhathena a specialist in midwifery and diseases of women and children to the Sixth (Poona) Division.

RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: The undermentioned to be Lieutenants (on probation):—Stephen Gordon (dated Jan. 13th, 1910); Eben Stuart Burt Hamilton (dated Jan. 24th, 1910); and Leopold Thomas Poole (dated Jan. 25th, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant Alexander B. Sloan to be Captain (dated Oct. 28th, 1909); Lieutenant Frederic W. Longhurst to be Captain (dated Jan. 16th, 1910).

For attachment to Units other than Medical Units.—William John Gray (late Lieutenant, Queen's Rifle Volunteer Brigade, The Royal Scots (Lothian Regiment), to be Lieutenant (dated Jan. 1st, 1910).

DEATHS IN THE SERVICES.

Deputy Surgeon-General Alfred Eteson, C.B., I.M.S. (retired), on Feb. 15th, in his seventy-eighth year. He entered the Bengal Medical Service in 1854, was promoted to surgeon in 1866, surgeon-major in 1873, brigade-surgeon in 1879, and deputy surgeon-general in 1883. He served during the Indian Mutiny of 1857–58, and took part in the relief of Arrah, the capture of Jugdespore, and the actions of Amoreh and Khiree (mentioned in despatches and medal). He also took part in the Afghan war of 1879 (medal) and in the Akba expedition of 1883–84.

THE BRITISH RED CROSS SOCIETY.

On Feb. 18th the Lady Mayoress presided at the Mansion House over a meeting of ladies with the object of forming a branch of the British Red Cross Society in the City of London. Mr. Frank Hastings, secretary of the British Red Cross Society, explained the work of the society, remarking that 100 county branches and 295 sub-branches had been formed since 1905. At the close of the meeting it was decided to take steps, through the aldermen and leading inhabitants of the 26 City wards, to form a branch of the society in the City of London and to promote its objects in every possible direction. Later on Sir Frederick Treves will deliver an address to members of the City branch at the Mansion House.

THE UNIVERSITY OF LONDON OFFICERS TRAINING CORPS.

The first annual report of the Military Education Committee to the Senate of the University of London for the year 1909 shows that the strength of the corps at the end of the year, exclusive of the permanent staff, was 24 officers, and 783 cadets. The number of medical cadets supplied by St. Bartholomew's Hospital was 49, by Charing Cross Hospital 2, by Guy's Hospital 67, by King's College Hospital 12, by London Hospital 7, by Middlesex Hospital 64, by St. Thomas's Hospital 25, and by University College Hospital 52, making a total, including 2 medical cadets not attached to any college, of 280. It is pointed out that in the case of medical units it has been necessary to attach cadets to sections with headquarters at other hospitals than their own, students of London, Charing Cross, and King's College Hospitals being posted to the headquarters at St. Bartholomew's Hospital, students of St. Thomas's Hospital to the headquarters at Guy's Hospital, and students of the Middlesex Hospital to the headquarters at University College Hospital. The first general parade of the University of London contingent of the Officers Training Corps was held on May 12th, 1909, at South Kensington in connexion with presentation day of the University, when the Vice-Chancellor, Sir William Collins, M.P., and Sir Henry Mackinnon, K.C.B., C.V.O., Director-General of the Territorial Force, addressed the contingent. The first annual training was held at West Down North, Salisbury Plain, from July 30th to August 13th, 1909, and the first annual inspection was held in the camp on August 11th, when Major-General the Hon. Sir F. W. Stopford, K.C.M.G., K.C.V.O., reported that the discipline was excellent and that all ranks displayed great keenness. We have already referred to the importance of the work of the Officers Training Corps, and especially to the medical units, in the Students' Number of THE LANCET of August 28th, 1909, p. 592, and we again urge students from the outset of their medical studies to begin to master the most useful methods by which they can place their expert knowledge at the disposal of their country in time of need.

THE ARMY NURSING SERVICE.

The Secretary of the War Office announces that Miss E. H. Becher, R.R.C., Principal Matron, Queen Alexandra's Imperial Military Nursing Service, has been selected to succeed Miss C. H. Keer, R.R.C., as Matron-in-Chief at the War Office when the latter vacates that appointment on April 5th next.

THE MARY KINGSLEY MEDAL.

Sir Alfred Keogh, K.C.B., is one of the recipients of the Mary Kingsley medal of the Liverpool School of Tropical Medicine.

Correspondence.

"Audi alteram partem."

REFORM AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—All well-wishers of the Royal College of Surgeons of England must have viewed with regret the estrangement which has existed for so many years between the Council and many of the Members of the College on the question of the direct representation of the Members on the Council. I believe I am only expressing the opinion of many other Fellows when I say that a method of representation which would give the Members a voice in the Council is desirable in itself, and that if due care were taken in devising a suitable method of representation nothing but good could follow such an innovation.

It has often been argued, and not entirely without reason, that as some Fellows of the College are in general practice therefore general practitioners are not absolutely without a voice in the selection of the members of Council, and it is true that on one or two occasions a Fellow of the College in general practice has almost succeeded in being elected a member of Council. Yet little weight can really be placed on this argument. The Members as Members desire representation. The Society of Members, which strongly advocates representation, may be taken as representing the Members although it includes only a small proportion of the Members of the College. As the result of inquiries I have made among Members of the College who do not belong to that society I am convinced that the desire for representation is real and widespread, and if direct representation on the Council could be given to the Members without injury to the true interests of the College I feel sure that a very large proportion of the Fellows would concur in such a change being made. It must be borne in mind that the functions of the College are two-fold. In the first place, the College is by far the most important examining body in surgery in the British Isles, and by the high character of its examinations its influence on medical education is great and far-reaching. This duty of examining, and through its examinations guiding the training of the medical student, is the most important duty of the College of Surgeons, but it is impossible to deny that the College has yet another function and that is the maintenance of the rights of its Fellows and Members. By the very terms of its diplomas it assures its Fellows and Members that they will be upheld in the maintenance of their rights.

No one who is acquainted with medical education and examination in London will doubt for a moment that the College has nobly fulfilled its first duty. The examinations are a pattern to all examining bodies; its library is the most valuable medical library on this side the Atlantic, and its museum of human and comparative anatomy and pathology is unsurpassed by any other in the world. Can we, however, speak with the same certainty of its fulfilment of its other function? Of one thing I am certain, the Council has always endeavoured to fulfil to the utmost of its ability what it considered to be its duty with regard to its Fellows and Members.

The only point about which there can be any dispute is as to the duties which the College has with regard to its Fellows and Members. There is, I acknowledge, room for two opinions, but the Members are of opinion that the position of general practitioners and their rights are not sufficiently recognised by the Council, not because the Council disregards them, but because the Council is unaware of them. The Members claim that they should be represented on the Council, for they hold that by no other method can their difficulties, their wishes, their hopes, and their reasons be adequately brought before the Council. As I have said already, I feel sure that many of the Fellows are willing and even anxious to grant the request of the Members, provided that the chief function of the College does not suffer harm. I feel sure, also, that these feelings are shared by many members of the Council itself, and I hope that before long some method of representation may be devised. For myself, I think that if the Members were allowed to elect three members of the Council they would be satisfied with this amount of representation, and they would feel no longer, as many of them do feel at present, that however well-intentioned the Council may be, it does not, and cannot, satisfactorily represent them.

Not many years ago the Association of Fellows did good work in advocating measures of reform in the College. Would it not be possible to revive the Association of Fellows so that the Fellows of the College might have a channel for expressing their opinions on this important matter?

I am, Sir, yours faithfully,

Harley-street, W. WILLMOTT EVANS.

SPONTANEOUS RUPTURE OF OVARIAN CYSTS.

To the Editor of THE LANCET.

SIR,—The interesting case recorded in your issue of Feb. 12th by Dr. Robert Jones and Mr. McAdam Eccles of a case of spontaneous rupture of an ovarian cyst recalls to my mind a case that I was called to see some years ago.

When seen on April 30th, 1893, the patient, aged 32 years, was in labour with her fourth child, labour having commenced 18 hours previously. There was a slight contraction of the pelvis necessitating the application of forceps. There was nothing abnormal to be noticed on vaginal examination except the slightly contracted pelvis. I applied the forceps, Mr. R. B. Knowles giving the anæsthetic. As soon as I commenced traction there was a large bulging of the posterior vaginal wall, with a fluctuating swelling which bulged through the vulval orifice. Thinking it was an ovarian cyst, I removed the forceps to get a trocar to puncture the cyst. After getting the trocar and boiling it I returned to the patient's side and found that the swelling had completely disappeared. I asked Mr. Knowles if he had noticed any change in the patient's condition, to which he replied in the negative. I then reapplied the forceps and delivered a full-term, healthy female child, the placenta being expelled a few minutes after. I then examined the patient bimanually but could feel no swelling whatever and nothing abnormal. I then explored the uterine cavity with my hand but could feel nothing abnormal; no tumour or flaccid cyst to be felt. On rectal examination there was nothing to be felt. Waiting till the patient had recovered from the anæsthetic, I again examined her, but could find nothing in the abdomen, no swelling, no dulness, &c., the patient expressing herself as feeling "quite right." There was not the slightest shock and no tenderness on pressure.

Being convinced that it was a case of ruptured ovarian cyst, I warned the husband that one thought she had a ruptured ovarian cyst, due to pressure from the child's head, and although there was no shock or pain, yet in a few hours there might be severe symptoms that might necessitate an operation. On seeing the patient early the next morning, much to my joy, I found she had had some sleep during the night, and had felt no pain or discomfort, beyond a few slight after-pains. She followed a normal course, and would persist in getting up on the fourteenth day. From this date, May 14th, I periodically examined the patient every two or three months, but could find nothing. The following is the entry in my note-book: "May 10th, 1894. Cyst found, right side, size of Tangerine orange; she does not complain of any pain or discomfort; catamenia regular." After this date I examined her every two to three weeks, the cyst gradually filling and getting larger and tenser. On

Nov. 14th, 1894, I operated and removed the cyst entire, it being of about the size of one's two fists. She made an uninterrupted recovery and left the home on Dec. 14th, a month after the operation.

The interest in the case lies in the fact of the cyst rupturing, without the slightest symptom, the quick recovery of the patient, the gradual reappearance of the cyst, its gradual enlargement, and on its removal the plainly marked scar on its anterior surface running diagonally across from left to right. No doubt the patient being anæsthetised when the cyst ruptured prevented shock, but on her recovering from the anæsthetic there was not the slightest sign of anything wrong, no peritoneal irritation, &c., and she nursed the child for six months. She is still alive and well. I am, Sir, yours faithfully,

Queen's gate, S.W., Feb. 14th, 1910. SIDNEY HARVEY.

THE POOR-LAW MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—I should like through the medium of THE LANCET to draw attention to a few crying grievances of the Poor-law infirmary medical officers in London, with at the same time suggestions for their redress. Under present conditions the assistant medical officer is a servant of the infirmary committee of the local guardians, who may or may not get on well with a professional man, but who have naturally, in most instances, very little idea of the actual scope of his work. There is no security of tenure of office, there is understaffing such as would not be tolerated in any other medical service, and the pay is inadequate. The work is exacting if it is to be done properly, the infirmaries being like large general hospitals without their special departments.

There is one safeguard provided, and that is appeal to the Local Government Board, which is an extremely busy department with no time to listen to complaints such as this coming from an individual. The guardians are at present having things their own way and behaving in the most approved demagogic manner. They are kicking efficient men out of the service; they are browbeating others; they are taking to appointing their assistant medical officers for a limited number of years (three is a favourite number). The result will be that when superintendentships in the service become vacant they will fall to the highly trained officers of the fever hospital service and not to the half-trained Poor-law medical officers. This Juggernaut career of the guardians will continue just so long as the medical officers will put up with it.

As we gaze with envy at our more fortunate brethren in the service of the Metropolitan Asylums Board the thought arises that the remedy lies in the organisation of such another board for the control of the Poor-law infirmaries of London. Our most immediate desire is to be delivered out of the hands of the guardians, and this can be done only by a concerted effort on our part. When this was accomplished there could be established a proper infirmary medical service, with security of tenure, promotion, adequate pay and staffing, and a homogeneity that would make for improved work clinically and in research instead of the present guardian-ridden heterogeneous mass of atoms that does not even produce statistics. In other words, a service could be formed to which a man could devote his life, working unhampered by petty spite and wire-pulling.

I am, Sir, yours faithfully,
ALAN RANDLE, M.D. Lond.

St. Marylebone Infirmary, Notting Hill, W., Feb. 21st, 1910.

THE AXIAL NOTATION OF CYLINDRICAL LENSES.

To the Editor of THE LANCET.

SIR,—Mr. Percy Dunn, in the description of his ingenious application of the compass points to the prescription of cylindrical lenses, finds it difficult to understand why the horizontal base-line has been selected as the meridian of departure in the enumeration of angular values. I believe that it was selected by the Optical Standards Committee of the Optical Society as being in accordance with the practice obtaining in every department of applied geometry or physical measurement involving the use of the protractor. The old scale is that of "nasal zeros." There is a horizontal base-line for each eye, but the degree enumeration proceeds for the right eye down and to the right, while in the left eye it is down and to the left. Hence the need of qualifying expressions, such as "down and out," &c.

Mr. Dunn has improved on that because his chart is applicable to either eye, but it is not so good as the Optical Society's since it has a duplicate set of numerals, necessitating qualification. He has, for example, two angles of 30°, and the required one has to be specified N.E. or N.W. The Optical Society's notation reads down and to the left for both eyes. In other words, one has only to apply the present left eye scale of the old style to both eyes to have the new. In this, a meridian of 30° is that and that alone. It needs no specification of eye, direction, or compass bearing. In case-recording that is important, and my view that it is the simplest and best is based on some years of practical use as well as on theoretical considerations.

I am, Sir, yours faithfully,
WILLIAM ETTLES, M.D. Aberd., F.R.C.S. Edin.

Wimpole-street, W., Feb. 19th, 1910.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—I am much obliged to Dr. W. Gordon for his complimentary allusions to myself, and for the kind manner in which he tries to explain away the significance of the facts I brought before the Hunterian Society in a lecture which was published in your issue of Feb. 12th. They were very simple. I dealt with only one special class of patients, those suffering from cancer of the stomach. That 60 per cent. of these gave a history such as is ordinarily accepted as diagnostic of pre-existing ulcer of the stomach is a fact. Other observers have found the same, and our conclusions are being confirmed every day by the results of the study of the pathology of the living. Whether a collective investigation of all sorts of gastric cases, unselected, with or without indications for operation, by any number of observers, as recommended by Dr. Gordon, would give a valuable result is a matter for opinion, but it can have no bearing upon this.

Dr. Gordon's illustration of the ophthalmologist is singularly inapposite. There might have been some point in it if I had written a treatise on gastric ulcer, and asserted that cancer was an almost invariable accompaniment of it; but then I did not do this. What I maintain is that cancer in the stomach originates almost always on the site of some unhealed ulcer or irritated scar, as it notoriously does in all other parts of the body; and that now that this site can be seen with a gastroscope there is but one thing to do, and that is remove the point of origin in time. The doctrine is perfectly logical and is in accordance with the facts; but I suppose it will not meet with general acceptance until the lessons of post-mortem pathology are given their true value, and those learnt from timely operation upon the living are appreciated as they deserve to be.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 19th, 1910. C. MANSELL MOULLIN.

To the Editor of THE LANCET.

SIR,—Will you allow me to comment on two matters arising out of my paper, read before the Surgical Section of the Royal Society of Medicine and reported in your current issue? In criticising my paper Mr. H. J. Paterson misunderstood my statement about the cause of death I showed that of 127 cases in which the cause of death after gastrectomy had been reported 97 were due to some form of peritonitis, chiefly from leakage. These figures are collected from a number of different surgeons who practise "the improved technique of the present day." It is not a question of what any self-respecting surgeon would dream of doing, but merely an actual narration of what modern surgeons have done.

Dr. W. Gordon writes strongly differing from the views expressed by Mr. Moullin and Mr. Moynihan, who think that a large proportion of cases of cancer of the stomach are preceded by ulcer. A recent very careful paper in the December number of the *American Journal of Medical Sciences* by Wilson and MacCarty gives very definite facts supporting this view. All the specimens of stomach disease removed by the brothers Mayo for some years past were subjected to thorough pathological investigation. Of these 153 were undoubted carcinoma, and out of this number 109 (71 per cent.) showed definite evidence of previous ulcer. There were in addition 5 cases of ulcer presenting early doubtful malignancy and 11 cases of cancer with doubtful evidence of preceding ulcer. These statements are made very convincing by the large number of illustrations which accompany them, and they fully bear out the modern surgical view that cancer of the stomach is the result of chronic ulceration in the great majority of cases.—I am, Sir, yours faithfully,

ERNEST W. HEY GROVES.

University of Bristol, Feb. 21st, 1910.

THE CONTROL OF INFECTIOUS DISEASES IN ISOLATION HOSPITALS.

To the Editor of THE LANCET.

SIR,—While thanking you for your very fair and impartial criticism of my paper on the control of scarlet fever, may I beg space to mention what I did not perhaps make quite clear—namely, that the method described grew simply out of an attempt to make the best of the conditions which not infrequently arise in growing districts when the population increases more rapidly than the hospital accommodation?

I am, Sir, yours faithfully,

Mortlake, S.W., Feb. 18th, 1910. F. G. CROOKSHANK.

THE PSYCHOLOGY OF POLITICS.

To the Editor of THE LANCET.

SIR,—As the science of medicine expands it comes to embrace the psychological aspect of human events in their normal and abnormal varieties. The mental sides of thought and action become, as Münsterberg shows, a recognition of the "causal" and "purposive" ways of looking on the standpoint from which man is to be considered. The balance of opinion is determined partly by arguments applied to the one side or the other, but there are basic mental trends or temperaments which so affect an adjustment of the scales that it becomes a medical duty to examine the conditions of the psychological causes at work without the least bias on one side or the other. And that this is a medical question arises from the fact that sanitation, eugenics, overcrowding, feeding problems, &c., have an influence on the temperament, whilst the consideration of these influences must help us to arrive at a proper estimate of things as they are, preparatory to undertaking measures which may alter the essential nature of mental states often too hastily criticised because they are not understood.

What makes a man a Tory or a Liberal? Many will think that it is merely a question of environment. They say that a man is Tory because Toryism is his family creed; there is a causal connexion between the two, just as another man is Liberal because Liberalism is the tradition of his stock. But there is more in it than explanation by heredity. Many a man "rats" in turn from one party to the other, and this he may do from conviction that the old lines are too narrow and cramped or that they are too far advanced and destructive. These are the fluctuating members who cause much trouble and heart-burning in the constituencies. Young men are notably inclined to Liberalism; it suits their self-esteem, their pulsating egotism, their urging to be free from the slow methods of old-fogeyism; it seems to offer a life more full of possibilities with greater hope of realisation; and at this period of growth and impulsive enthusiasm it appears to offer the attractions which, though they dimly discern, they eagerly anticipate. What makes Liberalism so attractive to the young is that it connotes discontent with the existing order of things, finding its best exposition in the topsy-turvydom so agreeable to the expectant and dissatisfied mind, a condition often seen in the younger sons of high families, whom the accident of birth has placed at a disadvantage. It matters not that the tenets of the two great sections are changed in "content"; as long as they are opposed he is on the side which by its undefined promises coincides with the limitless horizon of his own aspirations. Beyond and beside all this there is yet some trend which—supposing that the opposing factions are clear and breed true to their tenets and propositions—influences a man to ally himself to one side or the other, and that trend, we venture to think, works through what is known as Temperament, the source of many of the most striking mental differences between individuals and races. Temperament is a complex result determined partly by the influence of the bodily organs upon the mental process and partly by general functional peculiarities of the nervous system, and is not only born in the man but is little alterable by any effort he may make, differing in this respect from Character, which is largely made by his own efforts.

How is it that Scotland and Wales are Liberal, and probably always will be? The Scotch temperament is phlegmatic; the people pride themselves on being "dour," they call themselves "independent," and think that they are as good as anybody. Even at the time when there were kings in Scotland this non-truckle element was prominent and seething. Now the Tory spirit is essentially that of the old aristocratic families—a weight-carrying influence, powerful in the counties, where it has lasted for ages, and it carries with it a large number of people who like to assimilate themselves as much as they can to the upper classes. This is truly a causal relationship, whilst the Liberal policy has more of the purposive character—i.e., the adaptation of means to an end, whether involving consciousness or not. A man who is in a state of action—i.e., of doing something—must always have an end in view, and to select such an end is "purposive." The Conservative mind is satisfied with things as they are; it is what it is because certain things (mostly of an agreeable tone) have combined to make it so; it is therefore causal in essence and is content to dwell in the present, resenting the pushing force of others who would drive it to a state of things perhaps unpleasant to itself and always obscure and doubtful. Liberalism, on the other hand, is of the pushful trend, it traverses the regions of pain rather than of pleasure, and as the progress of purposive action is chiefly connected with the effects of pain it must necessarily appeal most strongly to those whose life is carried on where the circumstances are to a large extent painful in their nature, ambitious perhaps, but downtrodden by old and vested interests; and hence the lower classes and those who have grievances, those whose spirit is aroused against their condition of stagnation and their fancied oppression by the classes which seem to them to be no better than they themselves are, come perforce to be Liberal, they keep before themselves an end to be attained and their conduct is strictly purposive; moreover, it has been so for years, it has become a tradition, and is handed down to their children. The Welsh Liberalism may be traced to the obstinacy engendered by Nonconformist principles against the influence exerted by the Church, which was always associated with the Tory party, aided by the trend of the Celtic temperament. The Church has been connected with the State for a long time; it is supposed to have enjoyed special patronage and facilities, and this combination has had its direct influence upon minds of a different purpose, prompting an opposition to the political party with which the Church has been prominently associated. Now and then a new principle is started by one side or the other of so striking a kind as to counterbalance the force of temperament, and if this is done through the agency of a great leader it may spread through constituencies with all the force of a hypnotic suggestion; but, even so, if the "suggestion" is brought forward by the party from which change and progress are not as a rule expected the antagonism to its reception may cause its failure to succeed owing to the stolid temperaments with which it has to contend, and in any case its acceptance must be a slow and a begrudged one.

The change in the representation of constituencies from time to time is to be explained partly by the shifting of population. People drift into towns from the country, carrying with them their temperaments and ideas which they spread among their fresh surroundings; on the other hand, the population of towns tends to live in the outskirts and in the country, so that both town and county representations change and fluctuate in the most surprising way—the resurrection of new industries bringing along a population of the purposive order tends to Liberalism. Indeed, considering the larger *pro ratâ* birth-rate among the lower as compared with the middle and upper classes, the progress of Liberalism seems assured, because not only is the temperamental basis there, but it must spread by association and environment. It is difficult to forecast the effect on parties if women ever come to exercise the franchise. The temperaments of women have been for ages so suppressed in action that it is not possible to say more than they must incline to the purposive or Liberal side because of the element of pain which has so long accompanied them. A limited franchise (that of wealth) would certainly lead the members who enjoyed it to Conservatism, but a general franchise would bring them under the influence of their environment, leading to a Liberal trend. There has scarcely yet been time for a due estimate of the force of the female temperament; but with the development of the new era in which women are playing so conspicuous a part the probability is that when consolidated it will augment the Liberal views. Perhaps even when their temperaments do become capable of classification they will be subordinated to the support of that side which offers them the greatest advantages, and this, after all, is a principle which has great weight with the strongest convictions.

There is one form of Temperament which is especially conspicuous in the domain of Irish politics, and that is the nervous form. The chief characteristic of this form is impulsiveness, the tendency to uncertainty, proneness to swing to one side or the other according to predominating influences in the environment. Here the action is distinctly purposive in kind, regarding especially the end to be achieved, and therefore the results must be irregular, never sure nor constant, but essentially unstable and tending to subdivision into factions, swayed by such emotional causes as religion and ideas of freedom. It is always difficult to gauge the direction which this form of temperament will take because it is inherently mercurial, but the trend of it must be towards Liberalism because it has in itself an element of pain; it wants to be free, therefore it prefers to bind itself to no side but to give its balance to that party which promises to be most serviceable for the purposes of the moment.

I am, Sir, yours faithfully,

Feb. 20th, 1910. M.D., F.R.C.P.

THE PUBLIC HEALTH AND THE PARIS FLOODS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Paris, Feb. 20th.

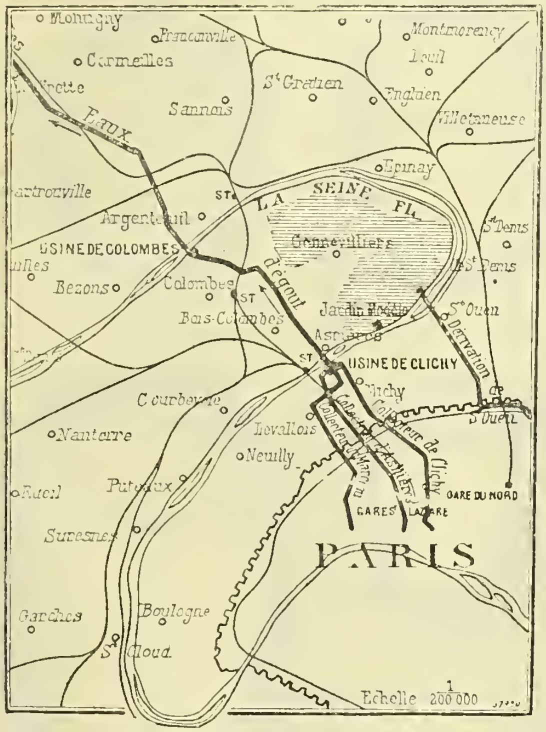
AS many towns are liable to suffer from flood, and most towns either actually possess or propose to establish a general system of sewers, the effect of sewers on floods or of floods on sewers becomes a matter of very great interest. In this respect we have in Paris a unique object-lesson on a vast scale; and taught by present experience, Paris at any rate will see that such disasters do not occur again. And now is the moment to investigate the many problems involved.

At first there was a general impression that the presence of sewers increased the danger caused by the floods in Paris. There was, in particular, the main collector on the south side of Paris consisting partly of a covered stream called the Bièvre, which was said to have burst and to have flooded the underground railway. This story was related to me by one of the principal officials of the city, and is, I think, widely believed. Following upon this story it became common belief that whenever the pavement gave way and a hole was formed in the street, a sewer had burst. When sewage was found in a cellar again people said the sewer had yielded to the pressure of the flood. To engineers this has always seemed unlikely, and when the partial subsidence of the waters made it possible to see more clearly what had happened it was discovered that the only positive evidence of a burst sewer was in the rue Richepanse, a small street close to the Madeleine. The story of the flooding of the underground railway by the collapse of the Bièvre main sewer, to which allusion has already been made in THE LANCET, arose in a manner which aptly illustrates how stories travel and grow in moments of public excitement and emergency. To build the underground railway station close by the Chamber of Deputies it was necessary to dig down to a minor sewer in the rue de l'Université close to the point where it fell into the Bièvre main collector. Therefore a branch sewer was constructed diverting the rue de l'Université sewer before it reached the site of the future station, and thus it had a new outfall into the Bièvre collector a little higher up. When this was done there was hardly any water in the rue de l'Université sewer, and therefore there was neglect to prevent a possible and unanticipated overflow. On Jan. 21st a storm occurred which caused an exceptional amount of water to rush down the Bièvre sewer and up the new connexion with the rue de l'Université sewer. Here, as a protecting wall had not been built, the water overflowed and invaded the clearings for the railway station. Thus, though the Bièvre main collector did not burst, some of the sewage it contained did overflow into the underground railway. The overflow of the water was checked at once; on the next day, Jan. 22nd, work at the underground station was resumed as usual. At that date no one foresaw the great disaster that was to happen, though the Seine was already 6·30 metres deep at the Pont Royal. It was a week later, Jan. 28th, that the Seine attained its maximum.

During the course of that fatal week the river rose up to and then above the ventilating apertures pierced through the embankment to give air to the underground railway that passes by the river side and connects the new Orleans Station on the Quai d'Orsay with the old Orleans station beyond the Austerlitz bridge. Then it was that the underground railway system was invaded, and the water, some of it from the south side of Paris, passed by the railway tube under the Seine and came bubbling up on the Place du Havre in front of the St. Lazare Station. In confirmation of this version I may say that I have now seen all the plans and technical drawings of the station works and the junction of the rue de l'Université and Bièvre sewers. The matter is obviously of the utmost importance, as it is most essential to know how far sewers are capable of resisting the extraordinary pressure which a great flood may produce. There is only one sewer known to have burst in Paris, and it has not yet been possible to descend into the gaping and flooded aperture of the rue Richepanse to ascertain how and why this accident happened.

The power of resistance of the Paris sewers may have its explanation in their history and construction. When the Universal Exhibition was held in Paris in 1878 the Second International Congress of Hygiene met in the great hall of the Trocadero, and it may be remembered by your readers that a visit to the sewers was organised. In the main sewers there were barges with red velvet cushions so that the lady members of the Congress wearing elegant dresses might have comfortable seats. Scavengers in fancy uniforms pushed the barges along, and the whole scene was brilliantly illuminated by hundreds of gas lights—to-day replaced by electric lights. When Professor de Chaumont, who accompanied the British contingent, travelled through this underground Venice he exclaimed, "This is magnificent, but it is not hygiene." These words were not forgotten and have often been quoted. In a sense the criticism is justified, for the main sewers, especially those running parallel with the river, are so large and have so slight a fall that they are not self-cleansing. Their flow is estimated at only 0·25 to 0·90 metre per second, whereas to carry sand away a velocity of more than 1 metre per second is needed. Therefore a numerous detachment of scavengers, armed with ingenious implements and machinery, is employed to push the mud and sandy deposits along, so that manual labour has to supplement the insufficiency of water power in the drainage of Paris. But, on the other hand, if these sewers are too large for the ordinary volume of sewage and rain-water which they receive, their exaggerated size has rendered them all the more useful in relieving Paris from the terrible water pressure which the floods occasioned. But what has contributed to render the state of affairs worse on the south side of Paris is the fact that the main sewer passes from the southern to the northern side by a syphon under the Seine, and, if the sewers are large, the syphon under the Seine is not so large. The water from the sewers on the south of the river could not flow away more rapidly than the dimensions of the syphon would admit. Consequently a backwash occurred and was more destructive on the south side. When the sewer water was seen coming up the sewer mouths into the streets or up the soil pipes into the houses some persons imagined that the water of the river had entered the sewers through the various storm overflow openings contrived to relieve over-pressure in the sewers. Had this occurred the sewers would not have helped to lessen the floods, they would have become mere branches of the river. Fortunately, this contingency at least had been foreseen. Every storm overflow is provided with a swinging or suspended valve which, while it allows of the discharge of the drainage, does not permit the water of the river to enter, and when the pressure is from the river towards the sewer then it serves to shut the valve all the more tightly. This was what occurred during the floods, the river closing the storm outfall, so that there was no relief for the sewers though filled to the very top. At the same time, if the sewers were filled they were filled, not with river water, but with the water they were draining away from the flooded districts, and thus they largely contributed to prevent the flood being far more disastrous than was actually the case. (Fig. 1.)

FIG. 1.



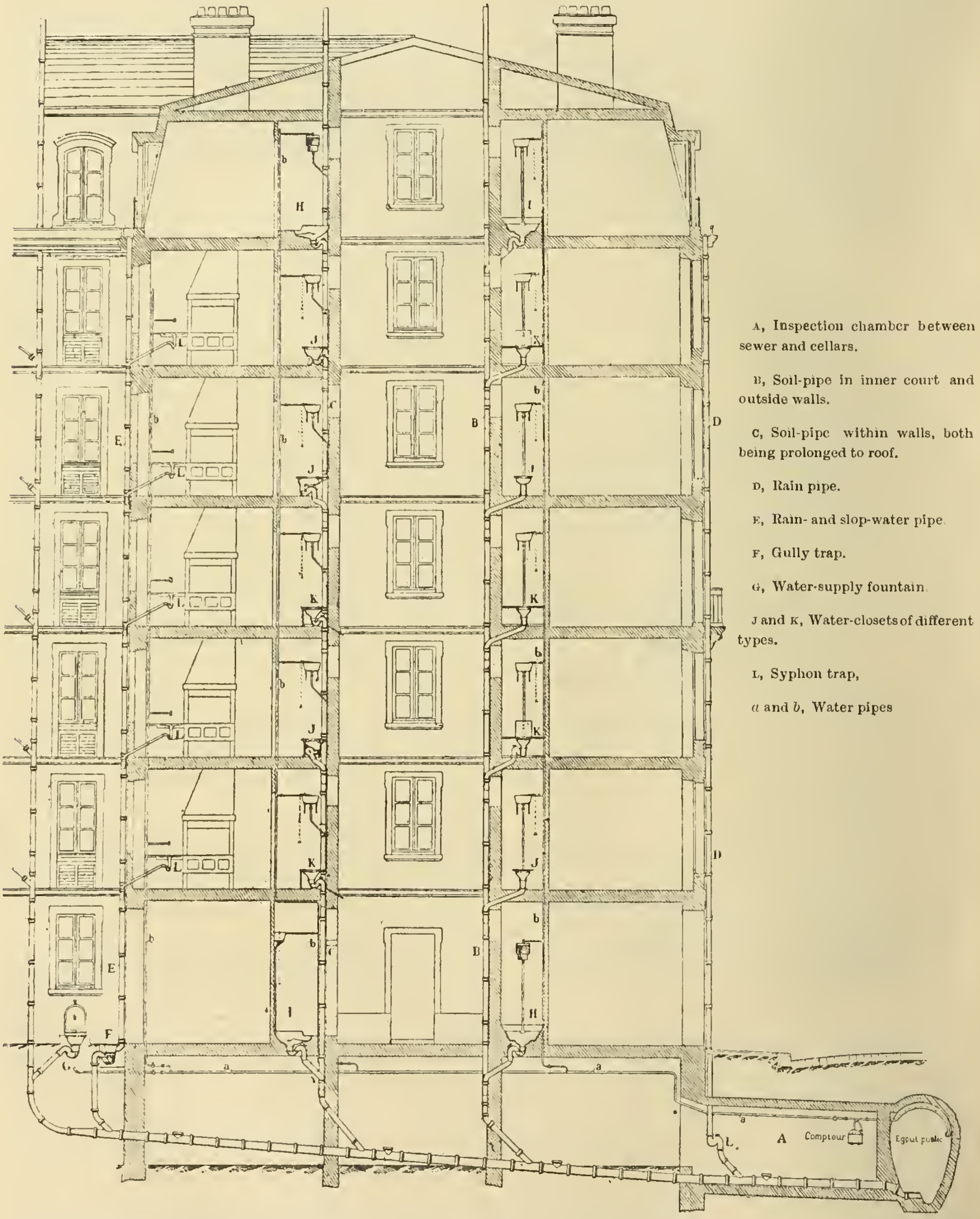
Map of Northern and Western Paris suburbs showing loops made by River Seine in leaving Paris and running through St. Cloud and Clichy. At the Clichy *usine* the three main collectors meet and lift the sewage. The sewage farms are in the shaded area, Gennevilliers, and also farther down stream at Achères and Méry. The Seine concerned in making the great loops fell to 30 metres above the sea at Clichy and Asnières, while it was 34 metres inside Paris.

All who are acquainted with the topography of Paris know how the Seine twists and curves as it approaches, cuts, and leaves Paris. As it passes through Paris it is imprisoned on both sides by high embankments, but once outside the walls this masonry ceases. Then the river can expand and lose in depth what it gains in width. What with this power of expansion and the natural fall in the bed of the river there was a great difference in the level of the Seine by the time it had twisted round Meudon and St. Cloud to travel again towards Paris and reach Asnières and Clichy. Thus on the Eastern side of Paris at the Pont d'Austerlitz the water reached the level of 34·84 metres above the level of the sea. In the centre of Paris at the Pont Royal by the Tuileries the water was at 34·02 metres above the sea. In the district on the south side of the river, the Quai d'Orsay and neighbouring thoroughfares, the level of the street is only from 31 to 32 metres above the level of the sea. The levels of the Rue du Bac, which was so badly inundated, vary from 32·83 to 32·85 metres above the sea. There are many parts of Paris on the northern side which are also much below the level of 34 metres which the Seine surpassed when passing through Paris. Fortunately, even when this maximum was reached the level of the water was never higher at Clichy than from 30 to 30·40 metres above the sea. This fact is the more important as it is at Clichy that the three great main sewers of the Paris system unite. Here there is a gigantic pumping station which lifts up the sewage to a sufficiently high level for it to flow on by gravitation to the sewage farms and irrigation fields of Gennevilliers, Achères, and Méry. These sewage farms, however, and especially at Gennevilliers, were themselves flooded; but, in any case, this system of disposing of the sewage could not be continued because the pumping station was also flooded and the engines stopped. Therefore, the sewers had to be allowed to flow direct into the river at Clichy.

When we consider the enormous dilution that has taken place there is no reason to entertain many fears in regard to either the sewer water or the river water. It is true that the river has received not only sewage but a considerable quantity of household refuse and garbage. This could not be taken to the dust heaps and dust-sorting depôts outside the walls because they were flooded. The hardest and safest materials, such as broken pots and pans, were taken just beyond the fortifications to non-flooded districts, but what we call in England the "soft core" was thrown into the river. This was done at first from the Pont Tolbiac which, being at the entrance of Paris, was a very bad place to chose. Afterwards this was thrown into the river from the Point du Jour bridge on the other side of the city, and just where the river passes through the fortifications and out of Paris. In regard to sewage, the average or normal amount conveyed by the Paris sewers is set down at 400,000 cubic metres per day. The actual daily production of urine and fæcal matter in Paris does not amount to more than about 3000 cubic metres. Thus the soil or crude sewage should be diluted by 133 times its volume while within the sewers, if it only consisted of the daily produce, but with the overflowing of cesspools and the breaking of soil pipes there would be at first in the sewers more than the normal amount of human excrementitious matter. On the other hand, the actual amount of water that flowed out of the sewers of Paris during the height of the floods varied from 30,000,000 to 40,000,000 cubic metres per day. This, then, is a dilution of the normal production of human dejections by from 10,000 to 13,333 times its volume of water. These sewers had their outfall into the river, and the flow of water in the Seine at the height of the flood is put down as 270,000,000 cubic metres in 24 hours. Adding to this the water that passed through the sewers we get a grand total of 300,000,000, which would dilute the 3000 cubic metres of urine and fæcal matter in a hundred thousand times its volume of water. So far as safety depends on the amount of dilution of dangerous matter and the rapidity of dispersal, then the waters of the Seine must be fairly pure at the present moment.

To return to the service rendered by the sewers, the question arises why all the parts of Paris that are below the level of 34 metres were not inundated. The neighbourhood of the Place du Havre, in front of the St. Lazare station, is at the level of 32 metres, and here for a while the water was above the street, but this was due, as has been said, to the extra supply that came up to this spot by the underground railway from the southern side of the river. But the flood should have extended from the river, not merely up the Avenue Montaigne and over a part of the Champs Elysées, but from the Rond Point of the Champs Elysées over to the Boulevard Haussmann, on by the St. Lazare station to the Trinity Church, and further on to Notre Dame de Lorette. All districts south of this half circle, including a good part of the grand Boulevards, the rue de Rivoli, the Tuileries, and the Louvre, should have been flooded with four, five, and even six feet depth of water in the street, inasmuch as all these districts remained a couple of metres lower than the height attained by the waters of the Seine. It would seem that this was, in a measure at least, prevented by the fact that the Seine at Clichy was at 30 metres, or two metres lower still, and therefore the sewers could by gravitation drain the flooded

FIG. 3.



A, Inspection chamber between sewer and cellars.

B, Soil-pipe in inner court and outside walls.

C, Soil-pipe within walls, both being prolonged to roof.

D, Rain pipe.

E, Rain- and slop-water pipe.

F, Gully trap.

G, Water-supply fountain.

J and K, Water-closets of different types.

L, Syphon trap,

a and *b*, Water pipes

Drainage scheme of typical Paris house. Out of 80,000 houses 45,000 are drained in this direct manner. Observe that A, the chamber between the cellars and the *égout public*, is separated from the sewer by the wall. It contains gas, water, and soil pipes. It was the horizontal soil-pipe in the cellars which failed to resist the pressure when the sewers were over-full.

districts. This they were able to do because of their huge proportions, and because the waters of the floods had no great difficulty in reaching the sewers. If the water was in the street then it could follow the course of the gutters and fall into the sewer by the ordinary sewer mouths. But before reaching the streets the cellars were inundated and there a considerable number of soil pipes burst. Though the sewers built of solid masonry resisted the pressure the soil pipes within the houses are but frail structures. To give the soil pipe a good fall as it passes from the back to the front of the house a portion of it is above ground and suspended to the wall of the cellar. It is, therefore, not strengthened by any surrounding earth and the joints are often somewhat carelessly cemented. Then, and even when the joints held good, it sometimes happened that the lids covering the inspection holes were not securely fastened down. Thus when the water from the overcharged sewers forced its way up these domestic drains many of them were unable to resist the pressure. Yet the fact that some of them gave way probably did more good than harm. The amount of soil that thus reached the cellars would be very small if the house drains were properly flushed. On the other hand, the fact that these soil pipes broke in the cellars—that is to say, at a level considerably below the streets—converted them into very useful drain pipes which helped the underground waters to flow into the sewers and thus right on to the outfall at Clichy.

FIG. 2A.

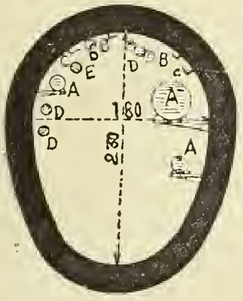


FIG. 2B.

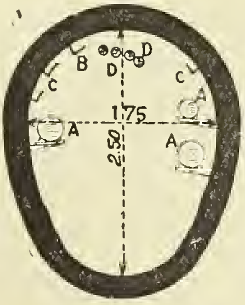


FIG. 2C.

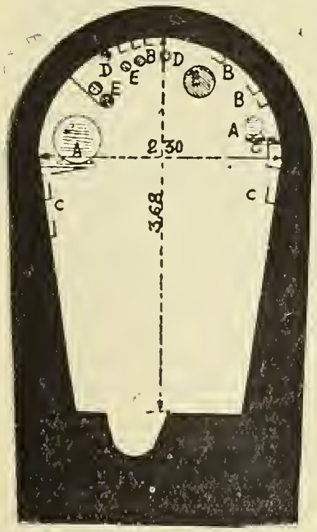
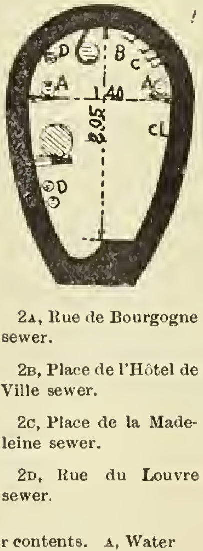


FIG. 2D.



2A, Rue de Bourgogne sewer.

2B, Place de l'Hôtel de Ville sewer.

2C, Place de la Madeleine sewer.

2D, Rue du Louvre sewer.

Types of special Paris sewers and their contents. A, Water mains. B, Telegraph wires. C, Telephone wires. D, Pneumatic postal tubes. E, Compressed-air tubes.

It is a peculiarity of the present situation that everything that was a vice in normal times becomes a virtue to-day. A sewer should be water-tight, and an underground passage or tunnel dry and free from damp, but now that the soil itself is water-logged a broken soil pipe is even welcomed as a means of draining off some of this terrible accumulation of water. Then, though the sewers have always been criticised as being too large, the only regret expressed to-day is that they were not larger still. Yet the great Clichy main collector has a culvert 2·90 metres deep and 4 metres wide, while on each side there is a pathway almost a metre wide. In normal times the culvert alone contains water. On each side of the pathways—they might almost be called quays—are suspended from the domed roof and sides a great number of pipes. The most important of these is the water main. Other pipes contain telephone wires and telegraph wires; then there is the pneumatic post pipe, and another pipe which supplies air under pressure used as a motive power in small workshops. This domed portion of the Clichy main collector is 6 metres wide and 3 metres high. The other main collectors, diagrams of which will be seen at Fig. 2, only differ slightly in shape and size from the Clichy main. The introduction of so many services in the sewers adds to the revenue of the town and prevents the digging up of the streets to get access to a wire or a pipe.

The system is very convenient so long as only the culvert of the sewer is full, but in the present case these sewers, in spite of their size, were flooded right up to their domed roofs, so full indeed that the pressure from within was equal to 10 metres. Consequently all the other services were compromised and the very greatest alarm was felt in regard to the water-supply. If the sewers burst, the water pipes within the sewers would be torn asunder. The water-supply would cease wherever the water pipe was broken, and if it continued elsewhere it would be mixed with the sewage from the sewer. Some of the electric services were interrupted, but this was not because the sewers burst but because the electric works were inundated and the machinery stopped. From the first, the engineers have insisted that so long as the water-supply came to the houses the sewers had withstood the pressure of the floods. The water-supply has never been interrupted, therefore there has been no admixture with it of the waters of the Paris floods. On Jan. 21st last, before the floods had attained the maximum height, the drinking-water supply was rather muddy. This was due to excessive rains on the gathering grounds, but the neighbouring populations were enjoying exceptionally good health. So also are the inhabitants of Paris; the death-rate and sick-rate are below the average. Throughout the whole of the inundated districts of Paris there are only 17 cases of typhoid fever, and they are carefully watched to prevent the dejections being thrown into the sewer or river without thorough disinfection. Thus there is no special reason to fear that an epidemic may be caused through the contamination of the water-supply. It seems a strange thing to say, but Paris must be congratulated on the fact that its water-supply has been well protected by its sewers. The sewers also, by draining the town, have saved some districts from the inundation, and such drainage was possible because of the great and extraordinary difference of some 4 metres in the level of the Seine inside Paris and just outside the city at Clichy, where the general sewer outfall is situated.

I append a sketch (Fig. 3) of the drainage scheme of a typical Paris house.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Health of the City.

THE death-rate during 1909 reached a lower figure than had ever been recorded before in the city. It was 15·5 per 1000, against 15·9 in 1908, 16·1 in 1907, and 16·8 in 1906. The average death-rate during the last five years was 16·1, as compared with 19 1 in the previous five years. This diminished mortality represents a saving of about 1650 lives per annum. The reduction which has been going on in the birth-rate during the last ten years continued in a marked degree during last year, the birth-rate being 26·7, or 1·7 per 1000 below the rate for 1908. The rate of infantile mortality was also lower than in any previous year. It was 135 per 1000 births, against an average of 170 in the preceding ten years. The lowest rate previously recorded was 145 in 1908. This lower rate was no doubt partly due to the favourable weather during the greater part of the summer, but much of the improvement must be attributed to the work of the health visitors amongst the infants born in the poorer parts of the city. The deaths from the principal zymotic diseases as compared with the average for the previous ten years were :—

	Deaths in 1909.		Average 1899–1908.
Small-pox	0	....	2
Measles...	527	....	207
Scarlet fever...	106	....	106
Diphtheria	89	....	108
Whooping-cough	152	....	243
Typhoid fever	22	....	79
Diarrhœa	244	....	622

The high mortality of measles was due to a severe epidemic in the early months of the year. There was an increase in the number of cases of scarlet fever, but no increase in the number of deaths. A pleasing feature of the records is the small number of both cases and deaths due to typhoid fever. Only 95 cases were notified against an average of 423, and 22 deaths against 79. There were 751 deaths from phthisis and 163 from other forms of tubercular disease, a decrease of 36 and 81 respectively below the decennial average.

Tuberculosis and the Milk-supply.

The scheme for securing a tubercle-free milk-supply is being actively proceeded with. Dairy farms are being induced voluntarily to adopt measures to eliminate gradually tuberculosis from dairy herds. The scheme is restricted in application to herds within ten miles of the city, the milk from which is supplied to Birmingham. In answer to a circular letter from Dr. John Robertson, the medical officer of health, 20 farmers applied to have their dairy herds tested. In 16 instances the request was complied with. In the four instances declined the refusal was due in one instance to the farm being outside the area, in two instances to the milk not being sold in the city, and in one instance to the sheds being unsuitable. In the last case the sheds are being improved. As a result tuberculosis has been eliminated from eight herds, which are now being maintained free, only non-tuberculous stock being purchased. The milk from these dairies is supplied mainly to public institutions. Five herds are in the course of being freed. In three instances, owing to the high percentage of tuberculous cows, the farmers have declined after the first test to proceed further for the present. Altogether 803 cows have been tested, of which 567 were found to be unaffected and 236 were rejected. The cost of the work has so far amounted to £67 16*s.* 5*d.*

Salterley Grange Sanatorium.

The first patients were admitted to the municipal sanatorium on Jan. 7th, 1909, and until the end of the year 76 patients were received. A larger number would have been taken if it had not been for a difficulty in the water-supply which is now remedied. The applicants for admission are examined by Dr. J D. Stanley, and in the year 256 patients were examined, of whom 177 were declined as unlikely to benefit sufficiently from treatment. 46 of these have died—a figure which clearly shows the need for examination. The 76 patients admitted comprised 40 males and 36 females, all but two being between the ages of 15 and 40 years. 48 patients were discharged after an average stay of 118 days for the males and 109 for the females. Four left soon after admission; of the remaining 44, 17 had the disease completely arrested, 18 were much improved, 5 were improved, and only 4 showed no improvement. On Jan. 13th last 35 of the discharged patients were examined by Dr. Stanley. The majority were in regular employment and maintaining their health, but a few had found it impossible to obtain work, and the lack of employment and sufficient nutrition had prejudiced their health. The question of the after-care of discharged patients formed the subject of a conference between the health committee, the board of guardians, the City Aid Society and Charity Organisation Society, and much assistance is being rendered.

The University.

The report of the Principal (Sir Oliver Lodge) states that the registered students last session numbered 984, of whom 565 had matriculated. The latter were distributed among the faculties as follows: science, 245; arts, 215; commerce, 30; and medicine, 75. The number of medical students shows an increase of 9 over the previous year, but a decrease as compared with 1904–05, when the number was 92. Until 1903 the medical faculty contained the largest number of matriculated students, but the steady growth of the arts faculty, and still more of the science faculty with its large technical departments, has made medicine take the third place. The financial statement for the year shows that the income amounted to £48,981 11*s.* 1*d.*, as compared with £47,330 2*s.* 3*d.* in the previous year. The bacteriological department contributed £1092 19*s.* 8*d.* towards this income. The expenditure amounted to £56,206 15*s.*, as compared with £52,264 2*s.* 10*d.* the previous year. An appeal for funds during the year resulted in promises amounting to £78,493. Included in this was a generous donation of £30,000 from Sir Charles Holcroft, whose contributions now amount to the munificent sum of £100,000. Mr. Charles MacMunn of Wolverhampton has recently presented to the University 17 Peruvian Indian mummy heads and skulls, together with two complete mummies of children in the original wrappings of coloured cloths. There are also an eating bowl and toy. These remains are of the Inca tribe and are supposed to be about 2000 years old.

Mine Rescue Station.

An exhibition of rescue apparatus with demonstrations of their use will be held in the University from Feb. 22nd to 26th inclusive. A subcommittee, under the direction of Professor Cadman, has been appointed to carry out tests under actual working conditions of all known forms of rescue apparatus. It has been decided to establish a principal rescue station at the University with branches scattered over the Midland colliery districts.

Moseley Convalescent Home for Children.

The number of children admitted last year was 976, an increase of 22 over the previous year. Of the 976 children 508 were admitted on the recommendation of subscribers, 155 were transferred from the Children's Hospital, and 313 from the General, Queen's, Orthopædic, and other hospitals, the district nursing societies, the dispensaries and churches of the city and district. The home has established itself, not only as a place to which delicate children can be sent, but also as a continuation hospital for children in the early stages of convalescence after serious and acute illnesses. The year's income amounted to £2140 and the expenditure to £2352, leaving a deficiency of £212, which is less than in previous years.

Health of Solihull.

Dr. C. E. Tangye in his annual report states that the birth-rate was 20·1 per 1000, which is 1·4 below the average for the previous ten years, and was equal to 1907, the lowest rate on record. The death rate, 13 1, was slightly lower than for the previous year, but was higher than the average for the ten years. The infantile death-rate was the fairly low one of 75 per 1000 births. There had been 14 deaths from zymotic disease, the rate being 0·81. 18 cases of tuberculosis in poor persons were reported, of which 13 were occupants of the workhouse. In the case where the patients continued to live at home advice was given on such points as the disposal of sputum, and fresh air. Where removal or death occurred it was proposed to disinfect the premises vacated.

Feb. 21st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Death from Anthrax in Liverpool.

THE city coroner held an inquest last week concerning the death of a dock-labourer residing in Liverpool. The evidence showed that the firm employing the deceased received large consignments of hides, skins, and wool for transhipment. It was known that anthrax was likely to be carried in these goods. Consequently gloves were supplied to all the men having anything to do with the goods, both on the quay and on the ship. A man was not allowed to work amongst this class of goods if he was found to have a scratch or open sore about him. On Jan. 27th and 28th the steamer *Devonian* was lying at the north side of No. 1 Huskisson Dock, loading cargo. On the 28th the deceased was working in one of the holds, stowing sheep and goat skins, buffalo hides, and wool. The hides and skins were all dry. He wore gloves and the witness did not notice any sores about him. A fellow lodger described the deceased as a healthy man. He returned from his work on Wednesday, Feb. 2nd, complaining of stiffness about the head, shoulders, and back. On the next morning a small pimple made its appearance on one side of his jaw. On the following Saturday, Feb. 5th, he proceeded to the David Lewis Northern Hospital, when the house surgeon on duty suspected anthrax. He was then admitted to the hospital as an in-patient, where he died on the following Monday, Feb. 7th. The medical evidence was to the effect that the deceased's death was due to blood poisoning following anthrax, and the jury returned a verdict accordingly. Mr. Eva attended the inquiry on behalf of the Home Office.

Liverpool School of Tropical Medicine: the Mary Kingsley Medal: The New Chairman.

The Mary Kingsley medal of the Liverpool School of Tropical Medicine is awarded to two classes of individuals who have done work in this connexion—namely, to those who have advanced the cause by administrative efforts, and those who have advanced it, not less, by scientific researches. The award of the medal for 1909 has been made to the following:—(1) To Mrs. Pinnock, in recognition of the services rendered to the cause of tropical medicine and sanitation by her brother, the late Sir Alfred Jones, founder and first chairman of the school; (2) to Mr. William Adamson and Dr. William Carter, for the assistance they rendered in the foundation of the school; (3) to Prince Auguste d'Arenberg, President of the Suez Canal Company, for his campaign against malaria at Ismailia; (4) to Sir William McGregor, G.C.M.G., the new Governor of Queensland, for his services on sanitation and to tropical medicine while Governor of Lagos; (5) to Surgeon-General Walter Wyman, the head of the Marine Hospital Service of the United States of America, for the fine organisation which he has given to the service under him and for the manner in which he has always supported scientific principles in the matter of public sanitation; (6) to Sir Alfred Keogh, recently the Director-General of the Army Medical Service, for the fine organisation which he has given to the service under him, and for the manner in which he has always supported scientific principles in the matter of public sanitation. The following have been awarded the medal for valuable contributions to the scientific and educational side of tropical medicine: (1) Professor R Blanchard of Paris, for his services to medical entomology and parasitology; (2) Dr. Anton Breinl, recently the director of the research laboratories of the school at Runcorn, and now director of the Tropical Diseases Institute in Queensland, for the services which he rendered to the school during his connexion with it; (3) Professor Angelo Celli of Rome, for his long studies of malaria and other parasitic diseases in Italy, and for the campaign against malaria which he has led during the last ten years; (4) Dr. C. W. Daniels, the director of the London School of Tropical Medicine, for his services to scientific research and to the cause of education in tropical medicine; (5) Colonel W. G. King, I.M.S., for his sanitary labours in the Southern Presidency of India and for his efforts regarding the foundation of the King's Institute at Madras; (6) Professor Nocht, the director of the Hamburg School of Tropical Medicine, for his services to scientific research and to the cause of education in tropical medicine; (7) Professor G. H. F. Nuttall, Quick professor of parasitology at the University of Cambridge and external examiner in tropical medicine to the University of Liverpool, for his researches in parasitology; (8) Major Leonard Rogers, I.M.S., for his researches in every department of tropical medicine for the last 15 years; and (9) Professor J. L. Todd, associate professor of parasitology at McGill University, for the services which he rendered to the Liverpool school during his connexion with it. —The School of Tropical Medicine has made a wise selection in the choice of a successor to the late lamented chairman. Sir Alfred Jones, who so worthily filled the post for so many years. By the appointment of Mr. W. H. Lever to fill the vacancy the school has secured an active chairman and one who will carry great weight with the city, and will do much to help the prosperity of the school. It would be difficult to find a successor who could so nearly fill the place left vacant by the death of the late chairman.

The Annual Meetings of the Hospital for Women, Shaw-street, and the Liverpool Dental Hospital.

At the annual meeting of the Hospital for Women held on Feb. 10th under the presidency of the Lord Mayor, a strong appeal was made for increased financial support, the deficit amounting to £545. Sir Charles Petrie suggested that, as the present institution was altogether inadequate to accommodate all applying for relief, the committee should seriously consider the advisability of establishing a new hospital. The forty-ninth annual meeting of the subscribers to the Liverpool Dental Hospital was held on the same date at the Town-hall, the Lord Mayor presiding. Special interest attached to the proceedings owing to the expected early opening of the new hospital in Pembroke-place, and to the expansion of the valuable work of the institution consequent on the Act dealing with the medical inspection of children.

Feb. 22nd.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Sanitary Condition of Collieries.

SOME uneasiness has been caused in the colliery districts of South Wales and Monmouthshire as to the part which may be taken in the spread of infectious disease by the underground workings of the collieries. At a meeting of the Ebbw Vale urban district council on Feb. 15th Mr. J. W. Davies, the medical officer of health, reported upon the circumstances connected with the death last year from "farcy" of a haulier who had been employed underground in one of the local collieries. Other deaths had also occurred amongst colliers working in the district which the medical officer of health suspected might have been due to the surroundings amidst which they worked. It is to be regretted that the colliery company did not accede to the request which was made for permission to make suitable investigations underground. The refusal is all the more unfortunate in view of Mr. Davies's statement that he was compelled to give credence to the views current amongst the workmen which pointed to the probability that the sanitary conditions prevailing underground were not of an altogether satisfactory nature. In the Industrial Hygiene Section of the Health Congress held in Leeds last July a discussion took place upon the sanitation of mines, in the course of which it was suggested that there should be a sanitary scavenger appointed to each colliery, whose duty it would be to see that human dejecta were rendered innocuous. In spite of the absence from the underground workings of the collieries of any systematised sanitary arrangements, it is remarkable that the spread of typhoid fever is rarely, if ever, attributed to this circumstance. During the past few years outbreaks of this disease in colliery districts have been investigated in many coal-mining districts by the medical inspectors of the Local Government Board, but no reference has been made by them to insanitary workings. In the Rhondda valleys typhoid fever has at times been very prevalent, but only on one occasion, some 11 or 12 years ago, has there been any connexion between the outbreak and a colliery, and in that instance the infection was shown to be spread through several colliers drinking water from a horse trough underground, which received a supply of water through pipes from a stream above ground which flowed under a privy receiving the discharges from a typhoid patient.

Cardiff Infirmary.

The report of the work carried on during 1909 in the Cardiff Infirmary, which was presented to the annual meeting of governors on Feb. 23rd, may be considered as fairly satisfactory in spite of the fact that the income of nearly £14,000 was less by £2700 than the expenditure. The inhabitants of Cardiff have a way of responding generously to appeals for really deserving objects, and they may be depended upon to wipe out the adverse balances of the past few years when the necessity arises. There were in the infirmary during 1909 on an average 172 patients daily, and the average cost per bed was £71. The average daily cost per head for patients and staff for provisions was slightly over 10*d.*, showing that there must be a constant supervision over the expenditure. The accommodation in the institution has now been increased from 187 to 196 beds, and during the year 2431 patients were received into the wards.

Cardiff Medical School.

The grant of £1500 yearly which was allocated last autumn by the Treasury to the Cardiff Medical School is to be spent in increasing the salaries of some of the present professors, in the appointment of professors of pathology and bacteriology, and in additional lectureships.

Feb. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Annual Dinner of the Edinburgh Royal Medical Society.

THE annual dinner of the Edinburgh Royal Medical Society was held on the evening of Tuesday, Feb. 15th, in the hall of the society. The chair was occupied by the senior President, Dr. J. Maxwell Ross. The guest of the evening was Sir T. Lauder Brunton, whose health was proposed by the President. Sir Lauder Brunton mentioned the fact that it was 43 years ago that he occupied the chair at the annual dinner of the society. He spoke of the society having led him to speak and to write on medical topics. He said he had one great rule as a student, he never worked on Sunday and he never worked at anything after 11 o'clock at night. He then spoke at some length of the revolution which had taken place in medicine and surgery in the 43 years since he was president of the society. Their knowledge of the functions of the nervous system and of the processes in digestion had all been acquired since then. Their methods of diagnosis were quite different now. In the whole of Scotland then there were probably only two clinical thermometers and they were in use in the clinical wards in the infirmary; they were 2 feet long and took ten minutes to give the temperature. Other toasts followed.

Edinburgh and St. Andrews Universities Election.

The counting of the votes for Edinburgh and St. Andrews Universities Parliamentary election gave Sir Robert Finlay a total majority in the joint constituency of 2512.

Recent Appointments in Edinburgh.

Owing to the promotion of Mr. Alexander Miles to the position of full surgeon to the Edinburgh Royal Infirmary with charge of wards, a vacancy occurred on the staff of assistant surgeons. For this junior post Mr. E. W. Scott Carmichael, F.R.C.S. Edin., assistant surgeon at the Royal Hospital for Sick Children, was selected by the infirmary managers. A vacancy has also occurred at Leith Hospital owing to Mr. Miles's resignation of that post; he has been succeeded by the assistant surgeon, Mr. J. W. Struthers, F.R.C.S. Edin., and the assistant surgeoncy has been given to Mr. David P. D. Wilkie, F.R.C.S. Edin.

Payment for Attendance on Street Accidents.

As a result of a conference between the Glasgow and West of Scotland branch of the British Medical Association and the Watching and Lighting Committee of the corporation of Glasgow, an understanding has been arrived at regarding payment for attendance on streets accidents. The corporation has agreed: (1) to pay a uniform fee of 5*s.* to medical practitioners for their services in street accidents; (2) to instruct members of the police force to report to their district superintendents the occurrence on their beats of any street accidents in which they have called in the services of a medical practitioner, and that a report of such accidents be, after the usual inquiry, made by the chief constable to them; and (3) to request the members of the medical profession to intimate to a constable the occurrence of any other accidents and the particulars of their attendance on the person or persons injured, wherever such person or persons are unable to pay the fees.

Glasgow University Men in England.

At the County Hotel, Newcastle-on-Tyne, the annual dinner of the North of England Glasgow University Club took place recently, and was attended by a large and distinguished gathering. Dr. Frank Russell of Newcastle presided, and the guests of the evening were Mr. John Cleland, M.D. Edin., LL.D., F.R.S., emeritus professor of anatomy in Glasgow University, and Mr. William Jack, M.A., LL.D., emeritus professor of mathematics in Glasgow University.

The New Infirmary for Perth.

The annual meeting of subscribers to the City and County of Perth Royal Infirmary was held in the City Chambers, Perth, on Feb. 14th. The recommendation of the directors to erect a new infirmary at a cost of £36,000 at Tullyhand was approved. For this purpose 11 acres have been feued from the Glover Incorporation at £15 per acre. The sketch plans show a new infirmary consisting of four main ward blocks, each two storeys in height, with administrative departments in the centre, dispensary, isolation blocks, &c. There is provision for 100 patients, and the estimated cost is £36,190, to meet which there is a fund of £31,783 available, leaving £4407 to be subscribed. Mr. James Miller, A.R.S.A., Glasgow, was appointed architect of the new infirmary.

Forfar Infirmary Improvements.

A meeting of the directors of Forfar Infirmary was held on Feb. 16th. A report on the plans and estimates for the improvements at the infirmary was submitted. It was stated that up to the present something like £440 had been collected in subscriptions towards the estimated cost of £950. It was agreed to get in estimates and hold a special meeting of the directors three weeks hence.

Death of Dr. Andrew Key of Montrose.

Dr. Andrew Key died at Montrose on Feb. 18th. The deceased gentleman was a graduate of Edinburgh University and had been in practice in Montrose since 1871. He was one of the oldest medical practitioners in Forfarshire and was highly respected by all his professional colleagues throughout the county. He was factory medical officer for Montrose, medical officer for Rossie Reformatory, and honorary consulting surgeon at Montrose Infirmary. His wife died only a fortnight ago.

Feb. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Maternity Hospital: Annual Meeting.

THE annual general meeting of the governors and supporters of the National Maternity Hospital, Dublin, was held last week in the Mansion House. The chair was occupied by the Most Rev. Dr. Donnelly, Catholic Bishop of Canea. The annual report of the institution was read by the Master, Mr. A. J. Horne, President of the Royal College of Physicians of Ireland. Reference was made therein to the vacancies that had occurred in the Masterships during the past year, which resulted in the unanimous re-election of Mr. Horne and Mr. R. J. White for a period of ten years. A tribute of deep regret was paid to the memory of Mrs. McArdle, who had for many years filled the post of honorary secretary to the hospital, and of profound sympathy with her bereaved husband, Mr. John S. McArdle, senior surgeon of St. Vincent's Hospital, and a special minute had been made by the board expressing its feeling on the occasion. Both the intern and the extern work of the hospital had been well maintained during the year; so also had been that of the dispensary, in which 4430 patients had been treated. The over-draft at the bank still remains very considerable, and the board made an urgent appeal for the financial assistance necessary to enable it to carry on its beneficent work. The medical report showed that during the year ending March 31st, 1909, the total number of admissions to the wards was 872; of these, 772 were to the maternity wards and 100 to the gynæcological. The number of deaths had been only 3. The new operation theatre, which had been furnished and fully equipped, gave the much-needed facilities to the surgical staff for carrying out the increasing number of operations which they were called upon to perform. Their share of the hospital work had been carried out by the nursing staff in a most satisfactory manner. In the extern maternity department 1048 cases had been attended by the medical officers and nurses of the institution. Over 10,000 visits had been paid by the nurses to poor patients at their homes.

Milk Adulteration: A "Country" Firm Sued.

A lawsuit of unusual type based upon milk adulteration was brought into the Nisi Prius Court last week. The evidence which had been elicited in the case went to show that the proverbial "doctoring" of our Dublin milk is a process not unknown even in country towns and country villages. The action had been brought by James O'Keefe, 74, Blessington-street, Dublin, for the recovery of £500 damages in respect of the sale of buttermilk. The plaintiff was a wholesale dealer in milk, and had purchased large quantities of milk from the defendants, the Western Creamery Co., Limited, who carried on business in Longford and elsewhere. They had delivered the milk to the plaintiff, who had in turn sold it to various customers, and several persons to whom it had been sold for retail purposes were fined for its being diluted with an excessive percentage of water. The defences made had traversed all the plaintiff's claims, and issue was joined as it was expected that the case would be tried by a special jury. A consent had, however, been agreed to, the terms of which provided that a sum of £20 and all costs were to be paid by the defendants to the plaintiff in full satisfaction of all his claims, and that the consent be made a rule of court. Plaintiff's counsel accordingly appeared for the purpose of asking for their client that an order be made in accordance with these terms. On hearing the particulars the judge received the consent settling the action and made it a rule of court. This action can hardly fail to have a salutary influence on the milk traffic, of which the nefarious abuse has long constituted one of the very worst physical ills of life in our larger Irish towns and cities.

Killarney Rural Council: Dairies, Cowsheds, and Milkshops Order.

One of the special difficulties which have been experienced by Irish councils in carrying into operation the Dairies, Cowsheds, and Milkshops Order is that connected with the amount of the salary to be offered to the veterinary inspector to be appointed for the purpose of fulfilling its requirements. The sum which has hitherto been offered has always been a moderate one, but varies with the extent of the district in question and the character of the locality as a dairying area. The Killarney rural council recently advertised the vacant position in its own district, offering an annual stipend of £15. It was stated, too, that this was the amount given to the inspector in the Tralee district. There were, however, no applicants for the position in the picturesque Killarney district, with the result that the Local Government Board, having been made acquainted with all the circumstances, has informed the council that, having regard to the great extent of the district, the salary appears to be insufficient, and that accordingly another advertisement offering a salary likely to attract efficient candidates should be forthwith issued. The question is to be considered at a future meeting of the Killarney rural council. Meantime the publication of these particulars has elicited a good deal of comment from medical inspectors and officers of health throughout all parts of the country, who are agreed that their own claims and representations have rarely, if ever, received so sympathetic consideration.

Ballymoney Nursing Association.

At the fourth annual meeting of the Ballymoney Nursing Association, held on Feb. 16th, at which members of all the religious denominations were present, a very satisfactory report was presented, with the exception of a slight diminution in subscriptions. A workhouse porter by his will has left the association a donation of £50.

Operations in Irish Workhouse Infirmaries.

At the weekly meeting of the Lurgan board of guardians, held on Feb. 18th, Dr. J. S. Darling presented an interesting report giving particulars of 205 operations performed in the infirmary during the past year. He urged the necessity of the provision of a maternity ward and of a room where patients could be located after serious operations, instead of in a general ward as at present. A guardian drew attention to the fact that the money paid for outside medical assistance was steadily increasing, and said that last year the amount was larger than it had been in the memory of the oldest member of the board. Another guardian, pointing out that out of the 205 operations there had been only 10 fatalities, thought with such results the money had not been lost. Dr. Darling being sent for, explained that no extra medical assistance from outside had been requisitioned, except when absolutely essential. He showed that many of the operations were the most serious that were performed in any hospital, and if not performed there the guardians would be paying from 1 to 2 guineas per week for many weeks together and sometimes months, as other boards had to do, for treatment of patients in the Royal Victoria Hospital, Belfast, so that the cost would be infinitely more to them, to take no account of the expense to the friends of the patients going to visit them. He had outside assistance in only 58 cases during the year, and if there had been no resident medical officer in the house the guardians would have had to pay at least 100 guineas for an anæsthetist. He thought the poor were getting ample value for any expense; he never called in medical aid unless he could not do without it, but he would always put the interests of patients first. He protested against these constant strictures of the guardians, as if he was anxious to put them to expense. They should remember that they had a large community to deal with, a population of 35,000 people, including two large manufacturing centres (the towns of Lurgan and Portadown), where naturally the workers were subject to many diseases and injuries, and they should bear in mind that he did the best he could for each patient. After a protracted discussion, the chairman of the board of guardians assured Dr. Darling that the members of the board had the utmost confidence in him, and knew that in every instance he did what was best in the interests of the patients. The medical profession in the Poor-law service in the North of Ireland are greatly indebted to Dr. Darling for the dignified position he has taken in this matter. It is to be hoped that the medical officers of other workhouse infirmaries will try to educate, as well as he is doing, their boards of guardians as to their responsibilities to the sick poor of whom they have charge.

The Samaritan Hospital, Belfast.

At the annual meeting of the friends of the Samaritan Hospital, Belfast, held on Feb. 21st, it was reported that during the year 1909 there had been 692 patients in the extern department and 201 in the wards, of whom 153 required operation, of which 56 were major in character. Financially, the total receipts were £320 less than the previous year. On the general result the hospital was £188 12*s.* 6*d.* in debt. Reference was made to the interesting fact that the chairman of the meeting—the Lord Mayor of Belfast—was the brother of Dr. W. K. McMordie, who, in 1872, had founded the Belfast Samaritan Hospital.

Feb. 22nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Anastomosis of the Facial and Spinal Accessory Nerve.

AT a recent meeting of the Neurological Society Dr. Unger reported a case of paralysis of the right facial nerve which occurred after the extraction of six teeth, and which he had endeavoured to relieve by performing an anastomosis of the facial with the spinal accessory nerve. These two nerves were made accessible by an incision along the anterior edge of the sterno-mastoid muscle, beginning from the mastoid process. A small branch detached from the spinal accessory nerve was then united by three silk sutures to the facial nerve, which had been previously divided as far back as possible. The incision healed by primary union. The result was that after about six months the patient first observed movement and contractions of the paralysed muscles when she moved her arm. After a year some paresis of the muscles supplied by the spinal accessory nerve had developed, the right shoulder being lowered, the clavicle being thrown forward, and the supraclavicular cavity becoming deeper than on the left side. Voluntary movement of the muscles supplied by the facial nerve was, however, impossible, but when the right arm was raised all its branches exhibited involuntary movement, the frontal branches excepted. In the subsequent discussion it was said that although a certain mobility of the facial muscles was restored by the operation their dependence on the movements of the arm was nevertheless a drawback; moreover, that the weakness of the arm resulting from the operation made an anastomosis of the facial with the hypoglossal nerve preferable to an anastomosis with the spinal accessory.

Therapeutical Action of Radium Emanation.

At a meeting of the Verein für Innere Medicin Dr. Löwenthal read a paper on Some Therapeutical Effects of

Radium. He said that the external effect of radium on the skin did not differ very much from that of the Roentgen rays, and that in consequence of its costliness its use has almost been abandoned except in the treatment of cancer, for which it has been recently employed by Professor Czerny. For internal treatment radium itself was of little benefit because it was not absorbed by the intestines and was eventually discharged by the bowels. but the emanation which behaved as a gaseous substance was absorbed. The therapeutical action of radium emanation was confirmed by the fact that a reaction occurred in patients after a bath containing emanation in the same way as it did in the so-called Wildbäder, which contained a great amount of emanation. The conditions for which emanation baths were indicated were the same as for Wildbäder—namely, rheumatic diseases of the joints and muscles, chronic neuritis and myocarditis, chronic catarrh of mucous membranes, and gout. According to the experiments of Dr. Löwenthal, the emanation was absorbed through the respiratory tract and the gas rested in the body for a period of three or four hours. He has also studied the manner in which the curative action of emanation might be explained. It has been suggested that the action might be either a bactericidal or an antitoxic one, but this proved to be erroneous. He found, however, in the course of his experiments that the emanation made the ferments of the organism more active and favoured autolysis. Autolysis in the test-tube meant an increase of the absorbing power in the living organism, and the beneficial action of radium in chronic rheumatic and gouty diseases might be explained on these principles. Radium had also a solvent action on urates. The β and γ rays of radium had also a biological effect which continued to operate in the organism, whereas the influence of the α rays was more transitory. The hitherto inexplicable fact that some Wildbäder produced effects at a comparatively late date might thus be accounted for.

The Position of Privat-docenten.

The medical faculty of the University of Berlin intends to introduce some modification in the status of *privat-docenten* by recognising them only for the term of five years, after which time the faculty will again in each case consider whether they shall be allowed to continue lecturing or not. It is said that the increasing number of *privat docenten* makes a reform necessary; at the present time there are no fewer than 129 actually recognised and 17 medical men are applying for admission as such. It is further agreed that certain *privat docenten* or applicants hold their office or apply for it as the case may be, not for scientific reasons or because they have a taste for lecturing, but merely as a way to get practice, since their possession of a title distinguishes them in the eyes of the public from the rank and file of the profession. Some of them have only very few pupils, or even do not lecture at all, whilst still retaining their title. The faculty will in future relieve after a term of five years all those *privat-docenten* who have not accomplished meritorious scientific work and have not got a sufficient number of pupils. It is hoped that by this system the number of applications will become smaller, because the applicants will certainly not readily incur the risk of being refused a prolongation of the term of five years, for this would be prejudicial to their scientific and professional reputation. The intention of the Berlin medical faculty, which must receive the approval of the Government before it comes into operation, has caused a good deal of discussion in medical and university circles. Although some of the evils of the existing system are freely admitted, it is said that the reform while doing away with them will create others. After the change has taken place the faculty will certainly recognise *privat-docenten* more readily than hitherto, because they will have the power to get rid of them after five years if they are found to be unfitted for their position. On the other hand, it will be rather difficult to prevent personal reasons from playing a part in the decision, and their dependent position in relation to the faculty will deter *privat-docenten* from expressing views or teaching doctrines at variance with those of the leading members of the faculty. There is reason for believing that the proposed change goes rather too far, and that the unsatisfactory features of the present system might be avoided by a careful selection of the applicants independently of family and other reasons, rather than by a scheme incompatible with that liberty of teaching which is the principal *raison d'être* of *privat-docenten.*

Feb. 21st.

BUDAPEST.

(From our own Correspondent.)

Prognosis in Epilepsy.

In an address delivered before the Clinical Society Dr. Donath said that it was curious to notice that there has not been during the last 50 years any change for the better in the prognosis of epilepsy under the bromide treatment, judging by the percentages of recoveries recorded before and since 1857, when the treatment was introduced. Thus, before that date different observers varied in their estimation of the probability of cure from Hufeland's 5 per cent. to Herpin's 50 per cent. Since 1857 Nothnagel has recorded 4 per cent. of recoveries, Dana 5 to 10 per cent., Donath 6 to 8 per cent., and Habermaas 10 per cent., while the highest estimate was 12·5 per cent. given by Alt. Dr. Donath, whose experience has been very large, has formulated some conclusions based thereon. Leaving out of count all cases where the epilepsy was due to any obvious organic lesion or was accompanied by any degree of idiocy or imbecility, he found that among patients under observation for lengthened periods 10 per cent. recovered. His definition of recovery was freedom from fits for a period of from six to seven years (nine years according to Aldren Turner); relapses might take place after an interval of four or five years of freedom, but they very rarely occur after longer periods. In exceptional instances, even after very prolonged periods of freedom from seizures, a relapse might follow, as happened in one case after 20 years, and in another after 25 years. Curiously enough, the most unfavourable cases were those of *petit mal*, for it was found that *grand mal* was much more amenable to drug treatment. Both the epilepsy of puberty and that of old age were tractable, while that of childhood and that of adult life were less hopeful. It was important to bear in mind that a family tendency did not in many cases offer any obstacle to the arrest of the disease, under suitable treatment, but it did increase the likelihood of dementia supervening.

Some Drawbacks of Pasteurisation.

In view of recent investigations conducted by Czerny in Germany, by Pannington in Philadelphia, and by Dr. Deutsch of Budapest, it is likely that current views on the value of pasteurisation will have to be altered. The medical profession has for many years been recommending the use of pasteurised milk for the poor of our large towns, and the daily newspapers, following this lead, have had much to say in its praise. It must be admitted that pasteurisation does not in any way alter the nutritive qualities of milk, whatever effect it may have on it from an æsthetic point of view. Moreover, there is no doubt that by pasteurisation the bacterial contents of the milk are for the time greatly diminished, and the danger of infection is proportionately lessened. Unfortunately, however, according to Dr. Deutsch, the diminution of bacteria is only temporary, and pasteurised milk, when examined a day or two after preparation, is found to contain a larger number of bacteria than ordinary milk. The organism chiefly affected by pasteurisation is the lactic acid bacillus, whose therapeutic effects are now so much in evidence.

Aortic Insufficiency after Rupture of a Valve.

Dr Purjesz exhibited a case (in the Erdélyi Drvosegyesület) showing that aortic insufficiency could be caused by a rupture of a valve. He said that this lesion might be due to atheroma, but it was less commonly known that it might occur in a perfectly healthy valve. Aortic insufficiency followed, but extensive vegetation at the seat of injury might also narrow the orifice. It was generally found that an exceedingly loud and rough murmur indicated a traumatic etiology in doubtful cases, but this was not always so. Dr. Purjesz gave the detailed history of the case which was exhibited and demonstrated that a very definite murmur could be heard.

Feb. 21st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

PLAGUE returns of the week ending Jan. 8th show 10,515 deaths, compared with 7725 in the week preceding. Bombay Presidency reported 886; Madras, 70; Bengal, 1093; the United Provinces, 5341; the Punjab, 1421; Burma, 109; the Central Provinces, 1198; Mysore State, 79; and Rajputana, 273. With respect to the figures for the United Provinces, Ballia district recorded 2035 deaths and Azamgarh 1119.

New Barracks for Indian Troops.

It is very satisfactory to learn that, on the personal initiative of the Commander-in-Chief, measures are being taken to improve the housing of the native army. The "lines" in only too many instances are not as substantial and weather-proof as could be wished, and the health of the men suffers in consequence. Twenty-one new sets of barracks are to be built of an improved pattern that will ensure wholesome and comfortable quarters for the men, and the expenditure for these is not to fall upon regiments. The old plan of allotting lump sums to commandants and leaving them to make the best use of the money—never really sufficient for the purpose intended—is to be given up, and there will be expert supervision of the planning and construction. The Military Works Department are to be given their chance, and it is certain they will do their work in a practical and economical manner. The outlay from first to last will be heavy, and it will take a considerable time to give all units good "lines"; but a beginning has been made, and not even the most uncompromising critic of the Indian military budget will begrudge expenditure in this new direction.

New Drainage Works at Amritsar.

The Punjab Sanitary Board has granted a subvention of Rs.37,500 for drainage works at Amritsar. The full programme of sanitary work at this station is a very expensive and extensive one, including the filling up of hollows around the town, the deepening of the outfall drainage channel, and the removal of sullage. When completed it should have a very beneficial effect on the health of the station.

St. John Ambulance Association.

The annual report of the Indian Branch of the St. John Ambulance Association for the year ending Sept. 30th, 1909, has just been issued. It is published with the authority of His Excellency the Viceroy, and can be recommended to those who are at all interested in the great humanitarian work of the ambulance department of the Order of St. John. The report gives an account of the organisation of the branch and deals in some 17 sections with the work of the association amongst military and volunteers, police, railway, mines, mercantile marine, jails, &c. Details of the work of the 24 centres in various parts of the Indian Empire are given. A letter from the Principal Medical Officer of His Majesty's Forces in India is published which should lead to a great extension of the work amongst soldiers. A number of soldiers from each unit in India have to be trained annually in "first aid," and the diagrams printed by the association are recommended by Indian Army Regulations, Volume VI., paragraph 896, for use in all classes. The course of instruction covers the association's syllabus, so that military medical officers could, without any additional labour to themselves, put up a large number of men annually for the association's certificates. This has already been done at several stations, and in view of Surgeon-General Trevor's circular will no doubt be taken up in many others. The sanitation course of the association opens up a wide field of work amongst soldiers. In accordance with Indian Army Order No. 334, 1907, four men and a non-commissioned officer per company have to be trained annually in sanitation. The curriculum covers the association's syllabus, and here again a large number of men can be certificated without any additional lectures or examining. Forty-eight men were granted the certificate in the First (Peshawar) Division of the Army during the year. Their commanding officers gladly paid the small fee for the certificates, which are highly valued by the men. The report may be obtained on application to Colonel W. R. Crooke-Lawless, C.I.E., Surgeon to H.E. the Viceroy, or to Major R. J. Blackham, R.A.M.C., Peshawar.

Jan. 15th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

A National Disaster.

THE destruction by fire of the magnificent palace of Tchiragan, the new Ottoman Parliament, which was inaugurated only a few months ago, may well be considered a great national disaster for the Turks. They have lost with this splendid edifice perhaps the finest building in the whole of their Empire. A feature of the disaster, a feature almost always met with in extensive fires in Constantinople, was the great lack of water for purposes of extinction. The so-called "Dercos" water that supplied Tchiragan was somehow cut off from the main source during the conflagration, and the fire brigades, the regular and the irregular (popularly known as "touloumbadjis"), were for an hour helpless to combat the disaster. This fact is taken by many as an argument for the supposition of foul play. Then it was found that the palace had not a single contrivance to aid in the extinction of the fire. This has now been found the case in all the public and Government buildings of the metropolis. The authorities have, therefore, ordered that this evil should be remedied as quickly and as energetically as possible. The theatres and the small new circus and other institutions of that kind have received strict injunctions always to keep a number of barrels and buckets full of water ready for immediate use in case of fire.

Typhoid Fever.

The present month has again shown a rather alarming increase of typhoid fever. Several officers of the American Embassy's despatch vessel have been laid up in the British hospital with this disease. They are now, however, on the way of recovery. Fatal cases are most frequently found amongst newcomers to Constantinople. Oysters are one chief cause, while the ever-contaminated water-supplies play their part. The officers alluded to had partaken freely of the oysters of San Stefano on the Sea of Marmora. The beds of these molluscs in that part are considered to be the best in the metropolis. The natives eat them liberally and frequently and almost always without any bad results. Apart from that, the natives or old residents seem to be able to eat and drink almost anything without consequences, as though there is a kind of immunity which those who live here a long time acquire. It is said that the first settlement of Spanish Jews, who came over about 400 years ago and took up a permanent abode on the banks of the Golden Horn, used to suffer terribly from the scourge of typhoid fever. At present this disease seems to have lost much of its virulence for their descendants. Typhoid fever cases amongst them are easily amenable to treatment.

Military Surgeons.

There seems to have been much recent negligence in performing their duty on the part of Turkish military surgeons. It appears that sick soldiers have received inefficient medical and surgical assistance, and numbers were not attended at all. The inadequate scale of pay is assigned as the cause of this negligence. I am informed that some medical men in military service in Constantinople itself, men with long experience, do not get more than 600 piasters per month (£5). This is, of course, a miserable salary, and one can hardly wonder that they are not very eager to do full justice to their duties. The Minister of War, however, has issued an order that all military surgeons must attend to their work with more zeal and efficiency. In cases of further neglect they will be liable to severe punishment. I understand, however, that the question of the increase of salary is shortly to be taken up in a very energetic manner by some competent leading men.

Feb. 12th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Ulceration and Cancer of the Penis.

THESE diseases have on various occasions been noted by foreign doctors here as occurring more frequently in hospitals for Chinese than among similar institutions at home. In cancer it is probable that the epithelioma is often a papilloma to begin with, which has become malignant from the chronic irritation of rough cotton trousers. The main etiological factor in ulceration is prolonged and untreated venereal disease, though there is no excuse for any native suffering to such an extent as many of them do, for the treatment adopted in China for the past 2000 years corresponds to modern Western methods. Calomel, cinnabar, and realgar are among the recognised formulæ, the former entering into every native prescription. In cases of cancer the general experience is that the cervix in the female and the penis in the male are by far the commonest sites of malignant disease in China, and these observations raise an interesting point as to the possibility of malignant cervical disease being caused by infection from cancer cells from the penis, for I have known cases that admitted cohabitation although suffering from painless epitheliomata.

Owing to the dirty habits of the Chinese, their indifference to disease so long as it is mild, and the absence of Lock Hospitals or any surveillance by the authorities, cases occur of sloughing phagedena of a worse kind than is seen at home. I have met with two cases within the past year in which the penis has been amputated for phagedænic gumma in mistake for cancer. But whether the diagnosis be wrong or not cases occur in which syphilitic ulceration may reduce the patient to a condition beyond medicinal treatment and necessitating amputation. An example of this occurred in a native at Hankow, who came under the care of Dr. R. T. Booth, where the patient suffered from ulceration of the penis severe enough to render amputation advisable but refused to submit to such a radical measure and went away. In nine months he returned, and during this time the entire penis had ulcerated away, and the scrotum had evidently ulcerated in the middle line right back to the perineum, ultimately extending to the margin of the anus. The remains of the scrotum, enclosing the testicles, lay as two folds, simulating labia majora, and the whole appearance was not unlike that produced by ulcerating granuloma of the pudenda in a female. This man was one of three cases in the hospital at the time suffering in the same way.

My experience of cancer of the penis in Peking is limited to eight cases, seven of whom have submitted to the *complete* operation, but I regret to be unable to give statistics owing to the impossibility of tracking cases here once they have left hospital. The fact that they have not returned to hospital is in favour of non-recurrence. Happening recently to meet one case which was operated on over two years ago and remains quite well, I am tempted to hope the others may have likewise benefited. In THE LANCET of Jan. 11th, 1908, p. 135, there is a note by your correspondent from Vienna that, in the opinion of Professor Spiegler, the removal of epitheliomata of the penis, if done early enough, could be followed by complete freedom from relapse. The complete operation referred to above was reported on some years ago very favourably by Dr. J. D. Thomson of Hankow, after an experience of 30 successful cases. Though it involves a very thorough removal, or, as he described it, a "clean sweep," I can corroborate his opinion that the operation is not followed by any shock or untoward results, and it is also a better one than that described in surgical text-books, especially those which advocate the split scrotum operation, as it avoids the misery caused by urine dribbling and excoriating the scrotum. Also if there is anything in the assertion that inoperable cases of cancer in the breast in women are kept in check by removal of the ovaries, it is reasonable to hope that removal of the testicles may have some effect in lessening the chances of recurrence or of delaying growth in glands in the abdomen.

The first step in the operation is to secure the penis behind the disease by a strong, tightly-drawn temporary ligature and to sweep away the mass in front of this ligature. On account of the liability of the corpora to retract within the sheath it will be well to secure them before they are divided. The parts are again cleansed (I paint over with tinct. iodi), and now the inguinal glands and lymphatic-bearing tissue on both sides are removed; the cords are secured and divided; and the groin incisions necessary for these procedures are joined above the root of the penis well free of the disease, the incision being here carried through the suspensory ligament kept tight by dragging on the stump of the penis. The cords do not give trouble, they are cut across and the vessels secured by ligature, the stumps lying within the openings of the inguinal canals. The scrotum is now lifted up, and somewhere near its junction with the perineum a point in the middle line where the corpus spongiosum containing the urethra will lie evenly and naturally is marked; and from the cross incision to this point the skin and underlying tissues on both sides are evenly divided, leaving flaps that in conjunction with the upper, pubic, flap will meet without tension in a form something between a Y and a T. The freed scrotum is now held up or clipped away, while the corpus spongiosum is divided transversely behind the temporary ligature spoken of at the beginning, and is carefully dissected from the corpora cavernosa. This process is greatly facilitated by passing a metal bougie into the urethra and by means of it putting the tissues between the corpus spongiosum and the corpora cavernosa on the stretch while the cutting edge of the scalpel is inclined towards the corpora cavernosa. This done, a blunt instrument is pushed from below upwards between the crura, to separate and allow the finger to get in between them. The dorsal vessels are now secured and the crura ligatured as closely as possible to the arch of the pubis and divided beyond the ligatures. Everything has now been removed except the corpus spongiosum containing the urethra, and it has been left sufficiently long to project well from the lower angle of the wound. After the flaps are sewn no drainage is required. The whole area, if healed by first intention, is smooth and clean, the urethra projects at the lower angle of the perpendicular limb of the wound, and urine can be passed freely in the usual way in the erect position.

Of eight cases operated on by Dr. J. L. Maxwell of Formosa, who followed the Pearce-Gould operation, two recurred in the scrotum and one without local recurrence infected too extensively for operation the right inguinal glands. Dr. Thomson's operation is more thorough than that of Dr. Förderl of Vienna, described two years ago in THE LANCET, and it minimises to the utmost possible extent the chance of recurrence.

Jan. 22nd.

Obituary.

SIR CHARLES HAYES MARRIOTT, M.D. LOND., F.R.C.S. ENG.,

CONSULTING SURGEON TO THE LEICESTER INFIRMARY.

THE death took place at Harcourt House, Kibworth Harcourt, Leicestershire, on Feb. 14th, of Sir Charles Hayes Marriott, at the age of 75 years.

Sir Charles Marriott was born in 1834 at Kibworth and was the son of Mr. John Marriott, M.R.C.S. He was educated at Uppingham and subsequently at University College, London. In 1857 he qualified with the Licence of the Society of Apothecaries and in the following year he obtained the Membership of the Royal College of Surgeons of England, which he converted to the Fellowship in 1859, and also graduated in Medicine at the University of London. He took his M.D. in 1863.

In 1859 he was appointed house surgeon at Leicester Infirmary, and two years later, on giving up this post to take up private practice in the town, he was elected an honorary surgeon of that institution, an office which he held until 1901, when he retired and was appointed honorary consulting surgeon. During this long period he gave of his best work to the infirmary, and he was rewarded by becoming one of the most successful operating and consulting surgeons in the Midland counties. When he retired from the post of honorary surgeon the weekly board of the Leicester Infirmary passed a resolution accepting his resignation with deep regret and placing on record its appreciation of his valuable work and distinguished career. He was knighted in 1904, and all sections of the community, irrespective of creed and party, rejoiced in the honour paid to one who conferred distinction on his profession and his native county.

Sir Charles Marriott was a keen politician and was president of the Harborough division of the Conservative Association from 1892 to 1907, when he resigned owing to failing health. He was a J.P. both for the borough and county, and a Deputy Lieutenant of the county. He did much to further the interests of the Leicestershire County Cricket Club; he was one of the founders of the Leicester Nursing Association, an active supporter of the National Society for the Prevention of Cruelty to Children, and formerly chairman of the local branch of the Royal Society for the Prevention of Cruelty to Animals. He married Lucy, daughter of the Rev. John Gibson, who survives him, together with a family of four sons and two daughters.

The following lines are written by one who knew him intimately:—

"In London Sir Charles Marriott lived as a student with Sir William (then Dr.) Jenner, and from him gained a great deal of the sound clinical knowledge which stood him in good stead all his life. He gained also a genuine love for, and pride in, his profession, and he acquired an eagerness in learning it that made hard work as a student a readily accepted task, and brought him to the front rank from the beginning. He used to say that it was Sir William Jenner's example that inspired him, and that he owed to him a debt he could never repay. Sir William Jenner had a great regard for him, and between the two there was a lifelong friendship.

"As so often happens in the case of a surgeon in the full swing of his practice, he was such a busy man that it was almost impossible for him to keep full notes of his cases; it thus happens that he has contributed very slightly to surgical literature. He was, however, a very fine operator and a most excellent clinician, whose opinion upon a case was always careful, wise, and helpful, for his—what has been called—clinical instinct was remarkable, his knowledge of his profession was sound, and his judgment wonderful. He performed one of the earliest successful cases of removal of spleen, the specimen being now in the Royal College of Surgeons Museum; and at Nottingham in 1892 he showed a successful case of simultaneous ligature of the carotid and subclavian for aneurysm of the innominate at the meeting of the British Medical Association. As an example of his dexterity he was operating at the Leicester Infirmary before a large audience, and although an anæsthetic was being administered, and he was quite unaware that he was being timed, he removed the thigh, disarticulating at the hip, in 40 seconds. He watched all the wonderful benefits of the antiseptic system, and followed the directions of Lord Lister upon its introduction without cavil or hesitation, and he has sometimes said that of all the things he had lived to see in the advance of his profession, the thing which of all others gave him the greatest pleasure was the antiseptic system; and he would relate, by way of contrast, some of the horrors of the pre-antiseptic days, which now seem almost incredible. He was genial and widely beloved, but he could be very blunt if anything was not done as it should be. He was kindness itself to patients who were under his care, and invariably had their entire confidence, for he was a man whom people instinctively trusted. He was quick in getting through his work, but always avoided the appearance of hurry. He had a keen eye and a countryman's love for the country; he was a great lover of birds and a close observer of their habits. In his beautiful garden at Kibworth, where he lived for the last 26 years of his life, he would sit for hours watching them, and had many interesting stories to tell of their doings. His death will be widely mourned, and his funeral at Kibworth on Feb. 17th was very largely attended, whilst a memorial service was held in the chapel of the Leicester Infirmary, which he had faithfully served for so many years."

THOMAS KILNER CLARKE, M.A., M.B. CANTAB., M.D. DUB., F.R.C.S. ENG., J.P.,

SURGEON TO THE HUDDERSFIELD INFIRMARY.

BY the death of Dr. Thomas Kilner Clarke of Huddersfield the profession in general and the West Riding of Yorkshire in particular have lost one whose personal gifts and professional attainments gained wide recognition and a high reputation. Although in the active years of his career he was in general practice he was much more than a general practitioner. For 20 years he was the leading consultant in Huddersfield and a wide area around it. Born in 1843, Dr. Clarke was bred up to join the medical profession. His father held one of the leading practices in the town. To this at the age of 28 Dr. Clarke succeeded, and it is no reflection on the father to record how successfully the son extended the practice. Dr. Clarke came to his life's work well equipped. A Cambridge graduate and a Guy's man, with all the true disciple's affection for his old hospital and *alma mater*, he completed his studies in Paris. After serving as house physician at the London Fever Hospital, as clinical assistant at the Evelina Hospital for Sick Children, and clinical assistant at the City of London Hospital for Diseases of the Chest, he returned to Huddersfield, where his abilities were soon recognised and he was chosen for the first vacancy on the infirmary staff. He held the appointment of surgeon to the infirmary till his death.

Dr. Clarke was a hard worker, and when abdominal surgery was developing he gave himself a holiday by spending six months with Mr. Lawson Tait, then at the height of his popularity. There was no abdominal operation with which Dr. Clarke was not familiar. That he was abreast with all the latest work and well equipped in every direction is shown by the fact that he was the first English surgeon to do a successful gastro-enterostomy, while his opinion upon chest cases was widely sought by his colleagues. As a consultant and colleague he combined with an insight at once shrewd and kindly, a loyalty to his brother practitioners, a brightness of manner and a sense of responsibility which gave an added weight and charm to his ripe knowledge and skill. He possessed in a marked degree the virtue extolled by Professor Osler—*æquanimitas*. He was never flurried, always courteous, and no complication was too great, no detail too trivial for his attention. In social life he was a most entertaining and charming man. He could throw off the cares of practice, and from a wide experience of men and things in all parts of the world pour forth reminiscences and anecdotes. Withal he was a shrewd man of business—he was a Yorkshireman. In addition to the posts of certifying factory surgeon, referee under the Workmen's Compensation Acts, medical officer to the Post Office and the railway companies, Dr. Clarke had held the offices of President of the Yorkshire Branch of the British Medical Association, the West Yorkshire Medical Charitable Society, the Leeds and West Riding Medico-Chirurgical Society, and the Huddersfield Medical Society. He was also a vice-president of the North of England Gynæcological Society. Like most busy men, he did not allow the narrow trammels of his profession to limit his energies. As a magistrate, as president of the local Society for the Prevention of Cruelty to Animals, as a member of the public library and art gallery committee, and candidate (though an unsuccessful one) for a seat in the town council, he did useful public work. He was fond of sport and hunting, a good shot, and an ardent fisherman. His contributions to medical literature, though not numerous, were not confined to Britain. *La Tribune Médicale* accepted an article from him on gastro-enterostomy, whilst papers on excision of the tongue, tubercular peritonitis treated by washing out the abdominal cavity with carbolised water, cases of gastro-enterostomy, extra-uterine gestation, and venesection indicate the varied directions of his work.

He died at the comparatively early age of 66 from Bright's disease, leaving a widow but no children. To her we tender our sincere sympathy.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Franz Windscheid, extraordinary professor of nervous diseases in the University of Leipsic. He was recognised as an authority on the causation of nervous diseases by railway and other accidents. He was 48 years of age.—Dr. Emanuel Zaufal, extraordinary professor of otology in the German University of Prague, where he was the first regular teacher of that subject. He wrote a good many monographs on special methods of aural examination and on the bacteriology of diseases of the ear. He operated frequently in both nose and ear cases. He was about 73 years of age.—Dr. Sergei Botkin, the Tsar's personal physician, suddenly, after returning home from a professional call. He was the son of the eminent surgeon, Dr. Sergei Petrovich Botkin.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates have passed in Chemistry and Physics of the First Dental examination:—

A. Cohen, L. E. Egan, E. Lanigan, S. Robinson, and F. W. Watson.

The following candidates have completed the First Dental examination:—

P. B. Birmingham and L. J. Smyth.

The following candidate has passed the Final Dental examination and has been admitted a Licentiate in Dental Surgery:—

J. S. McHugh.

The examination for the Fellowship of this College is now divided into two parts—viz., the Primary (Anatomy, Physiology, and Histology) and the Final (Surgery, Surgical Anatomy, and Pathology). The examinations are held three times in each year, in the months of March, July, and November. Examinations at any other time will not be granted in any circumstances.

UNIVERSITY OF OXFORD.—Notice is given that the examination for the Diploma in Ophthalmology will commence on July 19th next at the Examination Schools. Candidates must have their names on the Medical Register of the United Kingdom, or, if they are Graduates in Medicine of a University outside the United Kingdom, must obtain the permission of the Board of Faculty of Medicine. The names of candidates will be received by the assistant registrar, University Registry, Old Clarendon Building. They must be sent in, with the requisite certificates, on forms provided by him for the purpose and to be obtained at his office, so as to reach him on or before June 30th. The statutable fee must be paid at the time of entering the name. The following have been elected to the Board of Faculty of Medicine: J. R. Magrath, D.D., Provost of Queen's College; F. A. Dixey, D.M., Fellow of Wadham College; A. L. Ormerod, New College; A. P. Dodds-Parker, B.M., Magdalen College; and W. Bruce Clarke, B.M., Pembroke College.

MEDICAL TREATMENT OF SCHOOL CHILDREN IN GREENWICH AND WOOLWICH.—The day-schools subcommittee has reported further with reference to the steps to be taken to secure medical treatment for school children in districts inaccessible from hospitals. Amongst those districts the subcommittee included Greenwich and Woolwich, and as to Greenwich an offer had come from the governing body of the Miller Hospital to provide treatment of ringworm by means of X rays for 50 children during 12 months in return for a grant of £55. The Education Committee agreed to accept the offer, the following being the more important conditions set out in the agreement between the parties: No cases shall be received for treatment except such as are found on inquiry to be from their circumstances and the nature of their disease suitable for special hospital treatment. The hours of attendance must be made to suit the convenience of the hospital. No grant shall entitle the London County Council to representation on the governing body, nor to the right of interference in any way with the work of the departments. The payment of £55 shall be accepted by the governing body in full discharge of the expenses incurred, including adequate payment for clinical assistants. On Feb 16th it was reported that the committee of Woolwich and Plumstead Cottage Hospital, Shooter's Hill, was prepared to undertake the treatment of 1000 children suffering from eye, ear, nose, and throat ailments. The hospital authorities propose, pending the erection of a new general hospital in Woolwich, to fit up an out-patient department in the centre of Woolwich for the purpose. The medical staff of the hospital would attend this department at specified times for the treatment of school children, it being understood that serious operations would be performed at the Cottage Hospital, Shooter's Hill. The terms on which the hospital authorities were prepared to undertake the work were in general agreement with those made at most of the other hospitals. It was recommended that an agreement be entered into for the treatment of not more than 1000 children during a year, beginning on April 1st 1910 and that expenditure not exceeding £200 be sanctioned for the purpose. The Council has agreed to the proposals.

SIR James Crichton-Browne, F.R.S., will preside at the annual dinner of the London School of Clinical Medicine (Post-graduate), at Princes' Restaurant, on March 15th.

WE understand that an appeal which has been made on behalf of the widow of the late Mr. C. R. B. Keetley has been well responded to. The fund already amounts to upwards of £1000. The treasurer of the fund is Dr. J. B. Ball, 12, Upper Wimpole-street, London, W.

THE London County Council on Feb. 22nd approved an increase in the salary of Dr. C. J. Thomas, assistant medical officer in the Education Department, from £700 to £750 a year, rising by one increment to £800, in recognition of his valuable original work during the last seven years.

ILLEGAL SALE OF PATENT MEDICINES.—A commission agent named Leslie Smith was charged at Birmingham on Feb. 16th with selling two bottles of patent medicines insufficiently stamped and without a licence. An Excise officer had bought the medicine for 3*s.* On one bottle there was a 3*d.* stamp instead of a 6*d.* one, and it was affixed in such a way that the medicine could be poured out without removing the stamp. In the other case the stamp was removed by hot water on Smith's premises. The magistrates who heard the case rightly took a serious view of it and inflicted a fine of £15 and costs.

THE WORKING OF THE MIDWIVES ACT.—The Local Government Board has addressed a circular to boards of guardians calling attention to the report of the recent Departmental Committee appointed to consider the working of the Midwives Act, 1902, especially as regards two points. The first concerns payments to medical practitioners summoned by midwives in cases of emergency, concerning which the committee recommends that the Act of 1902 should be amended so as to give any medical practitioner summoned by a midwife in cases of emergency "a secure expectation of payment," and that the Poor-law authority should be responsible for the fee, when the medical man cannot otherwise obtain payment, and should be empowered, if they think fit, to charge the fee paid as "relief on loan." The Board regards it as of immediate importance that medical practitioners should, so far as practicable, feel assured of a reasonable payment for their services in such cases, and desires to impress upon boards of guardians that they should give effect, if they have not already done so, to the suggestion made in the circular letter of July 29th, 1907—viz., that medical men and certified midwives practising in the Poor-law union should be informed that, as regards any poor person in whose case the attendance of a registered medical practitioner is required, the guardians will be prepared to exercise their powers under Section 2 of the Poor-law Amendment Act, 1848, and to pay a reasonable remuneration to the medical man called in. The Board thinks that any medical practitioner who makes a claim on the guardians for a fee in such a case might properly be asked to state definitely that after making reasonable efforts he had failed to secure payment from the person attended. The second point concerns the supply and training of midwives. The committee had under its consideration, in connexion with the supply of midwives, the question of the appointment of salaried midwives by the Poor-law authority; but it will be observed (paragraph 107) that they regard as preferable an extended utilisation of voluntary agencies by that authority. Reference is made in paragraph 39 of the report to the powers possessed by guardians to contribute to the support of district nursing associations. Such support should be given in return for, and in reasonable proportion to, the services rendered. The Board concurs in these conclusions, and will be prepared to give favourable consideration to any application from the guardians for sanction to such payments. In regard to midwifery training in Poor-law institutions, the Board draws the attention of guardians to the committee's view that the use of such institutions for the training of midwives "should be encouraged and, if possible, developed," and that the expediency of the further utilisation of the maternity wards in such institutions for the purpose of teaching midwifery should be impressed on boards of guardians.

FIRE AT A LIVERPOOL HOSPITAL.—An outbreak of fire occurred on Feb. 19th at the Liverpool corporation's Parkhill fever hospital, Liverpool. In spite of the efforts of the fire brigade the officers' quarters were destroyed. 20 patients had to be removed temporarily to neighbouring houses from a measles ward. No lives were lost, but the nurses' home and maids' quarters were destroyed.

THE TRAFFIC IN OLD HORSES.—At a meeting of the City of London Court of Common Council last week Mr. D. G. Collins, chairman of the Cattle Markets Committee, said that the committee had expended a good deal of money in stopping the export of worn-out and diseased horses to the continent from the City wharves during the last three years. It was now practically impossible for such a horse to enter the City without coming to the notice of the officials, and the animals exported were all in good condition and fit to travel. We believe that much has been done to mitigate a cruel and horrible evil, but from recent reports of police-court proceedings in the *Times* Mr. Collins would seem to have taken an over-hopeful view of the present state of affairs. Since Feb. 7th three men have been prosecuted in the City for the same old offence, but unfortunately only in one of them was the owner of the horse brought to book. He had to pay a fine of £3 and £1 16*s.* costs at the Guildhall, whilst Alderman Sir George Woodman discharged with a caution the man who was actually arrested leading the horse from Paddington to Fresh Wharf. A public meeting of protest against the traffic, under the chairmanship of the Duke of Portland, was held at Shoreditch on Feb. 22nd, under the auspices of the Our Dumb Friends' League.

THE AFTER-CARE ASSOCIATION.—The annual meeting of the After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane was held on Feb. 16th at the Royal College of Physicians of London, under the chairmanship of the President of the College. The chief objects of this association are to facilitate the readmission into social life of poor persons discharged recovered from asylums for the insane. 1. By obtaining for them when needful an interval of change of scene and air, often so beneficial on recovery from ordinary sickness; by boarding them out, when thought desirable, in families, in the country under proper care; or by placing them in various institutions in London and other large towns until work can be found. 2. By finding them suitable employment. 3. By giving them grants in kind or money towards maintenance while seeking work, by providing clothing, or by redeeming or procuring tools when occupation is found. The report showed that during the past year 348 applications for work from discharged patients had been dealt with. The receipts for the year were £1273, the City Companies having contributed with especial generosity. The adoption of the report was moved by the Bishop of Rochester and seconded by Dr. G. H. Savage, whilst Sir William Collins and Dr. E. M. Cooke also spoke in praise of the association before the President put the resolution to the meeting. The Bishop of Stepney, seconded by Dr. Robert Jones, moved the election of the officers, and the vote of thanks to the chairman was proposed and seconded by Dr. C. Hubert Bond and Dr. Henry Rayner (chairman of council) respectively. The secretary of the association is Mr. H. Thornbill Roxby, and the offices are in Church House, Dean's-yard, Westminster.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The New Parliament.

THE new Parliament assembled on Tuesday, Feb. 15th, the first week being spent on the preliminary business of electing a Speaker and of swearing in Members. The State opening took place on Monday, Feb. 21st, when the King read his speech from the throne. An interesting and important debate, which is still in course of progress, ensued thereon.

Retirement of Sir Walter Foster.

Sir B. Walter Foster, one of the oldest and best known representatives of the medical profession in Parliament, has resigned his seat for the Ilkeston Division of Derbyshire.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENNETT, F. G., L.S.A., has been appointed Workhouse Medical Officer and Outdoor Medical Officer to the Chapel-en-le-Frith Board of Guardians.

DAWSON, R. B., L.M.S.S.A. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Maiden Newton District of the county of Dorset.

HUGHES, E. E., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

JORDAN, N. T. K., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Manchester Royal Infirmary.

LANGDON, H. T. C., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to the Mansfield Town Council.

LAWSON, ARNOLD, F.R.C.S. Eng., L.R.C.P. Lond., M.D. Brux., has been appointed Assistant Ophthalmic Surgeon to the Middlesex Hospital.

NEWTON, C. T. H., M.B., Ch.B. Edin., has been appointed Junior House Surgeon at the Manchester Royal Infirmary.

PHILIPSON, Sir GEORGE HARE, M.D. Cantab., D.C.L., LL.D. (hon. causâ) Glasg., has been appointed Senior Pro-Vice-Chancellor of the University of Durham.

SMALLWOOD, E., M.D. Brux., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Norwood District and Medical Officer to the Home for Aged Poor, Norwood.

THOMSON, J., M.B., Ch.B. Edin., has been appointed Superintendent of the Tuberculosis Institution at Tronquille, Victoria, British Columbia.

TODD, T. W., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Honorary Ophthalmic Surgeon.

BATH ROYAL UNITED HOSPITAL.—House Physician. Salary £80 per annum, with board, lodging, and washing.

BERMONDSEY. PARISH INFIRMARY AND CASUAL WARDS, Lower-road, Rotherhithe, S.E.—Senior Assistant Medical Officer. Salary £170 per annum, with rations, washing, and apartments.

BIRMINGHAM QUEEN'S HOSPITAL.—Pathologist. Salary £100 per annum.

BIRMINGHAM UNIVERSITY, PATHOLOGICAL DEPARTMENT.—Assistant Lecturer in Pathology and Bacteriology. Salary £50 per annum.

BROMLEY, BOROUGH OF.—Temporary School Medical Officer (female). Salary at rate of £20 per calendar month.

BUENOS AYRES, BRITISH HOSPITAL.—Senior Resident Medical Officer. Also Assistant Resident Medical Officer, both unmarried. Salaries £250 and £200 per annum respectively, with board, lodging, &c.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, &c.

CANCER HOSPITAL, Fulham-road, London, S.W.—Medical Officer in Charge of Electrical Department. Salary £26 5*s.* per annum.

CARDIFF, UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Professor of Pathology and Bacteriology. Salary £450 per annum. Also Lecturer in Histology and Embryology. Salary £200 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at rate of £80 per annum, with board, lodging, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician. Salary 40 guineas per annum. Also House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

CREWE, BOROUGH OF.—Temporary Assistant to the Medical Officer of Health for three months. Salary at rate of £6 6s. per week.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board and residence.

GATESHEAD, COUNTY BOROUGH OF.—Assistant School Medical Officer. Salary £250 per annum.

HUDDERSFIELD INFIRMARY.—Senior Assistant House Surgeon. Also Junior House Surgeon. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon (female). Salary £40 per annum, with board and laundry.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician and Two House Surgeons for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL DISPENSARIES.—Head Surgeon, unmarried. Salary £170 per annum, with board and apartments.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried. Salary for first six months £40, for second six months £50.

Manchester, County Asylum, Prestwich.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

Manchester Royal Infirmary Convalescent Hospital, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.

Margate, Royal Sea Bathing Hospital.—Resident Surgeon. Salary at rate of £80 per annum, with board and residence.

Metropolitan Hospital, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salary of two former at rate of £40 per annum and of two latter at rate of £20 per annum. Also Resident Anæsthetist. Salary at rate of £80 per annum.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.—Clinical Assistants.

Norwich, Norfolk Education Committee.—Assistant Medical Officer. Salary £250 per annum.

Norwich, Norfolk and Norwich Hospital.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

Nottingham General Hospital.—Honorary Physician.

Peterborough Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing. Also Pathologist Registrar. Salary £200 per annum. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Surgeon in Charge of Out-patient Department for the Ear, Nose, and Throat.

Rochester, St. Bartholomew's Hospital.—House Physician. Salary £110 per annum, with board and residence.

Rotherham Hospital.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Hospital for Diseases of the Chest, City-road, E.C.—Honorary Dental Surgeon.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.—Physician.

Sheffield University.—Junior Demonstrator in Pathology. Salary £150 per annum.

Stafford, Staffordshire General Infirmary.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

Walsall and District Hospital.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

Walthamstow Hospital for Infectious Disease, Chingford.—Resident Medical Officer. Salary £120 per annum, with rooms and board.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

Winchester, Royal Hampshire County Hospital.—House Physician.

Wisbech, North Cambridgeshire Hospital.—Resident Medical Officer. Salary £150 per annum, with unfurnished house.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Biggar, in the county of Lanark.

Births, Marriages, and Deaths.

BIRTHS.

Legat.—On Feb. 18th, at Murray House, Staple Hill, Bristol, the wife of Dr. R. Eddowes Legat, of a son.

McMichael.—On Feb. 18th, at The Croft, Vowchurch, Hereford, the wife of Arthur W. McMichael, M.R.C.S., L.R.C.P., of a daughter.

Mortimer.—On Feb. 17th, at Hazelwell, Kirtleton-avenue, Weymouth, the wife of Fleet-Surgeon E. F. Mortimer, R.N., of a daughter.

Sheldon.—On Feb. 16th, at Cornwall-road, Notting Hill, W., the wife of Walter Sirr Sheldon, M.R.C.S., L.R.C.P., of a son.

Woodburn.—On Feb. 11th, at Theale, near Reading, the wife of W. Y. Woodburn, M.D., of a daughter.

DEATHS.

Campbell.—On Feb. 17th, at Cloncurry, North Queensland, of typhoid fever, J. Campbell, F.R.C.S.I., aged 34 years.

Eteson.—On Feb. 15th, at Longridge-road, S.W., after a few days' illness, Surgeon-General Alfred Eteson, M.D., C.B., in his 78th year.

Knox.—At Strathdene, Shepherd's Hill, Highgate, on Feb. 20th, Catherine Smith Baird, wife of Robert Knox, M.D.

Manning.—On Feb. 20th, at Laverstock, after a long illness most bravely and patiently borne, Henry John Manning, of Laverstock House, Salisbury, aged 74 years.

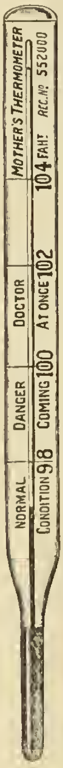
McKee.—On Feb. 22nd, 1910, at his residence, 1, Victoria-avenue, Harrogate, James Herbert McKee, M.D., eldest son of John McKee, Wyncroft, Adelaide Park, Belfast. Funeral private to Belfast.

Podmore.—On Feb. 16th, at The Cottage, South Parade, Chiswick, Robert Podmore, M.R.C.S. Eng., aged 57 years, eldest son of the Rev. Thompson Podmore, formerly of Elstree Hill School, Headmaster of Eastbourne College, and late Rector of Aston-le-Walls, Northamptonshire. Interred in Chiswick Cemetery.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A CLINICAL THERMOMETER FOR DOMESTIC USE.



The old lady who declared herself much better for the diagnostic administration of a clinical thermometer could hardly be found at the present day, and perhaps some may think that the public suffers rather from undue familiarity with that indispensable little instrument than from any dangerous ignorance concerning its functions. But there is no doubt that in the hands of a sensible person it may often be of great value in giving a warning that medical help is desirable, and this is especially the case when such a person is concerned with the health of children. The ordinary thermometer is a somewhat delicate affair, and the closeness of its graduations, together with the tenuity of its mercury column, render its reading a difficult matter to the unpractised eye. To meet this difficulty a Canadian medical man, Dr. Sévérin Lachapelle, has devised a domestic clinical thermometer in which the readings are not only reduced to the essential minimum, but the bare record of figures is amplified by terse printed cautions as to the lesson to be drawn from them. This instrument was brought to the notice of the Countess of Aberdeen in her capacity as President of the Women's National Health Association of Ireland, and she has made arrangements with Mr. Hicks, of 10, Hatton-garden, London, E.C., to manufacture and sell the instrument under the name of the "Lady Aberdeen" Maternal Clinical Thermometer. Its distinctive features are shown in the figure, and it is about six inches in length, its graduated portion having a circumference of an inch. Plain directions as to the use of the thermometer in the mouth, armpit, or rectum are issued with the instruments, and we may add that the Women's National Health Association derives a royalty from their sale. These thermometers should certainly prove a useful addition to the medicine cupboards of many nurseries, and deserve the recommendation of medical men, as they give just the information which is required by mothers.

THE ESTIMATION OF AMMONIA AND SULPHATES IN URINE.

In a paper forwarded to us by Mr. Richard Weiss, Ph.D., M.A., F.C.S., he points out that the quantitative estimation of ammonia in the urine is practically never carried out as a routine measure, because the methods at present in use are complicated and require expensive and cumbersome apparatus, yet the relation between the urea index and the amount of ammonia is of importance as throwing light upon the existence of disturbed metabolic conditions of obscure origin. The average normal percentage of urea, he says, varies from 2·25 per cent. to 2·5 per cent., and the total amount excreted in 24 hours from 25 to 30 grammes, or about 80 per cent. of the total urinary nitrogen. The normal ammonia contents of the urine are about 0·7 gramme in 24 hours, or only 3 per cent. of the total nitrogen. For its determination Mr. Weiss has constructed a special tube on the Malfatti principle. 10 cubic centimetres of urine are neutralised with decinormal solution of soda and the acidity is noted. Next 3 cubic centimetres of formaldehyde solution (40 per cent.) are added after this has been neutralised with decinormal solution of soda, phenol-phthalein being used as an indicator. When this is added the red colour will disappear, and thereupon a further quantity of decinormal solution of soda is added until the red colour is restored. The quantity of decinormal solution of soda used (after the addition of the formaldehyde) corresponds exactly with the ammonia present. The estimation of total sulphates can be done similarly in a few minutes. A specially graduated tube of a large capacity with a very narrow closed end on one side is used for the purpose. 25 cubic centimetres of urine are filtered into a beaker and 25 cubic centimetres of distilled water are added. The mixture is boiled with 5 cubic centimetres of hydrochloric acid for 10 minutes and poured into the tube. Next a hot solution of barium chloride is added which precipitates the sulphates as barium salts. The graduation marks on the tube indicate directly the amount of total sulphates contained in one litre of urine. Mr. Weiss describes further, in conjunction with Professor Salkowsky, some equally simple methods for the determination of acidity and of indican (approximately), a test for urobilin, and a method for the estimation of the amount of oxygen required by a given specimen of urine for its complete oxidation.

CHLOROFORM DROPPER-AMPOULES.

To the Editor of THE LANCET.

SIR,—Our attention has been drawn to the "New Invention" notice by you in your issue of Jan. 1st, 1910, p. 37, and we take the liberty of pointing out that this "invention" was brought out by us at Detroit about a year ago. We have pleasure in enclosing herewith a booklet on the subject issued early last year, and also an advertisement that appeared in many of the American medical journals last July and subsequently. The dropper-ampoule was introduced by us to Dr. F. H. McMechan, who is a well-known anæsthetist in Cincinnati, and no doubt he has found it so serviceable that he thinks it ought to be more widely taken advantage of.

We remain, Sir, yours faithfully,

Beak-street, W., Feb. 18th, 1910. PARKE, DAVIS, AND CO.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I have had sent to me from a temperance organisation in Sheffield a copy of a tract concerning alcohol. I have no complaint to make about the bulk of its contents, which are mostly extracts from a newspaper article written by me in reply to a criticism in that newspaper concerning an address given here by me. But at the end of the tract are five lines of description of my qualifications, &c. (information evidently obtained from the Medical Directory), and an incorrect statement as to authorship. Of the insertion of these five lines in the tract I most strongly disapprove. Until I saw the tract on Feb. 17th I knew nothing of its existence or of the organisation which published it. I at once wrote to the secretary, asking him to stop as completely as possible the circulation of the tract in its present form, and in any future copies to block out the personal paragraph to which I strongly object.

I shall esteem it a favour if you will kindly publish on my behalf this disclaimer for the information of any members of my profession who read tracts, and who might happen to see one of these.

I am, Sir, yours faithfully,

Ramsgate, Feb. 19th, 1910. G. E. HALSTEAD.

THE INTER-HOSPITAL RUGBY CUP-TIES.

First Round (continued).

MEN who played for their hospital in the "eighties" and early "nineties" would find the competition greatly changed. The colonial reinforcements with the seven-year rule have firmly established the leading schools in the narrow circle of first-class "Rugger." This is not an unmixed blessing. The struggle for the cup is now an incident, if an important one, in an arduous season.

Guy's Hospital v. *Charing Cross Hospital.*

Guy's have a lengthy and exhausting fixture list. A majority of the side have, in addition, half-a-dozen hard games with the United Hospitals against the Universities and Services, while under another name—Kent—they are at present in the semi-final of the county championship. As the season advances the danger of staleness becomes of increasing importance. And so Guy's came to this game to take things easily. With Charing Cross it was very different. For them it was the end of the season. If a man were crocked he had the summer months to mend matters. The side was all out for a win. Guy's, too, relying on combination and the finer points of the game, were greatly handicapped by the gale. They sadly missed J. P. Jones. The Kent captain is the inspiration of the side. This Welshman is a great tactician, and he means much to Guy's. "The Cross" relied on the fierce dash and speed of the forwards. Their footwork upset the superior combination of a better side. Guy's struggled hard to gain a winning lead. The tackling was too good. They were fortunate to cross over with a lead of 5 points. This was the result of a fine sprint and kick by Stokes, which must have greatly pleased his father, who was on the touch-line. Many will remember the father as one of the best backs Guy's ever had. His son is following worthily in his footsteps. After the interval "The Cross" played harder than ever, but there was no finish to their efforts. Still, Guy's supporters were relieved when late in the game Stringer swerved through all opposition and Guy's had won by 8 points to nil.

Charing Cross.—H. Smith (back); L. L. Wight, D. W. Pailthorpe, A. M. Jones, E. H. Morris (three-quarters); A. Brewster and M. A. Farr (halves); B. F. Eminson, A. B. Rosher, J. Williamson, E. S. Calthrop, G. W. Royle, J. C. Hallinan, C. Symons, and R. Rail (forwards).

Guy's.—G. E. W. Lacey (back); L. B. Stringer, H. Lee, G. C. Covell, and A. L. Stokes (three-quarters); J. G. Saner and C. H. Medlock (halves); G. R. Hind, W. E. Williams, A. H. Crook, C. Gibb, A. V. Moberly, C. S. C. Roberts, W. S. Stranach, and R. S. Kennedy (forwards).

Middlesex Hospital v. *St. Thomas's Hospital.*

Possibly it was a coincidence that this game, the best of the series to date, attracted the biggest crowd to Richmond. There were no internationals, no individual brilliance, only the promise of a hard and equal fight. And this was fulfilled to the letter. It was real football. The individual buried in the side. The zest and keenness of the whole thing was good to see and no one spared himself.

The Middlesex three-quarter line is serviceable in attack. Last year these strong runners carried the side through stiff rounds to the final. If chances came their way it was felt that they might do so again. Thomas's, on the other hand, well aware of this danger, relied on their pack to break up the attack and to chance individualism to settle the issue. And so early in the game one saw a great struggle for mastery in the scrum. At first the Middlesex forwards held the Thomas's pack, and then one caught glimpses of the excellence of Gabe and Penny. Soon the Thomas's forwards took charge of the game. They were well supported at half. The day went in favour of the side with the pack in the scrum. Then in the second half Middlesex, only 2 points behind, with a strong wind helping and plenty of scoring power, seemed to have a chance of turning the tide. But the Thomas's forwards came again and won the game on their own. The final score, 13 points to 8, is a fairly accurate estimate of the superiority of Thomas's in the scrum.

St. Thomas's.—L. Meakin (back), J. Jeppe, F. B. Skrimshire, C. W. Sparks, J. J. Street (three-quarters), Ll. R. Warburton and H. R. Friedlander (halves), W. G. Marsden, J. F. Taylor, J. S. Sloper, R. C. Wingfield, R. P. F. Cory, H. V. Welch, H. C. Bassett, and G. R. Wilson (forwards).

Middlesex.—C. Proctor (back), J. Rogers, E. A. Saunders, W. M. Penny, and H. W. Gabe (three-quarters), G. R. Craig and A. L. Rackam (halves), J. Harrison, A. B. Cardew, W. H. Saunders, W. G. Masefield, W. H. Eggar, E. R. Dearmer, G. M. Tuke, and R. Fagan (forwards).

"INGRATITUDE."

To the Editor of THE LANCET.

SIR,—In your issue of Feb. 19th you called our attention to the ingratitude of Dixon, who stole a purse belonging to the physician whose mind was fixed on Dixon's moribund baby. Before your readers can draw any just conclusion from the paragraph on this "disgusting exhibition of human ingratitude" they must know something of the individual Dixon and of the circumstances which so curiously converted "gratitude" into "mean theft."

We most of us remember the acquittal of the hungry man who dashed into a baker's shop and stole a loaf of bread without the least sign of gratitude to the baker who had been up all night exercising his art. If this parallel does not apply to Dixon, I know that it applies to a very large percentage of the men who bring moribund babies to the Royal Free Hospital every winter. The superabundance of riches implied in the leaving of *two* purses on the table is enough to put a millionaire's will-power in abeyance! What is, however, the remedy for such ingratitude? As a modern physician my mind reverts to prophylaxis. A simple measure is the provision of ample pocket space for women physicians. Another not quite so simple has been alluded to in THE LANCET. It lies in the prevention of destitution through the adoption of the proposals set forth in the Minority Report of the Poor-law Commission.

If all the preventive measures set forth in the Report had been set working in the year 1877 Mrs. Dixon, instead of scouring flagstones at 2*s.* 6*d.* a day, would herself have brought a healthy breast-fed baby to the Royal Free Hospital for some slight indisposition. This would not have upset the house physician's equanimity, and Mr. Dixon, instead of living on the country's rates and taxes, would have come in an off hour from work and dropped a coin of gratitude into the Royal Free Hospital collecting box. I am, Sir, yours faithfully,

M. F. T.

WANTED—TREATMENT FOR HEADACHE.

Cambria will be much obliged for any suggestions as to cause and treatment in the following case. A male patient, aged 65 years, suffers from headache on waking from sleep. He has no evidence of kidney disease or arterial sclerosis. He has a mitral systolic murmur, but no recent rheumatism. He is a hard-worked successful business man, with occasional slight nervous breakdowns, but his headache occurs on waking, and has done so for five years, whatever his general condition. He is a nose-breather, but has a deflected septum and a nasal spur. The headache does not depend on position, and it occurs equally after lying down in bed or sleeping in an upright position in a chair.

AN EXPLOSIVE COUGH MIXTURE.

Practitioner writes:—"Would some one of your readers be kind enough to inform me what is it that makes a cough mixture having for its menstruum mist. amygdal. co. sometimes blow up, and what can be done to prevent such an untoward occurrence? I may add that the mixture consisted of squill, 'hippo,' morphia, and nitrous ether."

PSYCHO-PHYSICAL PARALLELISM.

F. G. C. writes:—"It may perhaps interest some of your readers to note that in the *Journal of Mental Science* for January, 1906, there was a paper on the Study of Insanity, in which reference is made to the study of psycho-physical parallelism on the lines elaborated by Lugaro in his work reviewed in your columns last week."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—D. P. Gabell, E. B. Dowsett, J. Howard Mummery): at 8 P.M.

Paper :

Mr. Stanley P. Mummery: Some Experiments on the Relative Susceptibility of Different Teeth to Dental Caries.

Casual Communications :

Mr. Charles A. Clark: (1) A Sterilizable Film-holder for X Ray Work; (2) A Method of Ascertaining the Relative Position of Unerupted Teeth by Means of Film Radiographs.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Adjourned Discussion :

On Proprietary, Patent, and Secret Remedies (opened by Prof. W. E. Dixon on Feb. 1st).

Paper :

Dr. John Cowan: The Treatment of Infective Endocarditis.

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton) at King's College, W.C.: at 8.30 P.M.

Laboratory Meeting.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler).

Cases and Specimens.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 P.M.

Discussion :

On the Choice of an Anæsthetic (opened by Dr. Dudley Buxton).

SATURDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Hunter F. Tod, H. J. Marriage): at 10 A.M.

Cases and Specimens :

Mr. A. H. Cheatle: Twenty Specimens of Chronic Middle Ear Suppuration and its Sequelæ.

Mr. W. Milligan: (1) Pedunculated Papilliform Growth springing from the Posterior Border of the Cartilaginous Meatus; (2) Large Naso-pharyngeal Growth in a Boy; (3) Demonstration of Kuhn's Instruments for Per-oral Intubation.

Dr. Dan McKenzie: (1) Case with Well-defined and Transitory Menières Symptoms; (2) ? Othæmatoma.

Dr. Alexander Sharp: Audible Tinnitus.

Mr. J. Arnold Jones: Mucous Polypus Presenting at the Pharyngeal Orifice of the Left Eustachian Tube in a Man Suffering from Bilateral Chronic Adhesive Otitis Media.

Mr. Hunter Tod: (1) Osteo-myelitis of Temporal Bone; (2) Subdural Abscess and Encephalitis of Left Temporo-sphenoidal Lobe, with Aphasia.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Sir John Broadbent, Bart., M.D.: Some Difficulties in Prognosis in Cases of Atypical Pyrexia in Pneumonia in Adults.—Dr. R. Miller: On Some Cases of Protracted Pyrexia in Pneumonia in Children.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on Labour in Contracted Pelves, with Special Reference to the Justification of Pubiotomy (opened by Dr. G. F. Blacker).

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Mr. C. A. Clark: Dental X Ray Technique. Exhibition of Apparatus.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Dr. J. S. Bolton: A Contribution to the Localisation of Cerebral Function, based on the Clinico-Pathological Study of Mental Disease. (Goulstonian Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY AND WEDNESDAY.—5 P.M., Dr. P. Thompson: Some Embryological Problems in Relation to Medicine.

FRIDAY.—5 P.M., Prof. R. H. Paramore: The Functions of the Pelvic Floor Musculature, and its Relation to, and Co-ordination with, the other Musculatures enclosing the Visceral Mass.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Mr. A. W. Mayo Robson: The Surgical Treatment of Certain Cases of Glycosuria

TUESDAY.—4 P.M., Dr. L. Guthrie: Clinique (Medical). 5.15 P.M., Lecture:—Mr. E. L. Evans: The Manipulative Treatment of Congenital Dislocation of the Hip.

WEDNESDAY.—4 P.M., Mr. A. P. Gould: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. F. Bashford: The Results of Experimental Cancer Research.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture—Mr. C. Dent: After-effects of Head Injuries.

FRIDAY.—4 P.M., Mr. H. Tod: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eyes. 5 P.M., Lecture:—Mr. Ll. Williams: Examination and Treatment of Children's Teeth.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Cerebral Hæmorrhage.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. R. Morton: X Ray Diagnosis.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eyes. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Etherington Smith: Clinical.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eyes. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Mr. J. H. Evans: Some Points in the Surgery of the Aged.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie)

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 P.M., Special Lecture:—Mr. R. Lake: Operations in Tubercle of Larynx.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless: Actinomycosis.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Ophthalmoscopic Appearances in Typical Diseases of the Fundus Oculi.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Peripheral Neuritis

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

THURSDAY.—4.30 P.M., Clinical Lecture:—Mr. G. French: Suppuration of the Accessory Sinuses.

FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. C. Wallis: Stricture (Non-malignant).

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Fungus Diseases of Hair: I., Hyphogenic Sycosis; II., Tinea.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 23rd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 17	29·39	S.W.	0·05	85	56	37	50	50	Raining
,, 18	29·41	S.W.	0·10	70	53	48	47	48	Cloudy
,, 19	29·16	S.W.	0·05	77	53	46	48	51	Overcast
,, 20	29·35	W.	...	74	50	43	43	46	Fine
,, 21	29·36	S.W.	0·25	85	51	45	42	45	Fine
,, 22	29·75	S.W.	...	52	48	43	45	46	Overcast
,, 23	29·83	S.W.	0·40	61	46	41	41	41	Overcast

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.: Apollinaris Co., Lond.; Mr. Thomas Allen, Towyn; Dr. R. Ackerley, Llandrindod Wells; Miss Adams, St. Leonards-on-Sea; Dr. J. F. Allen, Pietermaritzburg.

B.—Messrs. Blundell and Rigby, Lond.; *Burton Chronicle*, Manager of; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Mr. J. E. L. Bates, Lond.; Dr. F. G. Bushnell, Worthing; The Bayer Co., Lond.; Mr. E. Bougault, Paris; Messrs. Broadhent and Co., Huddersfield; Messrs. Bennett Bros., Salisbury; Mr. F. A. Brockhaus, Lond.; Mr. Arthur Buck, Brighton; Dr. C. Hubert Bond, Epsom; Mr. Archibald Blair, Newport, Monmouthshire; Bausch and Lomb Optical Co., Lond.; Mr. E. Stanmore Bishop, Manchester; Board of Trade (Marine Department), Lond.; Buenos Aires Exhibitions, Lond., British Commissioner for the.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Cumberland County Council, Carlisle, Clerk to the; Mr. D. Cronin, Mallow; Central London Throat and Ear Hospital, Secretary of; Cooper Laboratory for Economic Research, Watford; Dr. F. Charlesworth, Boscombe; Crewe Corporation, Medical Officer of Health of; Cumberland Infirmary, Carlisle, Secretary of; Cambria; Dr. H. W. Crowe, Davos; Messrs. J. and J. Colman, Norwich; Messrs. J. and A. Churchill, Lond.; County Asylum, Prestwich, Clerk to the; Messrs. Clarke, Son, and Platt, Lond.; Messrs. Chevretin and Lematte, Paris; The Christian Union, Lond.; Mr. Francis W. E. Clark, Edgware; Chelsea Clinical Society; Mr. R. A. Caldwell, Bournemouth.

D.—Mrs. F. H. Driver, Bristol; Mr. Fred. W. Doebeli, Basle; Down District Lunatic Asylum, Downpatrick, Medical Superintendent of; Hofrat Dr. H. Determann, Freiburg i-B.; Dr. Andrew Dunlop, St. Heliers; Miss M. Dowling, Lond.; Dr. E. Dos, Meridi.

E.—Dr. Kenneth Eckenstein, Bordeaux; Dr. W. Edgecombe, Harrogate; Dr. C. C. Easterbrook, Dumfries.

F.—Mrs. Forster, Chathill.

G.—Mr. R. G. Godbole, Panna; Dr. A. G. Gibson, Oxford; Mr. E. S. Gooddy, Llandudno; Dr. A. H. Gerrard, Croydon; Messrs. Gething and Co., Lond.; Gt. Eastern Railway Co., Lond., Continental Traffic Manager of; Messrs. Guyot, Guenin, and Sons, Lond.; Gateshead Education Committee, Secretary of; Mr. Ernest W. Hey Groves, Clifton.

H.—Dr. E. R. Hunt, Brighton; Dr. John Henderson, Glasgow; Mr. G. O. Henninger, Lond.; Miss G. Hertz, Stockholm; Messrs. H. D. Hardie and Co., Glasgow; Mr. Charles T. G. Haigh, Colne Bridge; H. S. C.

I.—Messrs. Ingram and Royle, Lond.; Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-Minded, Manchester, Hon. Secretary of.

J.—Mr. L. J. Jarvis, Lond.; Mr. John Jackson, Lond.: Mrs. Jeremy, Bournemouth; Dr. J. Hervey Jones, Rickmansworth.

K.—Messrs. R. A. Knight and Co., Lond.; Mr. H. Kimpton, Lond.; Messrs. Kutnow and Co., Lond.; Mr. G. W. Kidd, Newcastle-on-Tyne; Kumbakonam District, India, Chairman of Municipal Council.

L.—Dr. Jean Lépine, Lyon; Dr. G. Stirling Landon, Carshalton; Messrs. Lee and Nightingale, Liverpool; Mr. J. Limbrick, Lond.; Mr. T. Laffan, Cashel; Miss L; Messrs. Leathwait and Simmons, Lond.; Dr. N. Leonard, Lond.

M.—Mr. F. A. Mori, Lond.; Mr. J. E. R. McDonagh, Lond.; Messrs. Meister, Lucius, and Brüning, Hoechst; Mr. S. H. Modi, Bombay; Manchester Medical Agency, Secretary of; Manchester Royal Infirmary, Secretary of; Middlesex Hospital, Lond., Secretary-Superintendent of; Dr. F. Hyde Maberley, Crosshaven; Mr. Thomas McLean, Lond.; Dr. John C. McVail, Lond.; Mr. Reginald M. Moore, Lond.; Dr. J. Keogh Murphy, Lond.; Mr. A. G. Mambray, Dover; Messrs. Mentzendorff and Co., Lond.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; North-East London Clinical Society, Secretary of; Dr. J. T. C. Nash, Norwich; Nottingham General Hospital, Secretary of.

O.—Dr. C. Ormerod, Croydon; Sir Lambert Ormsby, Dublin; Messrs. Osborne, Peacock and Co., Manchester; Dr. G. Olano, Lima; Dr. H. O'Neill, Belfast; Mr. Robert Ollerenshaw, Manchester; Owner, Bournemouth.

P.—Messrs. Peacock and Hadley, Lond.; Mr. H. J. Paterson, Lond.; Dr. A. Parkin, Newcastle-on-Tyne; Peterborough Infirmary, Secretary of; Messrs. Parke, Davis, and Co., Lond.

R.—Royal College of Surgeons in Ireland, Dublin, Registrar of; Royal Westminster Ophthalmic Hospital, Secretary of; Mr. Cecil Revis, Lond.; Dr. Charles Russ, Lond.

S.—Dr. F. M. Sandwith, Lond.; Dr. G. Steele-Perkins, Lond.; Messrs. Spiers and Pond, Lond.; Messrs. Squire and Sons, Lond.; Messrs. H. B. Sleeman and Co., Lond.; Mr. H. Saunion, Lond.; Scholastic, Clerical, &c., Association, Lond.; *South Wales Argus*, Newport, Manager of; Smith's Advertising Agency, Lond.; Schweppes, Ltd., Lond.; Dr. R. Sinclair, Dundee.

T.—Mr. J. Thin, Edinburgh; T. J. S. B.; Dr. John Thresh, Lond.; Mr. H. Tilley, Lond.; Thames Ironworks Co., Lond.; Mr. C. Louis Taylor, Lond.; Dr. J. Ashburton Thompson, Sydney; Messrs. Thomas Tyrer and Co., Lond.

U.—University of Wales, Cardiff, Registrar of; University of London Officers Training Corps.

V.—Messrs. Vigot Frères, Paris; Messrs. Van Houten, Lond.; Victoria Children's Hospital, Hull, Assistant Secretary of; *Votes for Women*, Lond., Editors of.

W.—Dr. J. P. Walker, Basingstoke; Mr. W. Roger Williams, Morven; West Norfolk and Lynn Hospital, Secretary of; Woodhall Spa Co., Woodhall Spa, Secretary of; Mr. F. L. Wilson, Lond.; Messrs. W. Wood and Co., New York; Mr. C. Gordon Watson, Lond.; Dr. W. B. Warrington, Liverpool; West-End Hospital for Nervous Diseases, Lond., Secretary of; White Hart Hotel, Margate, Director of; Messrs. F. Williams and Co., Lond.; Warrington Infirmary, Secretary of.

Y.—Messrs. R. Young and Co., Glasgow; York, Medical Officer of Health of.

Z.—Zeitungs-Auschnitte "Alles Leser," Vienna.

Letters, each with enclosure, are also acknowledged from—

A.—Aston Union, Clerk to the; Dr. J. E. Adams, Lond.; A. H. G.; A. D.; A. H. S.

B.—Dr. J. A. Berlyn, Edgbaston; Dr. L. H. Bennett, Paignton; Messrs. Bash and Co., Lond.; Mr. H. Brice, Exeter; Dr. A. D. Brunwin, Rayne; British Diamalt Co., Lond.; Dr. J. H. Bletsoe, Upminster; Beckett Hospital, Barnsley, Hon. Secretary of.

C.—Dr. T. Colvin, Glasgow; Mr. G. H. Colt, Aberdeen; Mr. W. F. Cooper, Watford; Messrs. T. Cook and Son, Lond.; Dr. F. B. Croucher, Penang; Messrs. Catchpole and Sons, Lond.

D. Messrs. B. Davies and Sons, Lond.; Professor S. Delépine, Manchester; Lieutenant A. H. F. Davis, R.A.M.C., Bangalore.

E.—E. M. L.; E. R. M.; E. E.

F.—Mr. J. Fitzgerald, Queenstown: Major H. C. French, R.A.M.C., Malta.

G.—Mr. H. Gonnell, Caerleon; Glamorgan County Council, Education Committee, Cardiff, Accountant to the; G. W.; Messrs. Grindlay, Groom, and Co., Bombay; Messrs. Gardiner and Co., Wisbech.

H.—Dr. J. B. Hall, Bradford; Mr. J. Heywood, Manchester; Hoffmann La Roche Chemical Works, Lond.; Captain A. E. Hastings, R.A.M.C., Allahabad; Mr. W. L. Hampton, Perth; Dr. W. Hunter, Lond.; H. A. K.

I.—Imperial Accident Insurance Co., Lond., Secretary of; Ilford, Ltd., Lond.; Invernith Lodge Retreat, Colinsburgh, Medical Superintendent of.

J.—Dr. J. Jackson, Wigan; Jeyes' Sanitary Compounds Co., Lond.; Mr. E. M. Judge, Chislehurst; Messrs. Jowett and Sowry, Halifax; J. H.; J. K. F.; Mr. Y. M. Jones-Humphreys, Cemmaes

K.—Mr. F. J. Kenay, Darjeeling; Messrs. Koidzumi and Co., Kyoto; Miss Keir, Wick; Kettering and District General Hospital, Matron of.

L.—Mr. H. K. Lewis, Lond.; Leeds Corporation, Clerk to the; Liverpool Stanley Hospital, Secretary of; Mr. A. Lawson, Lond.; L. E. G. D. F.; Leith Hospital, Treasurer to the.

M.—Dr. J. Muller, Bellshill; Dr. R. Miller, Lond.; Messrs. Menzies and Co., Edinburgh; Dr. A. C. B. McMurtrie, Lond.; Dr. J. Mason, Lond.; Mr. R. Mosse, Berlin; Mr. E. Merck, Lond.; Mr. A. Maloine, Paris; Dr. K. Manson, Southampton; Mr. A. Minford, Templepatrick; Maltine Manufacturing Co., Lond.; Maternity Nursing Association, Lond., Matron of.

N.—Mrs. H. S. Noakes, Dublin.

P.—Surgeon-Lieutenant-Colonel D. N. Parakh, I.M.S., Poona; Mr. A. Pemberton, Manchester; Portsmouth Lunatic Asylum, Clerk to the; Prince of Wales's General Hospital, Tottenham, Director of.

Q—Queen's University, Belfast, Bursar of.

R.—Mrs. Ranken, Byfield; Royal Southern Hospital, Liverpool, Secretary of; Mrs. Risdon, Lond.

S.—Mr. F. C. Shardlow, Leicester; Messrs. R. Sumner and Co., Liverpool; Professor Elliott Smith, Manchester; Sunnydene, Lee; Mr. A. A. Swan, Lond.; St. Mary's Hospital for Women and Children, Lond., Secretary of; Smedley's Hydro, Matlock, Director of; Mr. R. Svensson, Coatham; Mr. G. Steinheil, Paris; Dr. S.

T.—Dr. J. Taylor, Lond.; T. L.; Mrs. Thwaites, Lond.;

U.—University College, Dundee, Factor of.

V.—Mr. J. T. Vulliamy, Rugby.

W.—Mr. V. Whitgreave, Penzance; Mr. R. S. Walker, Kingussie; Mr. W. M. Williams, Trefriw; Dr. W. Webster, Newcastle, Staffordshire; Dr. S. West, Lond.; Dr. W. D. Wilkins, Benenden; Dr. F. Parkes Weber, Lond.; Miss G. Williams, Lond.

Y.—Mr. C. A. Young, Atherstone.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

A Lecture

ON

THE ÆSTHETICS OF ANÆSTHETICS.

Delivered at the London Hospital on Feb. 25th, 1910,

BY FREDERIC W. HEWITT, M.V.O., M.A., M.D. CANTAB.,

CONSULTING ANÆSTHETIST AND EMERITUS LECTURER ON ANÆSTHETICS AT THE HOSPITAL; PHYSICIAN-ANÆSTHETIST TO ST. GEORGE'S HOSPITAL.

GENTLEMEN,—The somewhat paradoxical title which I have ventured to choose for this lecture needs, perhaps, a little explanation. If by the term anæsthetics we mean to imply those agents which are capable of producing either a generalised or a localised insensibility to pain during surgical procedures it is perhaps difficult to imagine how these anæsthetics can possess any æsthetic attributes or associations. But I shall hope to show you that in administering anæsthetics, whether for minor or for major operations, there is an opportunity—I had almost said a necessity—for the exercise of æsthetics. I hope to prove to you, indeed, that the more grave and distressing the case requiring our services the greater is the need for the exercise of æsthetic principles and details in anæsthetisation. Let us first of all be clear as to what we mean by æsthetics. Æsthetics may, perhaps, best be defined as the science by which the artist deduces from nature and taste the rules and principles of the art he practises. But are we entitled, you may ask, to regard the administrator of an anæsthetic as an artist? My reply to this criticism is that it is perfectly possible for us, in the interests of those who place themselves in our hands for the prevention of pain, not only to make ourselves artists in this branch of practice, but to go farther than this and to attempt to bring the art of anæsthetising up to such a standard that, like other arts, it may be practised with æsthetic perception. Have we not, in fact, as administrators of anæsthetics, an almost ideal field for the exercise of the science of æsthetics? Our immediate predecessors have handed down to us the marvellous discovery of the means of rendering suffering humanity absolutely oblivious to the procedures of the surgeon; we have, at our command, the most varied methods of rendering patients unconscious; and we have, as our subjects, those who, from the very nature of the circumstances in which, unhappily, they find themselves placed, are most likely to appreciate the various niceties, if I may so term them, of the art of anæsthetising. Only those who have undergone surgical operations can fully realise the importance of attending to the numerous points to which I now propose to draw your attention.

The first proposition I would submit to you is that, in the interests of our patients, generalised anæsthesia, with its attendant unconsciousness of all the surroundings of a surgical operation, is immeasurably preferable to local or regional anæsthesia, and that it is to developments in the former system rather than to those in the latter that we should devote our attention if we wish to bring the science of surgical anæsthesia up to its legitimate level. I take it to be one of the principal duties of the medical man to treat his patients in such a way that they are subjected during that treatment to the very minimum of mental and physical distress. I do not deny that under certain exceptional circumstances—as, for example, when a general anæsthetic cannot safely be given, when the patient has an invincible horror of being rendered unconscious, or when a medical man is single-handed—there may be a good reason for preferring a local to a general anæsthetic. But when, as is fortunately the case in this country, we have at our disposal safe and efficient methods of producing general anæsthesia, and when, as is also the case, we are continuously sending out into practice men who have been properly educated in such methods, are we fulfilling our duties to our patients in countenancing for routine use the analgesic as opposed to the anæsthetic system of pain prevention? Are we taking into account, moreover, that important aspect of the question—hardly admitting of consideration on this occasion—the special risks of spinal analgesia? I submit that we should be departing from the great traditions of our profession in replacing general by local anæsthesia for routine use. The fascinating novelty of spinal analgesia, its advantages to the surgeon in abdominal and certain other operations, and its undoubted success in a large proportion of the cases in which it has been employed, are doubtless weighty considerations. But do its supporters think sufficiently of the acute mental disturbance with which its employment is generally associated? I have myself witnessed, particularly in children, such pitiable apprehension and terror in connexion with spinal analgesic methods as to satisfy me that, at all events as at present practised, such methods belong rather to the pre-anæsthetic than to the anæsthetic period of modern surgery. Not long ago I witnessed what was to me a most distressing sight in the theatre of one of our leading hospitals. A patient who had been kept waiting for some time in the anæsthetising room prior to a rectal operation under spinal analgesia was wheeled into a crowded theatre. He was literally blue from fright, and the surgeon who was deliberately measuring the quantity of fluid to be injected was at the same time remarking on the cyanotic colour of the face of his patient. The first attempt to introduce the needle failed and it had to be withdrawn and re-introduced, a proceeding which was obviously painful although of short duration. The patient then vomited. It is only fair to say that the subsequent anæsthesia was perfect, but the cyanosis and mental distress persisted and convinced me that whatever might be the merits of the method, there was something almost inhuman in its application. Upon the Continent, where general anæsthesia is not so fully developed as in this country and where, as a result, accidents and unsatisfactory experiences are far more common, it is not surprising that intra-spinal and other methods of local anæsthetisation should have obtained such a firm foothold. I cannot help thinking, too, that there are some surgeons who, being comparatively deficient in sensitiveness and accepting surgery and its various procedures as necessarily unpleasant, fail to realise the necessity of reducing or of preventing as far as possible all mental as well as all physical pain in the exercise of their professional services. To professional men of this type a novel method of anæsthesia may appeal with no small force, even if the means by which it is applied are not altogether unattended by distress to their patients. Patients themselves are, as a rule, the worst judges of the respective merits of rival therapeutic systems, and in the case of the two systems under consideration they can hardly be expected to pronounce decisions unless, as is rarely if ever the case, they have experienced both for precisely similar operations performed under precisely similar conditions except as regards the nature of the anæsthesia. The presence of normal consciousness during the preparation of the part to be operated upon, during the introduction and possibly the re-introduction of the needle of the syringe, and during the operation itself, attended as it may be by unforeseen difficulties possibly demanding consultations between those engaged in the operation, is by no means free from grave objections. A comparison between properly organised general anæsthesia on the one hand and spinal analgesia on the other seems to me to leave no doubt whatever as to which is the more humane—the more æsthetic process. The great advances that have taken place in general anæsthesia in this country during the past 20 or 30 years clearly indicate that it is in developing and elaborating the principles of that form of anæsthesia that our energies should be concentrated.

My second proposition is that by attention to certain comparatively minor details the passage of patients into and out of the state of unconsciousness may, in the vast majority of cases, be deprived of all mental and physical distress. I will not go so far as to say that it is possible to give every patient the pleasurable experiences which a late distinguished novelist and poet—a patient of mine—described as "the beatitudes of insensibility"; but I am convinced that many, and perhaps most, of the discomforts which one often hears attributed to general anæsthetics should in reality be attributed to a want of appreciation of certain details to which I shall to-day refer. I do not propose to deal at any length with the technical principles of anæsthetisation—the selection of appropriate anæsthetics, the adjustment of gas or vapour percentages to meet the special requirements of each case, the avoidance of the slightest auto-asphyxial condition, &c. These principles, although undoubtedly contributory to the patient's comfort, particularly after anæsthetisation, are more especially intended to provide for his safety. I am to-day concerned with those details which collectively make for mental tranquillity and comfort during and after the administration of general anæsthetics.

One of the first duties of the anæsthetist is to treat all patients, whether they be of the sensitive or of the phlegmatic type, whether they be of the amenable or of the cross-grained class, with the utmost consideration, kindness, and tact. Discourtesy on the part of a patient—nay, even actual rudeness—may be but the expression of an overwrought nervous system. Whenever possible it is a distinct advantage to see patients and to examine them before the time appointed for the operation. This is particularly the case when a patient is exceedingly apprehensive with regard to the anæsthetic, or when there is some grave respiratory, circulatory, or other condition which may complicate the anæsthesia. It is practically impossible to obtain a correct estimate of the patient's condition and of the best method of procedure when one sees him for the first time lying upon the operating table surrounded by surgeons and nurses prepared and waiting for their respective duties. By seeing a patient a day or two beforehand the important question of the diet can be settled and final injunctions issued against the reprehensible but prevalent practice of giving the patient tea, beef tea, &c., three hours before the operation. The question of the preliminary use of morphine and atropine can also be considered. During the past two years I have used these drugs (generally ¼ grain of morphine and 1-120th grain of atropine 20 to 30 minutes before the anæsthetic) with great advantage, particularly in abdominal cases. The indifferent and rather sleepy condition brought about by the morphine is a great boon to apprehensive patients; abdominal relaxation may generally be secured, even in muscular men, with less anæsthetic than usual; the secretion of mucus during anæsthesia is almost wholly prevented, and the patient passes through the first portion of the otherwise painful post-operative period in comfort. I am still undecided as to whether the preliminary use of these drugs increases or diminishes post-anæsthetic vomiting. For operations before 10 or 10.30 A.M. absolutely nothing should be given after a light dinner the evening before. There should be both a nominal and an actual hour appointed for the operation so as to spare the patient as much suspense as possible. Thus, if it be intended to commence the *anæsthetic* at 9 A.M. the patient should be told what will in all probability prove to be the fact—namely, that the *operation* is to be at 9.30. By this venial deception he will be spared nearly half an hour's anticipation. Unpunctuality generally spells want of consideration, and, save in the most exceptional circumstances, is unpardonable. The anæsthetist should invariably be in attendance a quarter of an hour before the hour fixed in order to make the acquaintance of his patient, prepare the necessary apparatus out of sight of the patient, and wash, or otherwise prepare, his hands.

It is to be regretted that in their laudable desire to conform to the ever-increasing demands of aseptic principles many surgeons altogether lose sight of the disquieting effects which their methods of applying those principles may have upon patients, and particularly upon nervous patients. I have on numerous occasions seen sensitive and apprehensive subjects about to undergo formidable operations absolutely appalled at the sight presented to them on entering a well-equipped operating theatre, with its blaze of electric light, its complicated and comfortless operating table, its suggestive foot-baths beneath the table, its equally suggestive red tiled floor, its hissing sterilisers, its trays of glistening instruments, and its small army of surgeons, assistants, and nurses, all masked, gloved, and gowned in accordance with the latest dictates of science. I do not for one moment desire to belittle the precautions and preparations of the modern surgeon. My point is that it is unnecessary—I had almost said barbarous—to bring those precautions and preparations prominently before patients about to undergo operations. When the operation is to take place in a theatre the most considerate plan is to anæsthetise the patient in an adjacent room, preferably upon the operating table itself, disguised as far as possible with sheets and blankets, and when anæsthesia has been secured, to wheel the patient into the theatre where everything has been prepared. I would venture to assert that every operating theatre should have its anæsthetising room. If it be necessary to anæsthetise the patient in the theatre itself everything likely to engender alarm should if possible be screened off or covered up and the surgeon and his assistants, if enveloped in their operating gowns and masks, should be out of sight. In private houses and in nursing homes possessing no theatre the patient's bedroom is generally chosen for the operation. Under such circumstances he should, during the necessary preparations, either remain in some other room or his bed should be screened off. It is sometimes a good plan, particularly when dealing with a highly nervous subject, to anæsthetise him in his bed whilst the surgeon and his assistants are quietly making their preparations in an adjoining room. Directly consciousness has been destroyed the various surgical appliances are brought in and the patient is carefully transferred from his bed to the operating table. The contrast between this considerate plan and the others which I have indicated is sufficiently obvious to render further remarks unnecessary.

It is generally left to the anæsthetist to place patients in position for the administration of anæsthetics. Speaking generally, every endeavour should be made to meet the patient's particular wishes as regards the initial posture, so that he may feel as comfortable as possible during the inhalation period. There is no reason whatever why the operating table should not be furnished, at all events during the induction period, with comfortable pillows, a soft mattress, and well-warmed sheets and blankets. A plentiful supply of pillows should always be in readiness. I once had to anæsthetise a very fussy patient who always required 19 pillows of various sizes adjusted in certain definite positions before she could compose herself for natural sleep, and it was necessary to go through the process of adjusting each pillow in its particular position before she would submit to artificial sleep. As the patient lies down upon the operating table he should be covered with previously warmed blankets. When the lithotomy posture is contemplated the strap of Clover's crutch should be placed out of sight under the pillow and the patient anæsthetised lying upon two draw-sheets. By sliding the upper sheet over the lower the whole body with the pillow and strap may with the greatest ease be moved towards the end of the table and the desired posture secured without any of that jolting which so often disturbs respiration and hence the smoothness of anæsthesia. Care should be taken in adjusting leg straps in rectal and gynæcological surgery lest nerves or brittle vessels be damaged. Curiously enough, there are still some nurses who seem to think it necessary to provide unfortunate patients about to be operated upon with the hardest of operating tables, covered with the coldest of mackintoshes, and furnished with the thinnest and most uncomfortable of pillows. To place a cold mackintosh for a patient to lie upon is to be guilty of a surgical misdemeanour. This brings me to the important subject of preserving the bodily heat during and after operations under general anæsthetics. All unnecessary cutaneous exposure should rigidly be avoided. Feeble subjects and children should previously be encased in extemporised garments of cotton wool. If a hot water bed be used the temperature of the water should be only just above blood heat. In all cases the operating table should be well warmed by hot water bottles before the patient lies upon it, and great care should be taken to see that the bottles are then removed. I have heard of several instances of extensive burns resulting from a want of this precaution. During the operation the bed into which the patient will subsequently be moved should also thoroughly be warmed and covered with a full complement of clothes till the very second that he is transferred from the table to the bed. The curious custom of exposing one-half of the bed throughout the operation still obtains. Immediately the operation is over the patient should be placed in the warmed bed and the hot-water bottles removed. The importance of this last-named point cannot be over-estimated. I have, in my experience, heard of at least a hundred cases of more or less serious burns due to inattention to this point. The rule that should be followed is that under no circumstances should a hot-water bottle be placed in bed with an unconscious patient. Although the anæsthetist may incur the displeasure of the nurse he should, I think, always make a point, before he leaves his patient, of searching for and removing all hot-water bottles.

During the induction of anæsthesia all talking, turning on of taps, clinking of instruments, clattering of basins, and banging of doors should studiously be avoided. Laughter, story-telling, and irrelevant talk, just as the patient is becoming unconscious are particularly indicative of that want of consideration for the feelings of others which is, I regret to say, one of the characteristics of modern life. I know of a case in which, just as a patient was losing consciousness, prior to the removal of an eye, and whilst he was quite unable to make any movement, he heard the words, "Which eye is it?" Many years ago in my own practice a patient, to whom I administered an anæsthetic, told me after the operation that during the induction period he heard a conversation at the other end of the room, and that although it was in reality being carried on in a whisper it sounded very loud to him and constituted a most distressing experience. Then I need hardly point out to you how important it is to administer the anæsthetic gently, and, as far as possible, in accordance with any special wishes the patient may have expressed. There is no anæsthetic comparable to nitrous oxide for quickly and pleasantly inducing anæsthesia, but in order that it may do itself justice four essential points must be borne in mind—viz.: (1) the apparatus employed should have wide channels and easily acting valves, which, by the way, should be examined before use; (2) the face-piece should be very accurately adjusted; (3) oral and not nasal breathing should be secured; and (4) air should be breathed through the valves of the apparatus before nitrous oxide is admitted. When a slow method of induction is thought preferable the patient should be encouraged to converse whilst the anæsthetic vapour is very gradually administered.

In addition to our attempting to make the passage into and out of anæsthesia as pleasant as possible for the patient we should not forget to extend our consideration to the relatives. These, indeed, are often much more apprehensive with regard to the anæsthetic than the patient himself. Whenever practicable relatives should remain in some other part of the house during an operation under a general anæsthetic, particularly if it be one requiring a light anæsthesia and therefore likely to be attended by unconscious reflex sounds. In any event the door of the operation room should be kept closed during the operation and the recovery period. Should a relative insist upon being present during the administration, that method should if possible be adopted which is least likely to distress an onlooker, and directly consciousness has been destroyed a signal should be given for the relative to withdraw. In the dental operations of private practice relatives frequently insist upon being present, and it is on such occasions that the anæsthesia of nitrous oxide and oxygen has such great advantages over that obtained by nitrous oxide itself. However safe the prolonged nasal method of administering nitrous oxide may be, it is certainly often very distressing to witness, and this fact, coupled with the further fact that it is occasionally uncertain or even impracticable, prevents me from recommending it to you.

Children require special care and consideration. The first essential is to gain their confidence; the second is never to deceive them; and the third is never to lose patience with them. Small children can often be induced to count aloud whilst chloroform or the C.E. mixture is being carefully dropped upon a Skinner's mask. Those over six or seven years of age like to be treated as if grown up. Whenever possible relatives should be altogether excluded from the room during anæsthetisation. They are liable, by the anxiety they display, to alarm the little patient, and if the latter should prove recalcitrant they are put to unnecessary distress. When a semi-anæsthetised child is to be carried from one room to another he should be placed in the lateral posture, and this maintained till the operating table is reached.

During the administration of an anæsthetic it is only fair to the patient that the anæsthetist should give his undivided attention to his patient. It is to be hoped that within the near future our legislature may restrict the use of anæsthetics to qualified persons and prohibit single-handed anæsthetising and operating, save in cases of emergency. To administer an anæsthetic as it should be administered, to give no stronger vapour than is needed for the procedure in hand, to maintain free and unobstructed breathing, to anticipate and appropriately treat surgical shock—these are the essential duties of the anæsthetist to his patient; and such duties can only be performed when the whole attention is given to the administration. There are, too, certain minor duties which must not be overlooked. Means must be adopted of preventing liquid anæsthetic from reaching the face; gags or props, if required, must be used with great caution, lest loose or defective teeth be damaged; and the position of the arms and legs must be such that no posture-paralysis follows the operation. Although, as I have previously said, I am not to-day referring at any length to technical principles and details, it would be difficult to consider the æsthetic possibilities of anæsthetising without referring to the importance of carefully adjusting the administration to the particular conditions present. In popular language this means that no more of the anæsthetic should be administered than is absolutely necessary to fulfil the special surgical requirements. There is, I think, evidence to show that the anæsthetist of to-day—and I here more particularly refer to the specialist—errs, if anything, on the side of unnecessarily deep anæsthesia. Certainly this is so when ether is employed. Now although, by securing deep anæsthesia, he is doubtless rendering great services to his surgeon, it is questionable whether he is thinking sufficiently of his patient. I am rather inclined to maintain that the ideal form of general anæsthesia is that which, though profound enough to satisfy the surgical requirements, is not so profound as prejudicially to affect the patient. The true test of what I may perhaps venture to call artistic anæsthetising is to be found in the rapidity with which the patient regains semi consciousness after the operation. If the anæsthetist has so educated his sense of touch that he is able to detect and to maintain, even for a lengthy administration, an almost indistinguishable degree of lid-closure when the cornea is lightly touched, this speedy recovery will take place. By such a fine adjustment of the art of anæsthetising, the patient will be spared much of the after discomfort which is often regarded as inseparable from general anæsthesia.

It is important to bear in mind that the duties of the anæsthetist do not terminate with the withdrawal of the anæsthetic. Many a life has been lost by inappreciation of this point. No patient should be left until the lid reflexes have briskly returned and the power of swallowing and coughing has been regained. Speaking generally the patient should be turned upon his side immediately after anæsthetisation. After operations for adenoids it is important to stimulate the fauces and induce vomiting. If this be not done, the presence of blood within the stomach may produce inhibitory cardiac effects which, though not really dangerous, may alarm those left in charge of the patient. This suggestion does not, of course, apply to operations performed under the transient and too often inadequate anæsthesia of ethyl chloride or nitrous oxide. Clearing the fauces of mucus and adjusting the patient's head so that all secretions gravitate from the mouth will greatly assist in recovery and in the prevention of post-anæsthetic vomiting. Another important point, particularly in the case of prolonged operations about the air-passages, and in the case of patients with any respiratory affection, is to change the posture from one side to the other every two hours during the first day and night after the operation. In this way each lung can freely expand, and the plugging of a main or secondary bronchus by blood or mucus, and hence subsequent broncho-pneumonia, may be avoided. In a case in which I had administered an anæsthetic for about two hours for an operation upon the septum nasi and in which a certain amount of blood had, to my knowledge, entered the bronchi, the nurse failed to carry out the instructions given her as to posture, and the patient was kept lying upon one side. At the end of 48 hours the temperature rose, and signs indicating incipient but local broncho-pneumonia were detected. Almost immediately after the patient had been turned upon his opposite side some altered blood was coughed up, the temperature fell, and the physical signs disappeared.

Many of you will doubtless criticise the remarks which I have made, and some of you, perhaps, will think that I have altogether failed to make out a case for the æsthetic practice of surgical anæsthesia. Possibly the time has hardly come for the recognition and widespread adoption of all the details I have discussed. I am fully prepared to admit that in busy general practices, and particularly in such practices amongst the poorer classes, it may be difficult or impossible to bring the art of anæsthetising up to the level I have indicated. But if I have convinced you that it is possible by attention to these details to mitigate the discomfort and distress which may attend surgical anæsthesia I shall have achieved my object. In dealing with sensitive and, it may be, suffering human beings who are about to invoke the aid of the surgeon, it is the plain duty of the anæsthetist to prevent, as far as possible, not only physical but mental pain, and this double duty can only be discharged by attending to the various points which I have had the pleasure of placing before you.

The Milroy Lectures

ON

THE STREPTOTRICHOSES AND TUBERCULOSIS.

Delivered before the Royal College of Physicians of London on Feb. 17th, 22nd, and 24th, 1910,

By ALEXANDER G. R. FOULERTON,
F.R.C.S. Eng., D.P.H. Camb.,
LECTURER ON BACTERIOLOGY AND ON PUBLIC HEALTH TO THE MIDDLESEX HOSPITAL SCHOOL, AND COUNTY MEDICAL OFFICER OF HEALTH FOR EAST SUSSEX.

LECTURE II.[1]

Delivered on Feb. 22nd.

Streptotricheæ Pathogenic for Man.

Mr. President and Fellows,—It may be stated that, contrary to what was believed formerly, the ray fungus of Bollinger (*St. bovis communis*) is, relatively to other species, an uncommon cause of human infection. A few well authenticated instances of its occurrence in man have been recorded since the study of the streptotrichoses has been placed on an exact basis; but the records of others and our own investigations at the Middlesex Hospital suggest that this species is not, at any rate, a frequent cause of disease in man. In the course of our own investigation of 53 cases of streptotrichosis in man six distinct species of parasites have been identified. In one case it was easy to identify the streptothrix described by Eppinger; and from other cases we have isolated five distinct species which we have not been able to identify positively with previously described parasites. One of these five species, *St. luteola*, has sufficiently definite biological characteristics and does not correspond with any other named species. Of the remaining four organisms described provisionally as *St. hominis* I., II., III., and IV., Species III. and IV. are freely growing streptotricheæ, with well-marked biological characteristics, whilst Species I. and II. are organisms which yield a rather scanty growth on artificial media, but which, because of the scantiness of their growth, cannot be positively identified at present with apparently closely similar species isolated and described by others.

The General Biological Characteristics of the Pathogenic Streptotricheæ.

Because of want of knowledge of many details necessary for the proper identification of some of the organisms which have been described by pathologists, any attempt to classify, or even roughly group, the pathogenic streptotricheæ is attended by some difficulty. I have, however, attempted to subdivide these parasites roughly in accordance with certain broad cultural characteristics.

The first group includes a number of species which grow freely under artificial conditions at temperatures between 20°C. and 37°C., and which conform generally to the cultural type of the first group of saprophytic species already referred to. In this group may be placed the original ray fungus of Bollinger (*St. bovis communis*) and the closely allied, or identical species described by Rivolta under the name of *Actinomyces bovis sulphureus* as infecting the ox, and by Affanassiew and others as occurring occasionally in cases of human infection. To this group also belong the three species which I have described as *St. luteola* and *St. hominis* III. and IV., together with certain freely growing species described by Garten, Hesse, and others. The general morphology of this group is typical of the genus, and no difficulty in identification of the nature of the parasites is likely to arise. Most of the species liquefy gelatin, some liquefy inspissated blood serum, and some exercise an active hydrolytic action on starch. Some of these species give off in growth a pronounced "mouldy" smell; with others a faint feculent smell is noticeable with broth cultures, as happens also with some members of the third group. Pigment formation is not uncommon; and sporulation is frequently accompanied by a somewhat coarse kind of efflorescence on the surface of the growth. It may be added that *St. hominis* III., isolated from three cases of appendicitis, and *St. hominis* IV., isolated from a case of renal streptotrichosis which was probably secondary to a lung infection, are freely growing organisms which liquefy gelatin and generally resemble *St. bovis communis*. The two species are readily distinguished from each other, however, in culture. Species III. yields a faintly yellowish growth on nutrient agar, a brownish growth on potato, and liquefies serum slowly. Species IV. yields a greyish, gradually darkening, growth on nutrient agar, a black growth on potato, and does not liquefy inspissated blood serum.

The second group includes species which in their cultural characteristics conform generally with the second type of saprophytic organisms. Some of these organisms yield on artificial media a somewhat heaped-up, mealy-looking growth which may resemble exactly the growth of Koch's bacillus. The group includes *St. nocardii*, *St. eppingeri*, *St. capræ*, the streptothrix described by Sabrazès and Rivière, and the two distinct species described by Vincent and Freer as the cause of madura foot in India and in the Philippine Islands respectively. All the above species have been examined in my laboratory. Vincent's *St. maduræ* apparently never shows any acid-fast properties; Freer's streptothrix is said to be an acid-fast species, but I have not yet succeeded in satisfying myself on this point; and all the remaining species develop acid-fast rod-segments in old cultures. The streptothrix of leprosy, which Deycke has recently isolated, is also strongly acid-fast both in cultures on artificial media and when under parasitic conditions. The cultural characters of an acid-fast streptothrix isolated by Scheele and Petruschky from the case of a woman, aged 56 years, who died with a pulmonary infection and numerous subcutaneous abscesses, have not been described fully, but it seems probable that the species belongs to this group. Morphology in this group is as clearly characteristic of the genus as it is with species of the former group; speaking generally, however, the mycelial threads are finer, and usually lateral branching is somewhat less frequent in this group than in the other. Sporulation does not cause the coarse or chalky efflorescence seen in the other group, but with spore formation the surface of the growth usually assumes a fine, dry, powdery appearance. Some of the species form pigment, but this property is rather variable. Most of the species yield good growth on potato, inspissated blood serum is not liquefied, and there is no marked smell from cultures on artificial media. The pathogenic action of species of this group is usually well marked for the guinea-pig and rabbit, resulting sometimes in an infection characterised by widely disseminated tuberculous lesions.

The third group includes a type of organism which appears to be common in human infections, and which was referred to earlier as the class of organism with regard to which difficulties in identification are likely to arise. The type is difficult of growth on artificial media, its pathogenic action for laboratory animals is usually uncertain and of low degree, and it is impossible to say how many distinct species it includes. Of all the ordinary culture media peptone broth seems the best suited for the growth of these parasites; growth appears between the third and seventh days of incubation at a temperature of 37° C., and is represented either by a filmy-looking mass of very small white colonies at the bottom of the broth or by small isolated colonies which adhere to the side of the tube in which they are growing, the organism in the latter case sometimes showing a curious preference for growth up one side of the tube. In one or two instances a faint feculent smell has been detected in broth cultures of these organisms, whilst pus containing the organism in pure culture has had a strong smell of the same kind. These colonies, which never attain to a size larger than that of a small pin-head, show on examination a typical streptothrix organism. In some cases growth is not to be obtained on any other artificial medium. Growth

---

[1] Lecture I. was published in The Lancet of Feb. 26th, p. 551.

on nutrient agar, when it occurs, is very slow; small, whitish, dry-looking, heaped-up colonies, of a friable consistence, appear on the medium after about five to eight days' incubation at 37° C., and remain always of limited extent. On examination of these colonies the growth appears to consist almost exclusively of beaded, rod-segments, and careful search may be required for the detection of definite lateral branching. When growth occurs on nutrient agar it usually occurs also on inspissated horse or ox serum, and in that case is slow in progress and always scanty. After a time there is some "pitting" of the serum on which the small whitish colonies are implanted, suggestive of a feeble peptonising action. Growth does not usually occur on nutrient gelatin incubated at 22° C.; but, in spite of no growth occurring, some liquefaction has been observed at times of the gelatin surface over which pus containing organisms of this type has been smeared—an indication of the secretion of a peptonising ferment by the parasite. From cases in which growth has been obtained on at least three different media—peptone broth, nutrient agar, and inspissated serum—I have been able to isolate what are believed to be two distinct species of this type, *St. hominis* I. and II. Streptothrix I., isolated from two cases of pulmonary streptotrichosis and from four cases of infection of parts about the mouth and neck, yields a very scanty, whitish, friable growth on solid media, which much resembles, except that it is scanty in comparison, the growth of Koch's bacillus. This species has a low degree of pathogenicity for ordinary laboratory animals, inoculation tests, either with the original pus or with pure cultures, usually failing. Streptothrix II., isolated from a single case of acute abscess of the tongue, yields a whitish growth of similar appearance, but developing with rather more freedom. In broth cultures of this organism "clubbing" of the ends of the mycelial side branches is common and the entire tufts of mycelium are liable to become encrusted with a hard, gritty, calcareous kind of material. The second of these species is actively pathogenic for the guinea-pig and rabbit, causing on intraperitoneal injection a fatal peritonitis. In neither species has any development of acid-fast rod-segments been observed.

From one other case of pulmonary streptotrichosis, and from five cases of infection of parts about the mouth or in the neck, small whitish colonies of a fine streptothrix organism, so far resembling Species I. and II., were obtained in broth cultures, but attempts to obtain cultures on solid media failed.

Streptotrichoses caused by parasites conforming more or less closely with the special type of this group have been described by several pathologists; in none of the cases has the presence of acid-fast rod-segments been observed. The following may be quoted as cases in which a full description of the parasite isolated in culture is available. Three cases recorded by Berestnew—one a case of subperiosteal abscess of the mandible in a woman and two cases of pulmonary streptotrichosis occurring in males, aged 16 and 43 years respectively, and in each case with perforation of the thorax and infection of the skin and the chest wall: a case of abscess of the mandible recorded by Paul Krause: two cases of what was termed "necrotic broncho-pneumonia" occurring in men aged 23 and 45 years respectively, recorded by Norris and Larkin: and a case of abscess of the abdominal wall, possibly secondary to an appendicitis, recorded by Hayo Bruns. The organism (*St. equi*) which Dean isolated from a submaxillary abscess in a horse appears, from the description given, to be one which would come within this group; intraperitoneal injection of this organism produced in rabbits a definite tuberculous infection of the peritoneum.

THE GENERAL PATHOLOGY OF THE STREPTOTRICHOSES.

It will be convenient to consider the general pathology of the streptotrichoses in connexion with a series of 53 cases from which material has been examined in my laboratories, the series including 39 cases which have been referred to previously in an article on the Pathology of Streptothrix Infections in Allbutt and Rolleston's "System of Medicine." The series does not include any cases which would generally be recognised as cases of tuberculosis, and in every case a diagnosis has been established either by isolation and culture of the parasite or by the identification microscopically of definite branching mycelial masses or threads of a declared streptothrix type and staining by Gram's method.

Table showing Sex Distribution, Apparent Seat of Primary Infection, and Results of Bacteriological Examination in 53 Cases of Streptotrichosis.

—	Total.	Sex distribution.		Results of bacteriological examination of 43 cases.											Streptothrix identified by microscopic examination only; neither culture nor animal experiments attempted (10 cases).
		M.	F.	Streptothrix eppingeri.	Streptothrix luteola.	Streptothrix hominis I.	Streptothrix hominis II.	Streptothrix hominis III.	Streptothrix hominis IV.	Freely growing streptothrix. ? Species IV.	Culture of organism obtained in broth only. Failure with other media.	Attempt at culture failed; animal inoculation, positive result.	Attempt at culture failed; animal inoculation, if any, no result.	Culture not attempted; animal inoculation, with negative result.	
Streptotrichosis of parts about the mouth and neck	27	17	10	—	1	4	1	—	—	1	5	—	8	—	7
Pulmonary streptotrichosis	9	5	4	—	—	2	—	—	—	—	1	1	3	1	1
Renal streptotrichosis, probably secondary to pulmonary infection	1	—	1	—	—	—	—	—	1	—	—	—	—	—	—
Appendicitis	10	7	3	—	—	—	—	2	—	—	—	—	6	—	2
Right iliac abscess, probably secondary to appendicitis	4	2	2	—	—	—	—	1	—	—	—	—	3	—	—
Conjunctivitis	1	—	1	—	1	—	—	—	—	—	—	—	—	—	—
Peritonitis, after abdominal operation	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—
	53	32	21	1	2	6	1	3	1	1	6	1	20	1	10

Of the 53 patients, 48 of whom were of the ordinary hospital class and 5 private patients, 32 were male and 21 female. This preponderance of males corresponds with what has been found in larger series of collected cases. Thus amongst 101 cases in which the sex was known, out of 109 cases published in the United Kingdom from 1884 to 1906 and collected by Acland, there were 65 males and 36 females; and amongst 405 cases, collected by Leith, in which the sex was known there were 295 males and 110 females.

The influence of occupation and other circumstances involving special exposure to the possibility of infection from a vegetable source is noticeable in this series. In 10 (8 males and 2 females) of the 53 cases the occupation was not ascertained; of the remaining 43 persons, 14 (4 males and 10 females) either had no special occupation or were engaged in ordinary housework, and 29 belonged to the "occupied" classes; of these 29, 2 (a medical man and a woman student of medicine) belonged to the professional classes, and 27 (19 males and 8 females) following definite trades belonged to the working classes.

Of the 27 persons belonging to the working classes 19 (13 males and 6 females) followed trades in which they would be specially exposed to any infection which might have its source of origin in vegetable matter. Thus there were amongst them 5 men employed in stable work and handling hay and straw constantly; of these, 1 had a primary pulmonary streptotrichosis and died with a secondary abscess in the cerebrum, another was admitted into hospital with a streptotrichial empyema secondary to a lung infection, 2 had abscesses in the submaxillary region, and 1 had an abscess in the substance of the cheek. A patient with a streptotrichial appendicitis was a cellarman who was constantly handling the straw casings of wine bottles, and who happened also to live over some stables. Two of the patients were bakers, one with a subperiostea labscess of the lower jaw, and one with a right iliac abscess which presumably was secondary to an appendicitis. Two of the patients were gardeners, both with abscesses in the submaxillary region. Two other patients whose occupations would expose them to the risk of infection of this kind were a dairymaid, who suffered from a submaxillary abscess, and a man with a streptotrichial appendicitis who had been employed for many years in a large timber yard.

Finally, amongst these 19 workers, who by reason of their occupation, might be supposed to be specially liable to infection of this kind, there was a group of 7, including 2 working tailors, 3 working tailoresses, and 2 working dressmakers, who would be in the habit of passing cotton and thread between their lips. Of these the two tailors each had a submaxillary abscess; the three tailoresses suffered respectively from a pulmonary streptotrichosis, an acute parotid abscess, and a submaxillary abscess; one dressmaker died with thrombosis of the superior mesenteric, splenic, and portal veins resulting from a streptotrichial appendicitis, and the other had a submaxillary abscess. The remaining 8 of the working classes (6 males and 2 females) followed as many different trades, in none of which could any probable cause of any special liability to exposure to infection be traced. In two other cases—one that of a woman medical student who died with extensive retroperitoneal suppuration following on a streptotrichial appendicitis, the second that of a young male of no special occupation who died with infection of the lungs, liver, and cerebrum—there were circumstances of interest in connexion with the probable source of infection. The woman had spent a long holiday in the country ending three months before the onset of symptoms of appendicitis, and whilst away had been in the frequent habit of chewing ears of growing barley and oats as she walked through the fields. The male patient died within four months of leaving a farm on which he had spent several weeks during convalescence after scarlet fever.

The age-distribution of the cases showed that the incidence of infection is probably heaviest at ages between 15 and 35 years:—

Infection occurred in 3 cases at ages under 15 years.
" " 15 " " 15 and under 25 years.
" " 14 " " 25 " 35 "
" " 5 " " 35 " 45 "
" " 8 " " 45 " 55 "
" " 3 " " 55 and upwards.

In five adult cases the exact age was not ascertained.

In 10 (7 of infection of parts about the mouth, 2 of appendicitis, and 1 of pulmonary streptotrichosis) of the 53 cases the parasite was identified by microscopic examination only, and no attempts at culture or animal inoculations were made; and in another case, one of pulmonary streptotrichosis, the parasite was identified microscopically, no culture was attempted, and animal inoculation gave no result.

The results of bacteriological examination in the remaining 42 cases were as follows: *St. eppingeri* was isolated in pure culture from a case of peritonitis resulting from accidental infection during an abdominal operation. *St. luteola* was isolated from a case of alveolar abscess of the maxilla, and from a case of conjunctivitis. *St. hominis* I. was isolated from 4 cases of infection of parts about the mouth, and from 2 cases of pulmonary streptotrichosis. *St. hominis* II. was isolated from a case of acute abscess of the tongue. *St. hominis* III. was isolated from 2 cases of appendicitis, and from the pus of a right iliac abscess, probably resulting from appendicitis. *St. hominis* IV. was isolated from a case of renal streptotrichosis which was probably secondary to a pulmonary infection; a streptothrix whose exact character has not yet been worked out, but which closely resembles Streptothrix IV., was isolated from an abscess in the cheek.

In 6 other cases (5 of infection of parts about the mouth and 1 of pulmonary streptotrichosis) a growth of small white colonies resembling those of *St. hominis* I. and II., was obtained in peptone broth; but no growth could be obtained on solid media, and animal inoculations, when carried out, gave negative results. In another case, one of pulmonary streptotrichosis, attempts at culture of the parasite which had been identified microscopically failed, but inoculation of the sputum from the case produced, on intraperitoneal inoculation of rabbits, a fatal tuberculous kind of peritonitis in the lesions of which the streptothrix was present in large quantities.

In the remaining 20 cases (8 of infection of parts about the mouth and in the neck, 3 of pulmonary streptotrichosis, 6 of appendicitis, and 3 of right iliac abscess) attempts at culture of the parasite failed, and no result was obtained in such of these cases in which inoculation of rabbits and guinea-pigs was performed. The complete failure of 20 attempts out of 42 which were made to identify by ordinary bacteriological procedure a streptothrix whose presence had been proved by microscopic examination will indicate the difficulties presenting themselves in the exact study of these parasites. That the streptothrix which was identified by microscopic examination was the primary cause of the lesions in these cases is indicated by the fact that in 13 out of these 20 cases the solid and fluid culture media which had been inoculated remained sterile of growth; in the seven other cases cultures of either *Staphylococcus pyogenes aureus* or *albus* were obtained, these bacteria being present as the result presumably of secondary infection.

The nature of the lesions occurring in the series of cases may be considered next.

Infection by the Oral Mucous Membrane.

Amongst the 53 cases there were 27 in which lesions about the mouth or in the neck resulted clearly from oral infection.

In 22 of these cases the lesion was a single localised abscess. In 10 cases the abscess was certainly alveolar, and in 9 of the cases affected the lower jaw. In only 2 of these cases was the species of the parasite identified, *St. luteola* being isolated in the maxillary case, and *St. hominis* I. in one of the others. In 10 additional cases there was an abscess either in the substance of the cheek or presenting externally behind or below the lower jaw. Amongst these 10 cases *St. hominis* I. was isolated from one, and a free-growing organism closely resembling, or identical with, *St. hominis* IV. from another. There was one case of acute suppuration of the parotid gland in which a streptothrix was present in large quantities in pus exuding from Stenson's duct; the organism was obtained in pure culture in peptone broth, but no growth could be obtained on other media. A single case of acute abscess of the tongue occurred. The patient, a stonemason, aged 18 years, had been under an operation for a traumatic hæmatocele of the spermatic cord. He had recovered and was on the point of being discharged from the hospital when an abscess, rather smaller than a hazel nut, developed in the dorsum of the tongue. The pus contained *St. hominis* II. in pure culture.

In the five remaining cases the infection had spread locally to some extent. In one case, that of a man, aged 21 years, there was a history of an acute tonsillitis followed by an abscess near the angle of the jaw. Induration of the front and side of the neck followed, in the course of which some five or six small abscesses formed in the subcutaneous tissue. On admission into hospital the infection had extended to the level of the upper border of the sternum, and the pus from a small sinus contained large quantities of a streptothrix which, as subsequently obtained in pure culture from another abscess, proved to be *St. hominis* I. In the

FIG. 1.

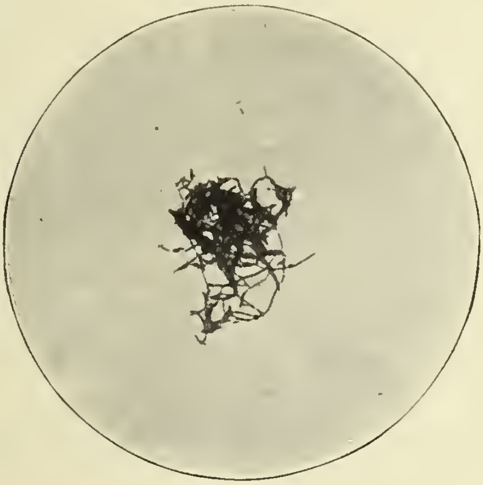


FIG. 2.

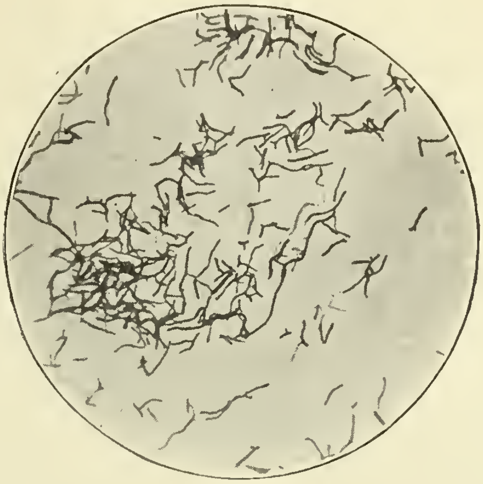


FIG. 3.

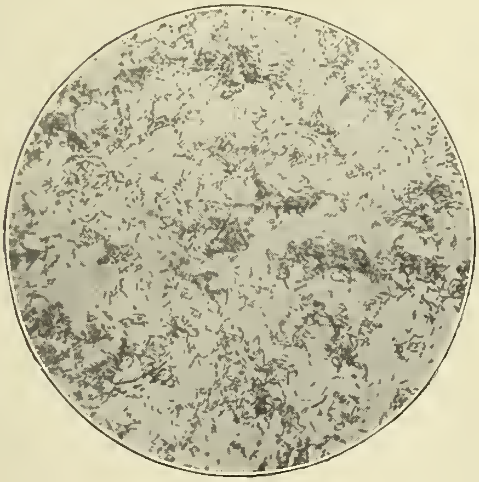


FIG. 4.

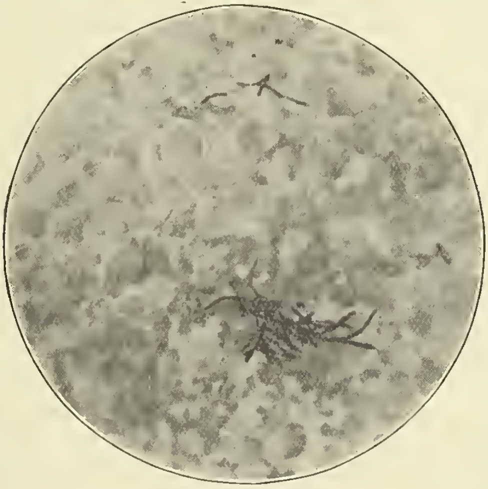


FIG. 5.

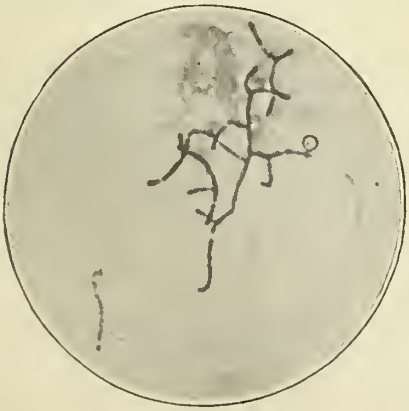


FIG. 1.—48 hours old culture of *Streptothrix eppingeri*, showing branching mycelium.

FIG. 2.—96 hours old culture of *Streptothrix eppingeri*, showing fragmentation of mycelium.

FIG. 3.—Old culture of *Streptothrix eppingeri*, showing rod-segments (some acid-fast) and spherical spores.

FIG. 4.—*Streptothrix freeri*, from peritoneal exudation of rabbit dying three days after intra-peritoneal inoculation.

FIG. 5.—Acid-fast streptothrix in sputum, from case of pulmonary infection. (Dr. Ward's case.)

other four cases an abscess either in the cheek or in the floor of the mouth had perforated and infected the skin and subcutaneous tissue to greater or less extent; *St. hominis* I. was isolated in one of these cases also.

Infection of the Appendix Cæci.

The next common seat of apparent primary infection was the appendix, there being ten cases of appendicitis proved by operation or examination after death, and four cases of right iliac abscess which were probably secondary to appendicitis. In three of these cases death occurred.

In the first of the fatal cases, that of a woman, aged 26 years, extensive suppuration followed an operation for appendicitis, and death occurred six months later. At the examination after death an extensive infection was found, with suppuration of the retroperitoneal connective tissue of the right side extending upwards as high as the origin of the psoas muscle, and spreading downwards for a short distance along the sheath of the femoral vessels.

In the second case, that of a woman, aged 25 years, a sudden rise of temperature to 104° F., accompanied by rigors, occurred on the tenth day after operation, jaundice was noticed on the following day, and the patient died 16 days later. At the examination after death peritonitis of recent origin was found. There were enlargement, softening, and suppuration of some of the aortic and cœliac lymphatic glands. An abscess of the size of a walnut had involved the posterior aspect of the pancreas near its head. The splenic vein, which lay in close relation to the abscess, and the portal vein and its intra-hepatic branches were full of thick green pus, and there were numerous small nodules in the liver. The pus in the veins was full of branching mycelium, and *St. hominis* III. was isolated from the veins and from the liver nodules.

The third case was that of a boy, aged 16 years, who was operated on for appendicitis, the symptoms of which had developed acutely seven days previously. There was a sudden rise of temperature on the day after the operation, and the temperature fluctuated between normal and 104° F. until death occurred seven weeks later. Symptoms of pneumonia, and then peritonitis, developed shortly before death. At the examination after death there were found recent lobular pneumonia, peritonitis, suppurative thrombosis of the portal vein, numerous abscesses in the right lobe of the liver, and a single nodule in the spleen. The presence of a streptothrix parasite was clearly apparent in the appendix at the time of operation and in the pus of the portal vein after death. But all attempts to obtain the organism in culture failed.

There is little to be said with regard to the remaining 11 cases. In none of them was the appendicitis of acute onset, and recovery from operation occurred in all. In two of the cases the appendix had become adherent to the abdominal wall and infection by direct continuity of tissue had followed, a small abscess in the skin presenting in one case just above Poupart's ligament, in the other case at the upper part of Scarpa's triangle. In two of these cases *St. hominis* III. was isolated, in seven the attempt at culture failed, and in two the parasite was proved to be present by microscopic examination only. It may be mentioned that a distinct feculent odour was noticeable with the pus of three of the cases, although the negative results of attempts at culture showed that no organisms other than the streptothrix which had been identified microscopically were present.

Primary Pulmonary Streptotrichosis.

Amongst the 53 cases of streptotrichosis there were ten in which, as it appeared, the lung was the seat of primary infection. In nine of the cases the existence of the lung infection was established completely; in the other case it appeared that a streptotrichosis of the kidney was secondary to lung disease, the exact nature of which could not be proved. These pulmonary cases are of sufficient importance to be referred to in some detail.

CASE 1.—A woman, aged 19 years and of healthy appearance, was admitted with an abscess presenting in the upper left mammary region. The pus had a distinctly feculent smell, and *St. hominis* I. was isolated from it in pure culture. As the result of the examination it appeared probable that the abscess was secondary to deeper-seated disease, and, the original operation wound not healing, an exploratory operation showed a small fistula perforating the third intercostal space. There were no symptoms of intrathoracic disease, but physical examination proved a small area of impaired lung resonance below the position of the mammary abscess, together with deficient expansion of the lung. The case recovered after further operative measures and long treatment with potassium iodide.

CASE 2.—A coachman, aged 50 years, was admitted with a large empyema of the right pleura. The pus, as in the last case, had a distinct feculent odour, and on microscopical examination proved to contain large quantities of a streptothrix. Three dozen tubes of various culture media were inoculated with the pus, but all remained sterile. Inoculation of rabbits and guinea-pigs also gave negative results. The patient was much emaciated on admission and there was a history of chest disease of several years' standing.

CASE 3.—A Polish working tailoress, aged 46 years, was admitted with a history of lung disease of some 12 years' duration. There were marked physical signs in both lungs, and the sputum showed quantities of a streptothrix. A year before admission into hospital an abscess had formed, and broken, just under the left clavicle. At the time of admission there was a considerable discoloured area of brawny induration of the subcutaneous tissue extending above and below the left clavicle. The patient remained in hospital for some four months, during which time infection of the subcutaneous tissue of the chest gradually extended until the left suprascapular region behind and the whole of the mammary region in front were involved. Numerous small subcutaneous abscesses formed, and from the pus of these *St. hominis* I. was isolated in pure culture repeatedly.

CASE 4.—A woman, aged about 45 years, had for many years signs and symptoms suggestive of chronic phthisis of the right lung. Her sputum contained large quantities of a streptothrix parasite, and no acid-fast organisms could be found. Inoculation of the sputum into the popliteal space of the guinea-pig gave a negative result, proving the absence of Koch's bacillus. Intraperitoneal inoculation of the rabbit produced a peritonitis, with tubercular nodules in which a streptothrix could be recognised microscopically; but attempts to obtain cultures of the parasite on artificial media failed. About a year afterwards an abscess presented externally in the right infrascapular region.

CASE 5.—A man, aged 33 years, was admitted presenting an extensive induration of the subcutaneous tissue over the front of the chest and with physical signs of disease of the left lung. The indurated area extended to both sides of the sternum, and presented several ulcers with undermined edges. The history of the case was that six months before admission an abscess had presented over the left second intercostal space, and from the opening of the abscess an infection of the subcutaneous tissue had gradually extended. The sputum in this case contained a streptothrix organism, and cultures of a streptothrix were obtained in peptone broth inoculated with pus from one of the subcutaneous abscesses. Attempts to obtain cultures of the parasite on solid media failed, and inoculation experiments with rabbits, guinea-pigs, and mice gave negative results.

CASE 6.—A girl, aged 13 years, who had been under treatment for pulmonary tuberculosis, presented an abscess on the front of the left side of the chest. A year afterwards an abscess developed at the back of the right side of the chest. The pus from the latter abscess showed on microscopic examination a considerable number of streptothrix parasites; no other organisms could be detected.

CASE 7.—A coachman, aged 65 years, was admitted into hospital with symptoms of a cerebral abscess, and died two days later. At the examination after death an extensive streptotrichosis of the right lung and a cerebral abscess were found. A streptothrix was identified microscopically in the lung and in the pus of the cerebral abscess, but attempts at culture on artificial media failed.

CASE 8.—A lad, aged 18 years, was admitted into hospital with an old empyema of the left pleura which was discharging through two fistulæ in the chest wall. The history of the case was that three months previously there had been an attack of "inflammation of the lungs," that an empyema had then developed, and had been incised when it was already pointing. On the sixth day after admission the patient had 15 fits of an epileptic kind, and then became comatose. He remained unconscious for another six days, during which numerous epileptiform convulsions occurred. He then died. At the examination after death an extensive streptotrichosis with infection of the left lung, the spleen, liver, and brain was found. The left lung presented large nodular masses, some caseated, others breaking down into pus. The spleen contained a large abscess. The liver contained a number of small nodules, some caseated, others breaking down into pus. In the right frontal lobe of the brain there was a nodule, of about the size of a walnut, which had partly broken down. A streptothrix was identified in the lesions of all these organs, but no attempts at culture of it were made.

CASE 9.—The patient, a male metal-worker, aged about 50 years, had wasted considerably after suffering from symptoms of lung disease for about 12 months. His sputum contained large quantities of acid-fast rods, many of which were distinctly "beaded," and together with these there were longer, branched, mycelial threads. The organism was strongly acid-fast. No attempts at culture of the parasite on artificial media were made in this case, but an infection by Koch's bacillus was excluded by the fact that two guinea-pigs which had been inoculated with the sputum remained free from any infection.

CASE 10.—The last case to be mentioned is that of a woman, aged 31 years, who was admitted into hospital with a pyo-nephrosis. The case was regarded as being one of tubercular infection, and the right kidney was removed by Mr. T. H. Kellock. On examination, immediately after removal, the gland had an appearance which would usually be regarded as characteristic of tuberculosis. It was considerably enlarged, its substance had been extensively destroyed, and what remained presented a number of caseating nodular deposits. The much dilated pelvis contained a quantity of thick, curdy pus. Microscopic examination of the caseous nodules showed a streptothrix parasite present in large quantity; and *St. hominis* IV. was isolated in pure culture. Two guinea-pigs which were inoculated with the caseous material remained free from any indication of tubercular infection. It seemed probable that the original infection was a pulmonary one; there was a history of chest disease before signs of kidney disease were observed, and although there were no signs of lung disease detected during the patient's stay in hospital it was ascertained that there was a recrudescence of lung symptoms some months after she left.

Streptotrichosis of other Parts.

Two other cases of streptotrichosis have to be mentioned in order to complete the series. One, a case of acute conjunctivitis with sloughing of the cornea, occurred in a girl, aged eight years. From the conjunctival pus an organism, *St. luteola*, which had been isolated also from a case of oral infection, was obtained in pure culture. Cases of conjunctival streptotrichosis apparently are rare, but have been recorded by Du Bois Saint-Sévrin and Demicheri.

The last case of the series was an interesting example of infection by *St. eppingeri*, a typical acid-fast organism of the second group of pathogenic streptotricheæ referred to in these lectures.

The patient, a man, aged 55 years, was admitted into hospital with a diagnosis of carcinoma of the œsophagus, and an appendicostomy operation was performed for feeding purposes. The patient, however, became gradually weaker and weaker, and died 24 days after the operation. Beyond the increasing weakness after the operation there were no special symptoms of disease, and the temperature never rose above 99·2° F. At the examination after death a narrow, annular, carcinomatous stricture of the œsophagus was found at the level of the upper border of the thyroid cartilage; there were no secondary foci of malignant disease. The cæcum and its appendix were quite healthy, but on the peritoneal surface in the neighbourhood there were a number of yellowish-grey miliary tubercles. Behind the cæcum there was an abscess of about the size of a hen's egg. Small greyish tubercles were scattered thickly through the retro-peritoneal tissue behind the ascending colon; there were a few also on the under surface of the right half of the diaphragm. There was some general peritonitis, and a few grey miliary tubercles were found on the intestines. The right lung contained three abscesses; there was an abscess of about the size of a walnut in the base of the lung at a point at which the lung was adherent to the diaphragm, there was a smaller abscess on the middle lobe, and a third one in the apex of the lung. Nothing abnormal was found in the left lung or in the other organs. *St. eppingeri* was isolated in pure culture from the pus of the retro-cæcal abscess, from a small tubercle in the connective tissue behind the ascending colon, and from the pus of the pulmonary abscesses.

It appeared clearly that the streptotrichosis was the result of an accidental infection during the performance of the operation, and there is a close parallelism between the history and that of a case recorded by MacCallum, in which infection of the peritoneal sac by *St. eppingeri* occurred during an operation of gastrostomy.

Excluding the two cases—one of pulmonary, the other of peritoneal infection—in which an acid-fast streptothrix was present, the series includes 51 cases in which the infecting parasite was either probably or certainly a species of the first or third group of pathogenic streptotricheæ which have been referred to. It is true that in 10 of the cases neither culture experiments nor animal inoculations were attempted, and that in 21 other cases attempts at isolating the streptothrix which was present resulted in failure. But acid-fast organisms were carefully looked for, and since streptotricheæ of the first and second groups grow with comparative freedom on artificial media it is permissible to presume their absence in the negative cases, and to assume that the infecting organism was in all probability some species of the third group. The 51 cases of streptotrichosis represent a type of infections caused by parasites other than those of the acid-fast group, in which there is little tendency to invasion of parts remote from the seat of primary infection except along continuous or directly across contiguous tissues. Although in many of the cases, and especially in the pulmonary streptotrichoses, the duration of infection was already considerable when the patient first came under notice, secondary foci were found in only four. In two cases of appendicitis there was suppurative thrombosis of the portal vein, with infection of the liver and spleen in one case, and of the mesenteric glands in the other; in one case of pulmonary streptotrichosis there was a single cerebral abscess, and in the other, the only case of lung infection with an acute history, there were secondary foci in the spleen, liver, and brain. On the other hand, a tendency to progressive invasion of planes of connective tissue was noticeable in some of the cases. In one case after an infection of the tonsil there was a slow invasion of the subcutaneous tissue on the front of the neck; in a case of appendicitis there was a widely spreading infection of the retro-peritoneal connective tissue; and in cases of pulmonary streptotrichosis there has been extensive infection of the subcutaneous tissue of the chest, after perforation through an intercostal space. The common streptotrichosis of the ox resembles this type of human streptotrichosis, in that in a very large majority of the cases the disease shows little tendency to spread, except by extension along directly continuous tissue from the primary seat of infection, which in a very large majority of the cases is in or about the mouth and pharynx.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, MARYLEBONE-ROAD, N.W.—The annual meeting of the supporters of this hospital was held on Feb. 22nd, Sir Samuel Scott, M.P., presiding. The report stated that 1793 patients were admitted into the wards last year and 2333 patients were attended and nursed in their own homes. While the total expenditure amounted to £7150, the total income was £5580 only, leaving a deficit of £1570. The chairman pointed out that the total expenditure during the past three years had exceeded the total income by no less than £3287. This position was due to the fact that the amounts received from donations and legacies were much less than formerly. With regard to the legacies there had been a great falling off. He earnestly hoped that a larger measure of public support would be forthcoming, otherwise it would be impossible to continue the work on the present scale. Any curtailment of the benefits the hospital provided would entail great hardship on the poor women who sought its aid.

A Clinical Lecture
ON
A CASE OF INTRACRANIAL TUMOUR WITH ALTERATIONS IN THE COLOUR FIELDS.

BY BYROM BRAMWELL, M.D. EDIN., F.R.C.P. EDIN., F.R.S.E.,
SENIOR ORDINARY PHYSICIAN TO THE EDINBURGH ROYAL INFIRMARY.

GENTLEMEN,—The patient to whose case I propose to draw your attention to-day is a married man, aged 56 years, a passenger guard by occupation. He was admitted to the infirmary on Nov. 27th, 1909, complaining of attacks of severe crampy pain in the left calf and loss of power in the left leg.

History.—The patient stated that prior to the present illness he had been a healthy and steady man; he had never suffered from any venereal affection. Two months before his admission to the hospital he was suddenly seized with severe pain in the left calf and shaking (clonic spasm) of the left leg; in consequence of this pain and spasm he was unable to stand. The pain disappeared after about four minutes, but the shaking continued for about an hour. After this attack he returned to work and he continued perfectly well for three weeks. He then had a *second attack;* it commenced with severe pain in the left calf; this was followed by a choking feeling in the throat and by loss of consciousness; there was no shaking of the leg during this attack. Five days after the second attack he had a *third;* it was characterised by agonising pain in the left calf, followed by loss of consciousness; in this attack he fell and hurt the left shoulder. After this attack he had a headache. A *fourth attack* in which he did not lose consciousness occurred a few days later; in this attack, after the cramp and pain in the left calf developed, "he felt," he says, "something rise up the left side of the body to the throat, and then go down the left arm." A *fifth attack* occurred a week before his admission to hospital; it was attended with shaking of the left foot, evidently the result of clonic spasm; he timed the movement and found it occurred 60 times in a minute; this spasmodic contraction of the foot and toes lasted for about an hour. After this attack his leg became paralysed, and for six days before his admission to hospital he was unable to walk.

Now that is a very definite history—recurring attacks of painful tonic spasm (cramp) in the left calf, usually followed by painless clonic spasms in the muscles of the left leg; sometimes attended with loss of consciousness; on one occasion on which there was no loss of consciousness attended by an aura which had a very definite course (a feeling of something passing up the left side of the body and then down the left arm); and finally followed by loss of power in the left leg. The family history was unimportant.

Condition on admission.—The patient walked with difficulty owing to loss of power in the left leg; there was also very decided loss of power in the upper part of the left arm. The knee-jerk on the left side was exaggerated; there was sustained ankle clonus on the left side; the plantar reflex showed active flexion on the right side, no toe movement on the left side. There were no sensory derangements. There was no headache. (Six months before he came to hospital he had occasionally had momentary shooting pain in the head on getting out of bed, but we attached no importance to this.) No vomiting; no giddiness; the optic discs were normal. Lumbar puncture showed a marked lymphocytosis (from 200 to 250 lymphocytes in a field of 450 diameters); the fluid escaped under low pressure. The heart, kidneys, and other viscera were healthy.

Diagnosis.—My house physician came to the conclusion that the symptoms were largely functional. This opinion was based on the general impression which the conduct and behaviour of the patient made upon his mind (the patient was very voluble and described in great detail the most trivial feelings and symptoms) and upon the facts—that the difficulty in walking varied very considerably within short periods of time; that on one occasion the pain and twitching (tonic and clonic spasm) which occurred in the left leg (both the leg and thigh) while he was being examined were relieved by a hypodermic injection of H_2O, a hypodermic injection into the thigh immediately stopped the twitching in the thigh, and a hypodermic injection of H_2O into the calf, which was subsequently given, immediately stopped the twitching in the calf.

I could never reconcile myself to this diagnosis. The sustained ankle clonus in the left (paralysed) leg; the absence of toe movement on the left side (imperfect Babinski on the left side) with active flexion on the right side; the lymphocytosis in the cerebro-spinal fluid; the very definite character of the spasmodic attacks (tonic spasm with cramp and Jacksonian attacks) in the left leg; the march of the aura (up the left side and down the left arm); the loss of consciousness which attended some of these attacks, and the loss of power in the upper part of the left arm (shoulder and elbow),—all seemed to me to point to an organic lesion. The age and sex of the patient also supported this view. The subsequent course of the case has shown that it is correct.

Subsequent progress of the case.—On Dec. 18th the patient had an attack of what appeared to be influenza, associated with some rise in temperature (100·8° F.), headache, and vomiting. (The headache and vomiting were merely temporary; the absence of headache and vomiting is remarkable seeing that great increase of the intracranial pressure was found at the operation—see *infra.*) On the 23rd I found that the retinal veins were unduly full, but there was no swelling of the discs. On Jan. 3rd, 1910, distinct papillitis was present in both eyes, slightly more marked, I thought, in the left disc. On this day perimeter charts of the fields of vision both for white and for colours were very carefully made by my junior house physician. The field for white in both eyes was considerably constricted; the fields for yellow and blue were markedly constricted and were much smaller than the fields for red; the field for yellow was much smaller on the left than on the right side. The chief point of interest in the perimeter charts is the very marked constriction of the fields for yellow and blue in comparison with the fields for red.

Until recently it was supposed that the condition of the fields of vision which is present in this case (constriction of the fields for white and for colours with interlacing of the fields for yellow, blue, and red, the yellow and blue fields being much more constricted than the red fields) was characteristic of functional and hysterical conditions. But quite recently it has been shown by Dr. James Bordley, jun., and Dr. Harvey Cushing[1] that this condition of the colour fields is present in a large proportion of cases of intracranial tumour. They think that the alteration is probably due to increased intracranial pressure; they suggest that, if this is so, this condition of the colour fields will be found not only in cases of intracranial tumour, but in other conditions, such as uræmia, in which the intracranial pressure is increased. With regard to the colour fields in hysteria they state:—

> We find, upon a careful review of the extensive literature, that every conceivable alteration in the form and colour fields has been ascribed to hysteria; but there are two conditions emphasised as being distinctly pathognomonic; one of them the view of the Charcot school, which attributes to these states the concentric contraction of the field for form with partial or complete colour reversal (dyschromatopsia); and the other the view that hysterical subjects have a predilection for red—merely another way of saying that the red field may encircle the blue or the blue become inverted.

Their observations on the colour fields in cases of intracranial tumour are summarised as follows:—

> The data derived from these 56 cases, owing to these special precautions, may therefore be of special value. The figures relate to the conditions which were present at the time of the first examination, often before the diagnosis of tumour was certified:—

1. Interlacing of colour lines the predominant feature...	25
2. Colour inversion the predominant feature	9
3. Hemiachromatopsia without corresponding change in form field	4
4. Islands of blue blindness (scotomata)	3
5. Blue blindness	3
6. Complete green blindness	1
7. Complete achromatopsia	5
8. No colour change whatsoever	6

> The striking features are: 1. The fact that in many of the charts the fields for form are unchanged, while there is a very definite change in the fields for colour. 50 out of the 56 cases show colour changes; only 18 showed definite form changes. 2. In four of the cases in which the colours interlaced tumours were found, though there was no choked disk. 3. In 41 out of 42 cases examined subsequent to operation, whether palliative or radical, the colour lines became restored to their normal relative position. The dyschromatopsia seems to depend in some fashion upon an increase of intracranial tension, the relief of which usually causes its early subsidence, and it is possible therefore that it may characterise organic lesions other than tumour.*
>
> * Since these statistics were compiled we have had additional evidence, from sources other than our own clinic, of the correctness of the view that these changes in the colour fields, so long looked upon as peculiar to hysteria, occur with great regularity in patients suffering from the tumour symptom-complex.

But to return to the facts of this case. The optic neuritis has rapidly increased and is to-day (Jan. 21st, 1910) very marked; the fields for white and for colours are much more constricted than they were; the interlacing of the colour fields is still very marked; the fields for green have now completely disappeared; and, what is a very curious feature (if it is a fact confirmed on subsequent examinations), the fields for white are now in places smaller (more constricted) than the fields for red, blue, and yellow. The paralysis of the left upper extremity has now become complete; the hand and forearm are now completely paralysed; three weeks ago the upper arm only was involved. The paralysis of the leg is less than it was on the patient's admission to hospital. The patient continues to be free from headache and vomiting.

I am disposed to think that the paralysis of the leg, which was marked when the patient was admitted to hospital, was probably, in part at least, post-epileptic in character. This would explain the improvement in the condition of the leg. The gradual way in which the paralysis of the arm has extended and increased is highly suggestive of an intracranial tumour. The optic neuritis confirms this diagnosis. There can, I think, be no doubt that we have to do with an intracranial tumour. If this is so, the absence of headache and vomiting is a striking (negative) feature of the case. Headache and vomiting are present in the great majority of cases of intracranial tumour; headache in particular is rarely absent, and I always hesitate to commit myself to a definite diagnosis of an intracranial tumour when there is no headache. In 192 cases of intracranial tumour of which I have notes and which I have recently analysed, headache was absent in 6 cases, or 3·12 per cent.; and vomiting was absent in 42 cases, or 21·76 per cent.[2]

In my cases of intracranial tumour in which headache was absent or slight there was usually little or no increase of the intracranial pressure. The absence of headache and vomiting in this case is certainly suggestive that the intracranial pressure is not increased, and the low pressure under which the cerebro-spinal fluid escaped when a lumbar puncture was made in this case points in the same direction. But against these facts we have the rapid way in which the optic neuritis has developed and become very marked.

There can, I think, be no doubt that the tumour involves either the cortical centre for the left upper extremity or the fibres passing from that centre to the internal capsule. The gradual way in which the paralysis has extended is, I think, suggestive of a subcortical glioma, which has destroyed the arm fibres and irritated the leg fibres or the cortical centre for the leg. The severe cramp-like spasm which ushered in the fits, which were the characteristic feature of the case in its early stages, is, to my mind, suggestive of irritation of conducting fibres rather than of cortical grey matter. In typical cases of Jacksonian epilepsy due to irritation of the motor cortex there is no pain. I have, however, seen severe pain and tonic spasm in at least one other case of cerebral tumour in which there were Jacksonian fits; in that case the tumour was a subcortical glioma.

The marked lymphocytosis in the cerebro-spinal fluid is at first sight suggestive of a syphiloma, but the absence of headache and the very definite statement of the patient that he has never had any form of venereal disease are strongly opposed to this view. In all of the cases of cerebral syphiloma of the cortex which I have seen headache has been a prominent symptom. The age of the patient, too (56 years), is against syphilis; he is rather old for a syphilitic growth. There is nothing in the case to suggest a tuberculoma; in fact, everything is against that form of new growth. Both the positive and negative facts (if we exclude the lymphocytosis in the cerebro-spinal fluid) are in favour of a subcortical glioma.

As regards treatment, an operation is obviously indicated. The rapid way in which the optic neuritis is developing shows this. I expected to find a subcortical glioma, but whether it would be possible to remove it or not was another matter.

---

[1] Archives of Ophthalmology, 1909, vol. xxxviii., No. 5, p. 451.

[2] Clinical Studies, vol. viii., p. 107.

Operation.—Mr. J. M. Cotterill removed a large flap of bone over the right motor area. On opening the dura the intracranial pressure was found to be very greatly increased; the convolutions were flattened, but appeared to be otherwise normal; no tumour could either be seen or felt. A large hernia cerebri has since developed at the seat of the exploration; a few days after the operation the patient's mental condition became seriously deranged and during the night he tore off the bandages and made the wound septic. The patient died and was examined post mortem. Below the fungus cerebri there was an area of recent acute cerebritis; deeper down an extensive gliomatous tumour which had extended to the wall of the lateral ventricle and across the under surface of the corpus callosum slightly to the right side. The lining membrane of the ventricles was in a condition of purulent inflammation.

Additional remarks.—The fact that at the time of the operation the intracranial pressure was so greatly increased is a noteworthy point, seeing that there were no headache and no vomiting. We happen to have several other cases of intracranial tumour in the wards at the present time. In all of them the colour fields have been very carefully mapped out by my junior house physician, Dr. H. F. Smith. Let me briefly mention the leading features of those cases.

CASE 2.—This patient, a married man, aged 41 years, was admitted to the infirmary on Dec. 15th, 1909, suffering from headache, vomiting, right-sided hemiplegia, and aphasia. The paralysis had developed gradually six weeks before his admission to hospital; it first affected the right hand, then extended to the arm, leg, and face on the same side. Two weeks before his admission to hospital his speech became affected and his mental condition showed some change—drowsiness, impairment of memory, and irritability of temper. The headache was very severe; it was felt in the frontal and occipital regions and in the nape of the neck. There was double optic neuritis. The visual acuity in each eye was 50/80; there was some constriction of the fields for white and for colours, but no interlacing of the colour fields.

CASE 3.—This patient was a man, aged 22 years, a tinplater by occupation, who was admitted to the infirmary on Jan. 29th, 1910, suffering from headache, vomiting, and giddiness; these symptoms had developed a month previously. The headache was severe and was referred to the frontal and occipital regions. There was marked double optic neuritis. The visual acuity was 6/9. The fields, both for white and for colours, were markedly constricted, but there was little or no interlacing of the colour fields. The right external rectus was completely paralysed and there was some weakness of the left face (left seventh nerve). The abdominal reflex was brisk on both sides. There was no fine tremor of the hands. The knee-jerks, which were brisk on admission to hospital, rapidly became diminished and could only be elicited on reinforcement. The patient was mentally dull. There was no paralysis of the arms or legs, no hypotonia, no incoördination. When the patient walked he tended to fall to the left side. The symptoms seemed to point to a tumour in the posterior fossa, but the localisation was by no means certain; it is possibly in the frontal lobe.

CASE 4.—The patient, a single woman, aged 43 years, was admitted to the infirmary on Dec. 20th, 1909, suffering from fits and complaining of headache and occasional vomiting. The fits, which had commenced a year previously, were of two kinds—ordinary epileptic fits attended with loss of consciousness and localised clonic spasms affecting the right hand and arm, unattended with loss of consciousness and apparently of the nature of Jacksonian attacks. The headache was referred to the left temple; there was occasional giddiness. The optic discs were clear on admission, but a fortnight later slight optic neuritis (observation confirmed by Dr. A. H. H. Sinclair) developed in the left eye. The fields of vision showed right-sided hemianopsia with marked constriction of the fields for white and for colours on the left side. There was no interlacing of the colour fields. The abdominal reflex could not be obtained on either side. The plantar reflex showed an extensor response on the right side. There was no fine tremor of the hands. Under large doses of iodide of potassium the headache and vomiting have subsided; the patient feels very much better. The Jacksonian attacks have ceased. The condition of the optic discs and fields of vision remain as stated above.

THE TREATMENT OF TUBERCULOUS ABSCESSES OF BONY ORIGIN BY CONSERVATIVE METHODS.[1]

THE TECHNIQUE OF ASPIRATION.

By JACQUES CALVÉ, M.D. PARIS,
CHIRURGIEN ASSISTANT DE L'HÔPITAL MARITIME, BERCK-SUR-MER; ANCIEN INTERN DES HÔPITAUX DE PARIS;

AND

H. J. GAUVAIN, M.A., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
MEDICAL SUPERINTENDENT, LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE, ALTON, HANTS.

The Treatment of Tuberculous Abscesses.

A FIRST principle governing the treatment of tuberculous abscesses is the avoidance of their spontaneous opening and subsequent sinus formation. The formation of a sinus is almost always followed by secondary infection not only of the sinus itself but also of the focus of origin of the disease, and when this focus is an extensive bony one, as in cases of hip disease and spinal caries, the consequences which ensue are often disastrous. Profuse suppuration and fever exhaust the patient and may themselves cause death, while a general infection is not uncommon. The danger of a tuberculous abscess does not lie in its specific infection: closed, such an abscess is harmless; opened, the prognosis becomes serious. Long before the true nature of a tuberculous lesion was understood the serious results of the spontaneous opening of the abscess were recognised. In 1858 Bouvier said: "It is common to see both children and adults in whom a large abscess causes little inconvenience, but when this abscess is opened acute pain and extensive inflammation gradually exhaust, and may even kill, the patient." But if at all times there has been agreement as to the dangers of the open tuberculous abscess, there has been by no means universal agreement as to the best means to avoid this complication and the dangers to which it gives rise.

During the last century many variations have taken place in the treatment of tuberculous abscesses, owing to the different conceptions which have been held as to their nature and evolution. Three chief epochs may be considered. The first corresponds with the time before Pasteur's great discoveries, when tuberculous bony disease was not separately classified but was commonly confounded with a diffuse group of bony inflammatory conditions. During this period, in the total absence of any conception of sepsis and asepsis, treatment was almost futile. The certainty of the consequences of infection prevented rational attempts at surgical interference. Dupuytren, Larrey, and Michel, indeed, employed large incisions, but David, on the other hand, was strongly opposed to any intervention. Indeed, he states, "I have always observed that patients die in whom an abscess has been opened," and he insisted upon the avoidance of all interference.

At this time the gradual opening of the abscess by the application of caustics was in vogue, but the results were by no means satisfactory. Simple puncture, with or without aspiration (Boinet, Pelletan), had already convinced partisans. Abernethy, in England, practised the "valvular system," which consisted in evacuating the contents of the abscess by introducing the blade of a tenotome obliquely into the tissues in such a way as to form a valvular track between the skin incision and the point of penetration of the abscess cavity, this valve preventing the entrance of air. Boyer, in France, imitated this practice, naming it the "subcutaneous method," but in spite of some passing success the mortality, according to Follin's classical figures, was always considerable, being from 56 to 70 per cent. in hip disease and spinal caries. The failure of a method, which later, when better understood, was to give such marvellous results, was due to many reasons, of which the principal were imperfect local treatment: absence of or inefficient immobilisation, deplorable hygienic conditions, and, above all, complete ignorance of the necessity of adequate sterilisation of skin, instruments, and dressings.

A new era opened with the works of Lannelongue in France and Koenig in Germany. Tuberculous disease of the bone removed from the chaos of chronic bone diseases became clearly defined and took its proper place. Lannelongue studied the process of the evolution of the tuberculous abscess. He showed that its progressive extension towards the skin was not a mechanical phenomenon, as had up to that time been supposed, but was the result of primary infection and a subsequent excentric destruction of tissues by tuberculous elements advancing much as does a neoplasm. From this new "tuberculome" conception evolved logically a radical surgical treatment, which, supported by the recent discovery of antiseptics, consisted in the total removal of tuberculous tissues. This was the period of extensive surgical interference, complete removal comprising both the excision of the abscess and of its source of origin. This practice, possible and efficacious with small tuberculous foci, exposed the patient to serious risk when it was applied to extensive bony lesions. Moreover, while it was hardly ever possible to effect complete removal of the tissues, the method produced—by the extensive mutilations which it involved—deplorable orthopædic results. Resection of the hip-joint in particular, practised systematically in every case of tuberculous hip disease when accompanied by abscess, left the children on whom it was employed sadly crippled. In spinal caries it was often impossible to excise all the bony tissue invaded by tuberculous disease without removing a great part of many vertebræ. The operations which required these extensive excisions, and often considerable erasions, were followed by surgical shock which could not be stood by all patients. Moreover, the large area of absorption which these operations created exposed the patients to grave dangers of fresh inoculations of tuberculous or other organisms, and often led to the production of secondary visceral or bony lesions. Most surgeons have abandoned these extensive operations, and in France with Félizet disappeared their last defender.

---

[1] In this article the authors are especially considering abscesses in connexion with tuberculous disease of spine, hip, and knee-joint.

Next there followed a less daring and less radical surgical period which we will consider more fully as it represents to this day the recognised practice in England and the greater part of Germany and the United States. In France it has been almost completely superseded by the adoption of conservative methods (to be presently considered in detail). It is desirable to speak of this limited surgical practice which, abandoning attempts at complete removal of the more extensive bony lesions, confines itself solely to an attack on the abscess itself. Essentially it consists in curetting or excising the abscess cavity and its diverticula under the most rigorous antiseptic precautions. The incision required at the operation is then sewn up and an endeavour is made to secure its primary union. From *a priori* reasons this practice is open to many objections, objections which are confirmed by experience.

Tuberculous abscesses of deep origin such as those which complicate tuberculous disease of the hip-joint or vertebral column are, during the early part of their evolution, subaponeurotic and even sub- or intra-muscular. The aponeuroses of the muscles constitute an extremely strong natural barrier which for a considerable time impedes the advance of the abscess in its progress towards the surface. By dividing these natural barriers and then repairing them, even with all the skill the modern surgeon can bring to his aid, their strength is of necessity impaired. Moreover, it must be remembered that the abscess cavity often refills with considerable rapidity. To avoid the tension which this accumulation of fluid puts on their wound and to dispose of the fluid so collected, some surgeons insert a small drainage-tube for a short time and trust that its track will heal after its removal. Others, more confident, close the wound completely, and in such a way that the strength of the tissues is as little impaired as possible. But even here it must be remembered that the very sutures required are themselves a source of danger, as they form a track which in course of time is likely to be replaced by a sinus through infiltration from the abscess cavity. Even the greatest gentleness in manipulation may result in small areas of local gangrene, especially in the immediate vicinity of the abscess.

The tuberculous pus itself may infect the wound as it escapes from the abscess, even if the walls of the incision are guarded. Thus to deal with a deep tuberculous abscess requires infinite care and skill if these dangers are to be minimised. They must always exist and cannot be altogether avoided.

The formation of a sinus is further facilitated by the injury to which the severed tissues have previously been exposed from pressure within the abscess and to which they are again subjected by the frequent subsequent return of fluid.

It is very probable in many cases where no sinus does ensue that the abscess is a residual one, that the pus it contains is either truly sterile or contains bacilli both few in number and attenuated in virulence. But the most important fact to be considered is that dealing with the abscess cavity does not remove the cause of its formation. The primary lesion which produced it still remains, the pus reforms, the cycle in the history of the abscess recommences. The abscess is secondary to a primary lesion which, even after the evacuation of the abscess cavity, retains its activity. As Ménard in his picturesque but expressive style has often remarked, "Il est étrange, lorsqu'on veut nettoyer un appartement, de s'en tenir au vestibule." And in addition the incision required and the treatment then given to the walls of the abscess and its diverticula leave bare an extensive area ready for further inoculation and its consequences.

What are the practical results of this method? As far as the operation itself is concerned the results at first sight often appear excellent, inasmuch as at the end of a week or so the scar may be perfect. When the stitches are taken out everything appears in good order, but in many cases, after a short lapse of time, which varies from a few days to some weeks or even months, pus re-forms either in the original abscess cavity or in some part of the severed tissues. The scar becomes raised and eventually breaks down. A more or less abundant discharge follows, and almost always in spite of the application of aseptic dressings secondary infection ensues. Excision of the scar before it breaks down does not usually prevent but only postpones the formation of a sinus.

We do not affirm that sinus formation is the rule and that this method does not permit lasting and definite success, but without being able to give exact figures there is evidence that failure is frequent and equals or exceeds the number of successes. We thus arrive at the last phase in the treatment of tuberculous abscesses, the conservative method, which is the subject of this paper. Foreseen, as we have already recorded, by Boyer, Abernethy, and others, it was advocated anew by Verneuil and Verchère in 1885, but it only became generally adopted in France during the last 15 years.

Before describing this method in detail it is desirable to explain the conceptions of tuberculous disease which make it a rational one. The "tuberculome" theory alluded to requires some modifications, and we oppose to it a theory based on the defensive resources of the patient. A tuberculous lesion commonly evokes a reaction. There is the formation of a zone of resistance about the focus of the disease by the formation of fibrous tissue which encysts, limits, and tends to prevent the progress of invasion. Thus the issue is the result of two opposing forces—the disease which attacks the organism and the reaction which this attack provokes. It appears reasonable to reinforce this natural defence and diminish the virulence of the attack of the bacillus, limiting in this way its progress. The essentials for the logical treatment of tuberculous bony disease are secured by the adoption of methods which will improve the general health of the patient by improved hygiene, change of air, suitable climate, life in the stimulating breezes of the seaside or in the country, accompanied by a good and plentiful diet. General tonics in addition play their part.

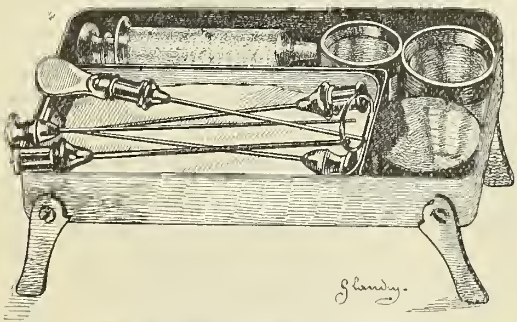
But in addition to this general treatment much may be done locally. All causes for local irritation should be suppressed, early immobilisation of the injured part should be enforced, and this immobilisation must be uninterrupted and prolonged for a very considerable period, at first at any rate, with the patient in the horizontal position. The use of plaster apparatus, the technique of which has recently been so much improved, permits the advantages of immobilisation to be secured to the uttermost. The earlier this general and local treatment can be adopted the better is the result which will be obtained, and the exact knowledge which one now possesses of the long duration of the disease enables one, by prolonging this special treatment, to avoid those recurrences which are so distressing to the patient and which were formerly so common. As Casteigne observed recently, "By these means the patient himself will make the whole fight against the bacillus."

During this rigorous treatment the properties of the abscess itself become profoundly modified. We have had constant proof of this at the Maritime Hospital at Berck and at the Home at Alton. Children attacked with Pott's disease frequently arrive walking with or without apparatus. Often they have extensive abscesses, obviously increasing rapidly and infiltrating the tissues round them. Complete immobilisation in the horizontal position suffices in the great proportion of cases, and even if it does not cause the abscess to disappear, assists in restraining its activity and arresting its evolution. Moreover, abscesses which are of a mild type, but which were recurrent before the patient had the advantage of this treatment, are cured after some weeks when he has been exposed all day to the stimulating effects of the sea or country air. The abscesses assume less those neoplastic tendencies to which we have previously alluded. They are slower in their appearance, they have less tendency to invade, and a denser encysting capsule appears as evidence of a strong reaction. Spontaneous absorption not infrequently occurs, but if the abscess progresses, then arises the indication for aspiration with or without the assistance of modifying fluids. The value of aspiration has been summed up by Gangolphe, who has said : "Though in appearance less useful than incision, aspiration is much more efficacious and much less dangerous."

The Technique of Aspiration.

Aspiration must be performed under as strict aseptic precautions as would be employed for any ordinary surgical operation. The instruments used must be of material which can be boiled and thereby efficiently sterilised.

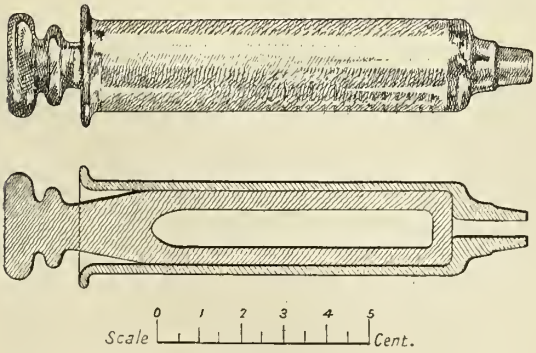
FIG. 1.



The complete apparatus for aspiration.

We are in the habit of using an all-glass syringe of some 10 to 15 c.c. capacity, as shown in the figure, with trocar, cannula, and blunt-pointed probe, of exactly the same size as the trocar. This probe is used for freeing the lumen of the cannula if it becomes blocked by thick or caseous pus.

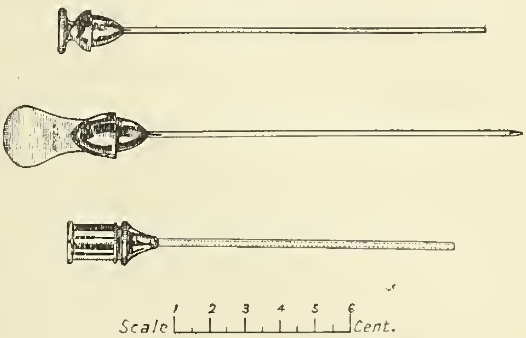
FIG. 2.



All-glass syringe.

The cannula should have no lateral opening and should not be supplied with a tap, as this is unnecessary. The length of the cannula should be at least 12 cm., so that a deep abscess can be reached and plenty of healthy tissue traversed before the abscess cavity is opened. The calibre of the cannula should not be too large, as a large bore will predispose to sinus formation. The best calibre is from 1·8 to 2 mm.

FIG. 3.



Trocar, cannula, and blunt-pointed probe.

The apparatus shown in the figure is that employed at the Maritime Hospital at Berck, and completely meets all requirements. It will be noted that the nozzle of the syringe has a large base which prevents it from breaking easily and that its lumen corresponds with that of the cannula and permits the easy flow of even thick pus. There should also be at hand in sterile receptacles those modifying fluids which may be required: sterile dressings and sterile kidney bowl, which we commonly have enveloped in sterile gauze. Sterilised indiarubber gloves should be used by the surgeon for a double purpose. In the first place they reduce the risk of infection, and, secondly, they prevent the fingers from being saturated with the modifying liquids employed, which leave a strong and persistent odour.

The skin of the patient must be thoroughly and adequately prepared as for an ordinary operation, and in addition to sterilised towels we commonly use a similar towel with an aperture of about the size of a five-shilling-piece. Through this aperture the aspiration is made.

Precautions to be taken before aspirating.—The limits of the abscess cavity should be ascertained with great care and its relations with neighbouring organs established. It should be remembered that vessels or viscera in the neighbourhood may be displaced by the presence of the abscess and their positions should be ascertained by palpation or percussion. As a rule, it is not necessary to employ a general anæsthetic, and we only use a general anæsthetic under exceptional circumstances. A local anæsthetic of ethyl chloride is usually all that is required. To prevent the child being frightened by the unfamiliar sights of an operating theatre a screen has been placed across the operating table at Alton, as in the illustration appended (Fig. 4), which screen is covered with a sterilised towel. The patient is not brought into the theatre until everything is ready, and is then quickly placed on the table and the towel fixed on the screen, thereby preventing him from seeing the manipulations which have to be employed. The dressings are rapidly removed, the skin frozen, and the aspiration performed. During the operation the patient is entertained by a nurse, who especially accompanies him for that purpose. With adults, of course, even these precautions are not required.

The actual details of the aspiration require some further description. The trocar should be inserted through as thick a layer of healthy tissue as possible before the abscess cavity is entered, and, furthermore, where possible, the highest point of the abscess cavity should be penetrated, as aspiration into a dependent part of the abscess is more likely to result in the formation of a sinus than if the upper part of the abscess is tapped. Two movements should be employed in the insertion of the trocar—the first, a sharp one, perforates the frozen skin ; the second, slow and methodical, guides the point of the trocar into the abscess cavity, it often being possible to hold the abscess itself in the free left hand. Very little experience enables one to ascertain when the abscess cavity has been entered as there is then a sensation of freedom which is exceedingly characteristic. The trocar is now withdrawn and the pus escapes with more or less ease, according to the tension inside the abscess cavity. Soon the flow of pus ceases and the nozzle of the syringe is now introduced into the outer end of the cannula and more pus withdrawn.

It is desirable to aspirate gently and to avoid any violent manipulations. Sometimes the opening of the cannula is blocked by caseous pus and then the lumen is cleared by the insertion of the probe to which we have already alluded. The quality of the pus varies considerably from a sero-purulent to a thick glutinous fluid, containing masses of caseous pus. According to the consistency of the pus is largely decided what modifying fluids, if any, should be employed.

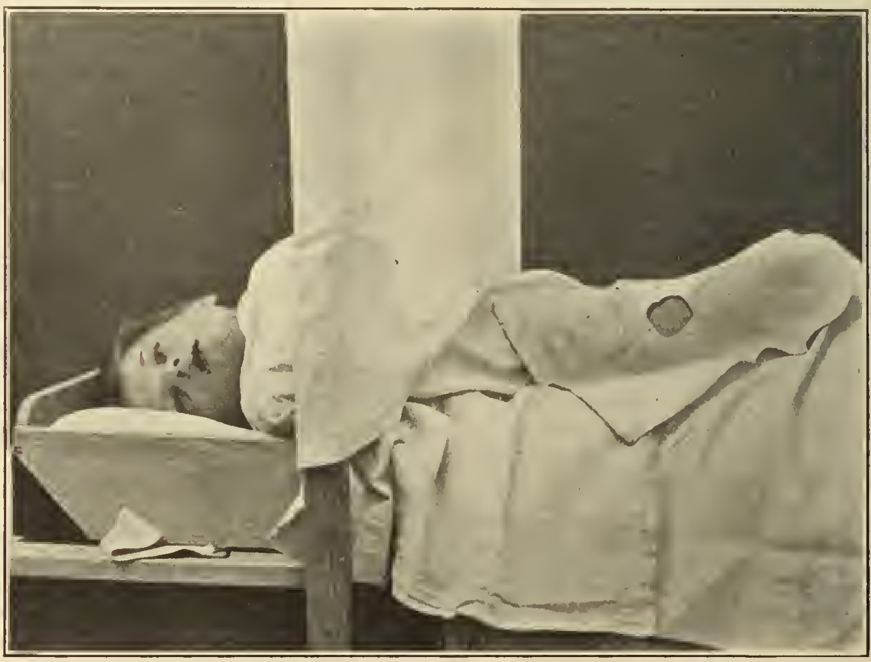
The removal of the cannula.—This is a delicate point in the operation and on it may depend subsequent sinus formation, for unless it is removed with care the track may become infected as the cannula is withdrawn. It is often useful to aspirate with the syringe during the removal, as the vacuum thus obtained keeps in the cannula the fluid which it contains and prevents its escape into the track while it is being withdrawn. As soon as the cannula is removed the track it has left should be squeezed between the fingers, and after having washed the part with alcohol and ether a dressing should be placed over the minute wound which will keep it closed and compressed. The presence of a dressing prevents secondary infection, which might otherwise take place, especially if, as occasionally happens (though this should not occur), a certain amount of liquid escapes through the skin opening after the aspiration has been made. The employment of a trocar of small calibre renders this accident exceptional. In general the scar of the puncture heals rapidly, and at the end of a few days the dressing may be removed.

An abscess may be cured after one single aspiration. This, however, is not the rule. In general the fluid re-forms in the abscess cavity, and after a period of time, which varies between one and many weeks, a new evacuation is necessary. The tension in the abscess cavity will be the indication when this new aspiration is required. In favourable cases the abscess re-forms in smaller volume and the pus which is withdrawn by succeeding aspirations besides being diminished in quantity, is altered in quality. It is more sanious and sometimes presents a more fluid appearance. This is a good omen and an indication of approaching cure. It is not rare, also, to perceive, at the moment the point of the trocar pierces the wall of the abscess, a sensation of resistance due to the formation of fibrous tissue. If these favourable results are not obtained at the second aspiration, they are usually manifest at the third or fourth. Commonly three or four simple aspirations are necessary to obtain a definite cure in a tuberculous abscess which is easy to empty and of medium severity. Lesser quantity of pus, alteration in its quality, sclerosis of the walls, and subsequent retraction of the abscess cavity are the characteristics of the process of cure.

Simple aspiration is not, however, always as efficacious as in the example just considered. In some cases the trocar penetrates a cavity full of thick pus and caseous material which will not flow through the cannula. The progress of the abscess is not always arrested. It may increase in volume, invading the surrounding tissues, as described by Lannelongue, reaching the skin and there causing ulceration and sinus formation. In such cases, where, in spite of repeated aspirations, the pus rapidly re-collects, where the abscess increases in size, where the surrounding tissues become more and more involved, the prognosis is much more serious and more active treatment than simple aspiration is urgently indicated. It is in such cases that the modifying liquids should be employed.

The common modifying liquids.—The employment of injections of medicated substances into the cavity of a cold abscess dates from the most remote period of medicine. Many pages would be required to give even an incomplete list of the substances used since the time when Fabrice of Aquapendente employed a mixture of wine and oxymel, to our own day, when ferments have been injected. Villemin, in a paper read before the Society for the Scientific Study of Tuberculous Disease, on "The Treatment of Tuberculous Glands," November, 1907, cites : "L'oxymel (Fabrice d'Aquapendente), le vin chaud (Dupuytren), le nitrate d'argent (Velpeau), la teinture d'iode (Boinet et Lugol), le sublimé (Bust et Richet), l'alcool, le sulfate de zinc, la liqueur de Villatte, l'eau iodée, l'iodure de potassium (Bienfait), la solution iodo-iodurée (Félizet), la solution iodotannique (Forgue), l'acide phénique (Hueter, Koenig, Phelps), le calomel (Marcel), les sels d'arsenic (Reclus, Volkmann), l'éther iodoformé (Verneuil), l'huile iodoformée (Mikulicz), le phosphate acide de chaux (Kolischer), le baume de tolu (Sayre, Landerer), l'acide cinnamique (Landerer), la solution huileuse d'essence de girofle (Mannoti), le chlorure de zinc (Lannelongue, Bouilly), la papaine (Bouchut), la teucrine (Mosetig), l'acide lactique (Rafin), le sous-nitrate de bismuth, l'acide salicylique, le thymol (Kocher), le tanin (Ceccherelli), le salol (Grossi), les naphtols A et B (Bouchard), le naphtol camphré (Périer, Reboul), la thiosinamine (Bekess), l'huile créosotée et l'aristol, le

FIG. 4.



Patient prepared for aspiration. The screen hides the operator from the patient.

camphre, le gaïacol, le gaiacol et l'iodoforme (Mosetig), la pyoctanine, l'eau oxygénée (Luton), la formaline, &c." One should add: le thymol camphré (Ménard, Koch), l'éther sulfurique (Vernier), la pancréatine (Calot), la cendre d'os (Frommer), l'eau de mer (Cathelin), l'eau de salins (Reynier), le gaïacol camphré (Simon), la trypsine (Kantorowicz, Fiessenger, et Coyen), le nucléinate de soude (Goldenberg), le chlorure d'or (Bué), l'huile goménolée, &c.

Out of this long list of chemical products we will especially call attention to iodoform dissolved in various vehicles, camphorated naphthol, or, better, its substitute camphorated thymol, which are those commonly employed and which one might call "classical modifying liquids." We shall consider them more especially with regard to their posology, their preparation, and the precautions which it is necessary to observe in their use by reason of their toxicity.

Iodoform.—Since the researches of Verneuil and Verchère in 1886 this substance has become very popular in France, and has taken the place of solutions of iodine in the treatment of tuberculous abscesses. Much more active than these it appears to owe its power to its transformation into nascent iodine under the oxidising influence of organic tissues. It may be either employed in ethereal solution (5 to 10 per cent.) or mixed with oil alone, or mixed with oil combined with guaiacol and creosote. The combined mixture which we use is of this formula: Iodoform, 5 grammes; ether, 10 grammes; guaiacol and creosote 2 grammes of each; and sterilised olive oil 100 c.c. This formula is very similar to that employed by Lannelongue senior. Of the other solutions of iodoform, iodoform combined with ether is most commonly used.

Iodoform combined with ether.—Certain precautions should be observed in the use of this solution, for it may cause accidents of two types—mechanical and toxic. Mechanical accidents were frequent during the period when iodoform ether was first used and were due to the rapid volatilisation of the ether when in contact with the tissues. This volatilisation caused excessive distension of the abscess cavity and was a source of extreme pain to the patient. Sometimes, indeed, it caused syncope, blistering of the skin, and rupture of the abscess (noted by Mignon, Reclus, and others). It is easy to avoid such accidents. Small doses alone must be used. The ether in liquid form must not be allowed to escape through the cannula because the most beneficial action of the iodoform would thereby be lost. During the volatilisation of the ether the iodoform is projected in the form of powder on the walls of the abscess cavity. To obtain this result 2 to 5 cubic centimetres of iodoform ether should first be employed and gently injected into the abscess cavity, the same syringe being used as in the aspiration of the abscess. The fluid being injected the piston is left at the bottom of the syringe. When the ether, acted upon by the warmth of the tissues, commences to evaporate, the piston is gradually pushed away. The syringe is then detached from the cannula and the ether escapes hissing. As soon as a certain quantity of liquid ether appears not volatilised, the syringe is replaced and kept in position until new volatilisation is indicated by the new ascent of the piston. When all the ether appears to have volatilised the cannula may either be withdrawn or, if thought desirable, the injection started anew, but the cannula is not withdrawn until one is assured that no liquid ether remains in the cavity of the abscess.

Toxic accidents.—Iodoform is usually only toxic in doses in excess of those usually employed. Usually from 10 to 20 cubic centimetres of iodoform ether produces no toxic effects on the patient, but, nevertheless, it is necessary to remember that certain subjects possess a special idiosyncrasy towards iodoform, and in these, complications may arise which, though they may not cause death, are sufficiently serious to give the surgeon anxiety. The complications due to an excessive dose of iodoform in a susceptible patient may be both local and general. Locally a violent inflammatory reaction may be produced, with pain, heat, redness, and œdema of the skin. The general symptoms would be rise of temperature, acceleration of the pulse, restlessness, anxiety and irritability, sleeplessness and tremor; skin eruptions have been noted; irritation of the respiratory tract and anuria and albuminuria have more rarely been reported. In some cases nausea and gastric disturbances occur. These untoward symptoms should never be produced and can be avoided by care in the employment of iodoform. The first time iodoform ether is employed only a weak dose of from 2 to 5 cubic centimetres should be used, and in this way the susceptibility of the patient can be safely tested. In general it is not necessary to exceed, even with patients who would tolerate it, doses of 10 cubic centimetres.

Camphorated naphthol.—In spite of the high favour which this substance enjoys amongst certain surgeons we have abandoned its use entirely because of its toxicity. Ménard of Berck reports two fatal cases in his own practice, and has replaced it entirely by camphorated thymol. In May, 1904, Guinard (surgeon to the Hôtel Dieu of Paris) made a noteworthy communication to the Surgical Society on the toxicity of camphorated naphthol. He collected details of 14 cases of severe intoxication with six fatalities. Amongst these accidents was one caused by the injection of ¼ cubic centimetre of camphorated naphthol into a suppurating lymphatic gland (Grosjean of Berck), and in another 10 minims (Forgue). In neither of these cases was there any error in the technique of its introduction.

Camphorated thymol.—This substance, though having the same action on caseous material, is far less toxic than camphorated naphthol. Many thousands of injections have been made at the Maritime Hospital at Berck and no fatality has been recorded. Nevertheless, it is toxic and it is necessary to be cautious in its use. Three slight accidents have occurred, and one more serious, in which the patient vomited and had epileptiform fits. Risacher, in his Paris Thesis, 1907, states that the toxicity of camphorated naphthol is three times as great as that of camphorated thymol.

Camphorated thymol is prepared by mixing two crystalline bodies—thymol and camphor—in the proportion of 2 parts camphor to 1 part thymol. The result is a syrupy liquid of strong odour, soluble in ether, alcohol, and chloroform, but insoluble in water. Under the microscope after filtration it is shown to be a true emulsion composed of little globules. For fear of capillary embolism it is desirable, according to Ménard, to add to this mixture an equal part of sulphuric ether, which dissolves the emulsified globules. We would advise that the dose of the mixture of these three substances should not exceed 5 cubic centimetres; from 2 to 3 cubic centimetres are usually sufficient.

The Mode of Action of these Modifying Liquids.

Iodoform.—After iodoform has been employed in the manner suggested, a reaction in the empty abscess cavity, of more or less intensity, usually manifests itself. It is manifested by the reproduction of liquid in the abscess cavity accompanied with some slight discomfort with slight elevation of temperature. The liquid thus produced may become absorbed completely after the first injection, but this rapid cure is not the rule. More often, after some absorption, the quantity of liquid in the abscess cavity still further increases and a fresh aspiration and injection become necessary.

The liquid aspirated is generally characteristic. It is usually blood-stained pus, smelling strongly of iodoform, and is commonly more fluid and more easily withdrawn than the pus which first occupied the abscess cavity. This is a good sign. Palpation of the abscess after evacuation shows that the walls have become thicker.

Iodoform ether appears to act as a drying and as a sclerosing agent. It has very little action if the pus in the cavity was at first caseous, and in fact under these circumstances its use would not be recommended, as here the caseous masses may obstruct the cannula and prevent the exit of the volatile ether and thereby allow undue distension of the abscess. If iodoform is to be employed in an abscess cavity which has contained caseous pus it is preferable to use it in an oily solution, as this danger is thereby avoided.

In an abscess containing caseous pus, however, the use of camphorated thymol is, as a rule, indicated, as this substance possesses a true liquefying action on the caseous masses. They become softened and melt in a space of time which varies, as a rule, from 24 to 48 hours. Reactionary phenomena are provoked, more constant and more accentuated than with iodoform. There may be general malaise with slight fever, but this general reaction is very rarely severe.

The aspiration, practised two days after the injection of the camphorated thymol, results in the withdrawal of a viscous liquid which adheres to the walls of the syringe. It is usually reddish-brown or chocolate in colour, and exhales a strong odour of camphor. One injection of camphorated thymol may suffice.

The fluid may return into the abscess cavity and require new aspirations, but if it assumes its original caseous form a fresh injection of camphorated thymol will be indicated, the consistency of the pus being the guide to its new employment. It should be borne in mind that the injection of this substance into the abscess cavity may, by its irritating action, give a stimulus to the primary lesion, but such is uncommon in the small doses employed.

How do these modifying fluids act?—After the discovery of the bacillus of Koch, it was thought that their efficacy depended on their bactericidal powers and the question of which was the best to employ resolved itself into ascertaining which was the most powerful antiseptic. (See Villemin's Thesis.) In reality, however, there is no complete parallelism between the bactericidal action of an antiseptic *in vitro* and its efficacy when in an abscess cavity. As an example of this, iodoform, one of the most powerful modifying agents, is one of the feeblest antiseptics (Duclaux). Its selective action on Koch's bacillus cannot be doubted (Villemin, Rovsing, Tilanus, Troje, and Tangl). Nevertheless, *in vitro*, its retarding action on the development of the tubercle bacillus is inconsiderable. It appears, therefore, logical not to ascribe the chief merit of these modifying fluids to their antiseptic action. Anatomically, it is difficult to understand how this action could be efficaciously exercised in abscess cavities which are frequently multiple, multi-locular, and often connected with the primary lesion by a long, sinuous track. So that, without denying some value to the bactericidal action of these substances, it is necessary to seek elsewhere for a full explanation of their efficacy.

We have already alluded to the profound modification which takes place in pus and caseous material when subjected to their action in a closed abscess. If a tuberculous abscess be opened and to its walls be applied one of these agents (iodoform, naphthol, thymol, camphor, or others having similar action). it is possible to follow with one's eyes the changes which take place. The appearance of the tissues visibly changes, the caseous masses appear to become dissolved, and in their place is seen a red injected surface covered with small healthy granulations. True cleansing of the abscess cavity is produced—one might call it a chemical curetting. And as the granulations become more marked, and the fibrinous walls become denser and thicker, the secretions become less abundant. Cytological and chemical examination of the pus before and after injection of the modifying fluids furnishes the key for the explanation of the action which they produce. The cellular condition of the pus is altered and the changes may be summed up as ollows.

After the injection the pus soon becomes full of polynuclear leucocytes. It contains a well-defined fibrinous network, entangled in the meshes of which are cellular débris and red blood corpuscles. In other words, it contains the elements associated with inflammatory reaction, and when camphorated thymol is employed cellular necrosis is the prevailing phenomenon (Calvé and Hamel). The result, therefore, is that this aseptic irritation provokes active dilatation, accompanied with diapedesis of white corpuscles, fibrinous exudation, proliferation of the fixed cells, and, with thymol, destruction and necrosis of the caseous masses. A chronic abscess, then, becomes transformed into an acute but aseptic abscess.

The researches of Coyon and Fiessenger have offered also a chemical explanation of the phenomena recorded. In the pus of an ordinary abscess they have shown that there exists a proteolytic ferment analogous to the tryptic ferment of the pancreas, which has the power to digest coagulated albumins and to transform them into peptones and amido acids. This ferment is liberated in the destruction of the polymorphonuclear leucocytes. It does not exist in the pus of an ordinary tuberculous abscess, and this is explained by the absence of polymorphonuclears in these. The injection of the modifying fluid is the cause of their appearance. Clinical experience supports the results obtained by this histological and chemical research. The injection of modifying fluids is always followed by the phenomena of reaction, more or less marked, but always constant. Interesting in this connexion is a recent paper written by Professor D. MacEwan on the Antiferment Treatment of Acute Suppuration.[2]

Indications for the employment of modifying fluids.—On this point there is some diversity of opinion. Some, as Gangolphe of Lyons, do not employ these injections but simply aspirate, others invariably follow aspiration by injection. To us the middle course appears preferable. Where aspiration alone is sufficient, injection is not necessary, but when that will not procure a cure the use of properly selected modifying fluids is clearly indicated. In cases where there is much caseation simple aspiration is obviously inefficient and sinus formation will, if the abscess is increasing in size, inevitably be the result. This complication is, as we have already indicated, the one which it should be our most strenuous endeavour to avoid.

We have not hesitated to raise numerous arguments against the systematic employment of modifying fluids. We have alluded to their toxicity, to the manipulations which complicate the technique of operation when they are employed, to the increase in the chances of infection which may be brought about, and, above all, to their distinct irritative action which may give rise to undue stimulus of the causal lesion. The very puncture through which they are introduced may become a sinus, a sinus it is true which is usually a temporary one, which very rarely does occur, and which is never as serious as the sinus which follows incision. These reservations being made, and granting to the full what dangers may occur by their use, the conclusion arrived at is that these fluids may be advantageously employed in certain cases—that their use undoubtedly diminishes the risk of one of the most serious complications which can follow a tuberculous abscess, the formation of a sinus.

To sum up the indications for this method of treatment. 1. When simple aspiration is sufficient to empty the contents of the abscess, even though such aspiration may have to be repeated, a cure may be obtained without further operative treatment and without injection. 2. If in spite of repeated simple aspiration the pus re-collects more abundantly each time, the abscess increases in size, and the walls do not show signs of becoming denser by the formation of fibrous tissue, then iodoform ether will be indicated on account of its drying and sclerosing properties. 3. If the contents of the abscess are caseous, then cautious injection of camphor-thymol-ether solution in doses of from 2 to 5 cubic centimetres, not exceeding the latter, should be employed. If the inflammatory action is too active after this injection, moist dressings to the part will restrict the inflammation during the period which elapses between the injection and the time the material injected has accomplished its work in dissolving the caseous material and permitting its evacuation. (Excessive inflammation is exceedingly rare in properly selected cases.) 4. The abscess sometimes increases rapidly, is extensive, the tissues around are being invaded, and the general condition of the patient is unsatisfactory. This form is rare and coincides usually with defective treatment of the initial lesion, either by faulty immobilisation or by neglect of the general hygienic treatment, or both. In this case one's first duty is to make good the defects in treatment—to adopt rigorous immobilisation and to see that the general treatment is conducted on rational and hygienic lines. If in spite of all these aids to treatment of the abscess it does not decrease in size further measures must be adopted. Simple aspiration will not empty the abscess of its contents, because they are usually in these circumstances caseous. Iodoform ether is contra-indicated, because the presence of caseous material may obstruct the cannula and may provoke accidents of a mechanical nature. Camphorated thymol is too irritating and may act on the primary lesion and so accelerate its evolution. Here, then, the oily mixture of iodoform, containing creosote and guaiacol, according to the formula we have suggested, should be used.

The Results of the Conservative Method.

We would emphasise the necessity of combining the treatment of the causal lesion with that of the abscess itself. That is to say, the three cardinal principles should be adopted: (1) maximum employment of general treatment; (2) strict and uninterrupted immobilisation in the horizontal position over a prolonged period, if the lesion is one of the spine, hip, or knee; and (3) the employment of aspirations with or without injection of modifying fluid. The results obtained are very gratifying and cure takes place in from 95 to 98 per cent. of cases so treated.

---

[2] Brit. Med. Jour., Jan. 22nd, 1910.

Sinus formation.—This occurs in the proportion of from 2 to 5 per cent. of cases. With perfect technique it would be even less. We are not in this paper considering the treatment of open tuberculous lesions where sinuses already existed. We simply state that the sinus formation which may unhappily follow aspiration never has the same grave features as are present with sinus formation secondary to surgical interference or spontaneous opening of the abscess. A sinus which has formed as a result of aspiration is a minute one, and is usually healed without secondary infection, which is easier to prevent. It must be extremely rare that extensive infection resulting in prolonged suppuration, and often in lardaceous disease, occurs in properly conducted treatment on the lines we have indicated. One may say that a fatal result may always be avoided except in those rare cases which will not respond to any form of treatment.

Statistics.

We will now consider the statistics for the year 1908–09, which comprise all cases of hip disease and spinal caries complicated by abscess which have been treated by this method by one of us at Berck. There were 29 cases of spinal caries with abscesses. Of these 27 were cured, 2 remain with sinuses which are not infected and in which the discharge is diminishing and the general condition is good. Hip disease, 33 cases. Of these 32 were cured. One remained with a sinus. In this case the sinus was serious, due to secondary infection caused by improper sterilisation of the instruments employed in aspiration. The number of aspirations was from 1 to 21 in each case. The mean in hip disease was 4 to 5, in Pott's disease 2 to 5. The total result in 62 cases was 59 cures. At the Cripples' Home at Alton, during the last months of 1909, 23 closed tuberculous abscesses connected with lesions in the spine, hip, and knee have been treated by aspiration. Eight spinal abscesses were aspirated. The greatest number of aspirations required for any one case was 12, the average number required was 3. All are apparently cured and in no case has a sinus formed. Thirteen cases of abscess in connexion with tuberculous disease of the hip were treated by aspiration. Of these 12 have been apparently cured. In one case a small sinus persists, but is not infected. The greatest number of aspirations required for any one case was 14. The average number was 4. Two abscesses in connexion with the knee-joint have been similarly treated, and both apparently cured. One case was especially interesting. The patient was suffering from tuberculous disease of both hip-joints. An abscess had been opened in London behind the left hip-joint and a sinus persisted when the child was admitted to the home. Another abscess was found unopened in front of the left hip-joint and a third abscess was found unopened in connexion with the right hip-joint. These two latter abscesses were treated by aspiration and are both healed. The sinus, however, with which the patient arrived still persists. A considerable number of cases have been admitted with abscesses, but where these were small and have steadily grown less, under adequate mechanical treatment, applied under the best hygienic conditions, no aspirations were performed. In the course of time the majority of these disappear without any surgical interference whatever.

Bibliography.—Abernethy (in Bouvier): Maladies de l'Appareil Locomoteur, p. 61. Ashworth : Psoas Abscess Treated by Repeated Aspiration and Injection of Iodoform Emulsion, New Zealand Medical Journal, Dunedin, 1895. Barrett : A Large Psoas Abscess Successfully Treated by Repeated Aspiration, New Zealand Medical Journal, 1895. Beck : Bismuth Subnitrate, International Tuberculosis Congress, Washington, 1908, vol. ii., p. 219. Bouvier : Maladies de l'Appareil Locomoteur, 1858. Bué : Chlorure d'Or, Thèse de Paris, 1901. A. Calot : Clinical Lecture on the Treatment of Local Tuberculous Lesions by Injections, Medical Press and Circular, London, March 31st, 1909. F. Calot : Technique du Traitement des Tumeurs Blanches, Masson, Paris, 1906. Coyon, Fiessenger, et J. Laurens : Journal des Praticiens, No. 40, Oct. 20th, 1909. Thomas W. Dewar : On Iodoform, British Medical Journal, 1905. N. Fiessenger et P. L. Marie : Journal de Physiologie et de Pathologie Générale, July, 1909. Frommer : La Cendre d'Os Substituée à l'Iodoforme Deutsche Medicinische Wochenschrift, March, 1902. Gangolphe : Abcès Tuberculeux symptomatiques de Lésions Osseuses, Congrès International de la Tuberculose, 1905 ; Arthrites Tuberculeuses, Nouveau Traité de Chirurgie, 1908. V. P. Gibney : Journal of the American Medical Association, Oct. 29th, 1904. O. Gruner : The Chemical Composition of Tuberculous Effusions, British Journal of Tuberculosis, July, 1909. Guinard : Intoxications par le Naphtol Camphré, Société de Chirurgie, May, 1904. Hoffa : Injection of Abscesses, Orthop. Chir., fifth edition, p. 306. Jochmann et Baetzner : Trypsin in Cold Abscesses, Münchener Medicinische Wochenschrift, Dec. 1st, 1908. Josset : Thèse de Bordeaux, 1908. Kautorowicz : Trypsin in Tuberculous Glandular Disease, Münchener Medicinische Wochenschrift, July 13th, 1909. Kirmisson : Les Difformités acquises de l'Appareil Locomoteur, p. 12. Koenig : Tuberculous Disease of Bones and Joints, 1885. Lannelongue : Abcès Froids et Tuberculose Osseuse, 1881 ; Tuberculose Vertébrale, 1888. David MacEwan : The Antiferment Treatment of Acute Suppuration, Brit. Med. Jour., Jan. 22nd, 1910. Mauclaire : Traitement des Abcès Tuberculeux, Journal de Médecine de Paris, Sept. 10th, 1905. Les Abcès Froids Tuberculeux, Injections Modificatrices en Position Déclive, Médecine Moderne, No. 25, June 21st, 1905. V. Ménard : Étude Pratique sur le Mal de Pott, 1900 ; Étude sur la Coxalgie, 1907. Ch. Mestre : Traité des Abcès Froids par les Injections d'Ether Iodoformé, Thèse de Paris, 1906. Middleton Connon : On Iodoform, British Medical Journal, July, 1903. Mikulicz : Conservative Treatment of Tuberculous Joint Disease, Henle, Livingstone, 1900. Müller and Jochmann, Münchener Medicinische Wochenschrift, 1906, No. 26. Ortal : Thèse de Paris, 1907. Pravaz : Glycerine Iodoformée, Thèse de Lyon, 1903. Reboul : Contribution à l'Etude du Traitement de la Tuberculose des Os, etc., par l'emploi des Antiseptiques et du Naphtol Camphré, en Particulier, Thèse de Paris, 1890. Renaud : Thèse de Lyon, 1906. Reynier : Société de Chirurgie, March 21st, 1907 ; May 6th, 1908 ; Congrès International de la Tuberculose, 1905. Ridlon and Blanchard : Further Observations on the Bismuth Paste Treatment, American Journal of Orthopedic Surgery, August, 1909. Risacher : Thymol Camphré, Thèse de Paris, 1907. Verchère : Traitement des Abcès Froids par les Injections d'Ether Iodoformé, Revue de Chirurgie, 1886 Verneuil : Des Injections d'Ether Iodoformé, Congrès Français de Chirurgie, May, 1885. Vernier : Essais de Traitement des Tuberculoses Locales par l'Éther Sulfurique, Thèse de Paris, No. 19, 1907. Villemin : Bulletin Mensuel de la Société d'Études Scientifiques sur la Tuberculose, No. 7, 1907 ; Etude Expérimentale de l'Action de quelques Agents Chimiques sur le Développement du Bacille de la Tuberculose, Thèse de Paris, 1888. Volkmann : Notes on Surgical Tuberculosis, Wiener Medicinische Blätter, 1885. Walter : Société de Chirurgie, July, 1905 ; December, 1907. Weisnager : Glycerine Iodoform, Deutsche Medicinische Wochenschrift, August, 1903.

ON THE VARIATIONS OF TEMPERATURE IN PHTHISIS DURING THE MENSTRUAL PERIOD.

BY CUTHBERT G. WELCH, M.B., B.S. LOND.,

LATE SENIOR RESIDENT MEDICAL OFFICER AT THE MOUNT VERNON HOSPITAL FOR CONSUMPTION, HAMPSTEAD.

THE temperature in pulmonary tuberculosis is now generally recognised as an important guide in regard to diagnosis, prognosis, and treatment. Recent observations have shown that exercise exerts an important influence upon the temperature, and variations in the temperature chart have been taken as a measure of the degree to which auto-inoculation occurs, and have further been employed in graduating the amount of exercise the patient is allowed to perform. Moreover, the temperature is of great importance in studying the effect of therapeutic doses of tuberculin when this is administered. It is therefore a matter of importance to study carefully any variations which may occur in it in connexion with the normal functions of the body. It is well known that menstruation is associated in healthy women with certain variations in the body temperature. Disturbances of this function are so commonly met with in pulmonary tuberculosis in all stages that it would seem to be a matter worth investigation as to whether any greater change takes place in this disease than in the normal.

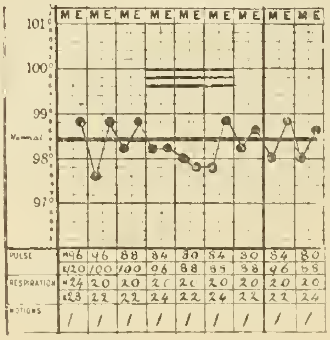
I have therefore analysed the records of 500 female patients between the ages of 18 and 45 years suffering from this disease in the Mount Vernon Hospital, the honorary medical staff having courteously granted me full use of them. In this institution the patients' temperatures are taken twice daily at 12-hourly intervals, the morning temperature being charted between 5 and 5.30 A.M. and the evening between 5 and 5.30 P.M. It has been the practice for many years past to mark the menstrual period on the patient's chart by horizontal red lines above the temperature curve, commencing on the day that the flow begins and continuing them day by day until the end of the period ; in this way the effect if any of the catamenia on the temperature can be readily observed. For convenience of classification the cases have been divided into the three classes suggested by Dr. Turban[1] of Davos :—A, early cases, including under this head all those with not more than one lobe affected ; B, cases with two lobes affected ; and C, advanced cases—namely, those with three or more lobes affected or complicated by laryngeal or intestinal implication.

In Class A there were 284 cases, being 56·8 per cent. of the total; the catamenia showed an influence on the temperature in 68 of these—that is, 23·9 per cent. of them. The most usual type of change proved to be a depression varying from 1° to 1·5°, those cases having most pyrexia showing the widest range of change; the depression in the majority of cases commenced with the flow, in others it was deferred to the second or third day. In only three instances did the fall precede the flow. The details of this class are as follows:—Amenorrhœa, 34 (11·9 per cent.); no influence on the temperature, 182 (64·0 per cent.); showing temperature variations, 68 (23·9 per cent.); total, 284 (99·8). Of the 68, 51 showed a depression in temperature (75 per cent.); 14 showed a rise in temperature (20·5 per cent.); and 3 showed a rise before the period, depression during, and a rise after the period (4·4 per cent.). (See Charts 1, 2, and 3.)

---

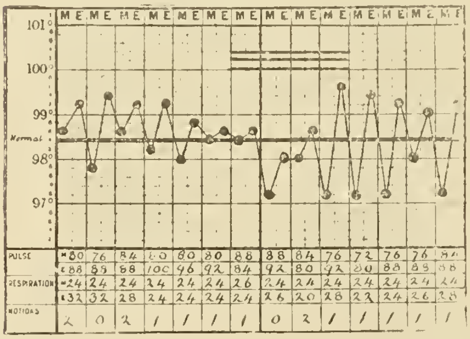
[1] Turban : Diagnosis of Tuberculosis of the Lung, 1905, p. 55.

CHART 1.



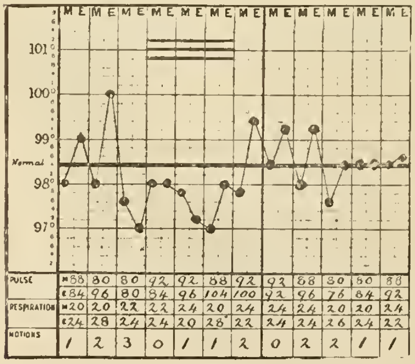
A simple depression in temperature during the flow, the most usual type of change in Class A. The horizontal lines on the chart indicate the duration of the flow.

CHART 2.



A slight premenstrual fall, with a more pronounced depression during the flow. Class A.

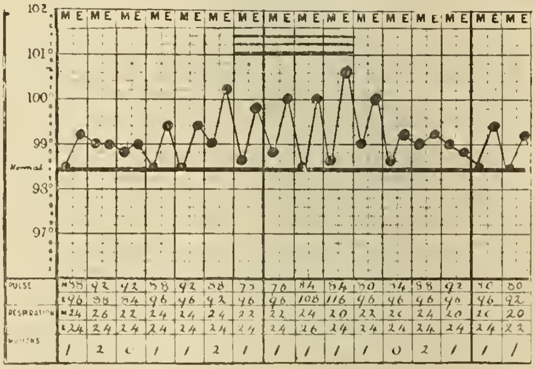
CHART 3.



A premenstrual rise of temperature with a depression during the period, followed by a rise for three days after the period. Class A.

In Class B the cases numbered 160; in these the catamenia had an influence on the temperature in 30 cases (18·7 per cent.). The change in the majority of these was a rise in temperature either for one or two days preceding the flow and continuing during the period or rising during the menstruation for one or more days. The next commonest effect was a fall in the temperature during the period. This was noticed in 12 cases. Details in this class are as follows:—Amenorrhœa, 38 (23·7 per cent.); no influence on the temperature, 92 (57·5 per cent.); showing temperature variations, 30 (18·7 per cent.); total, 160 (99·9). Of the 30, 12 showed a depression (40 per cent.); 16 showed a rise (53 per cent.); 1 showed a rise before and depression during the period (3·3 per cent.); and 1 showed a depression during the period followed by a rise afterwards (3·3 per cent.). (See Chart 4.)

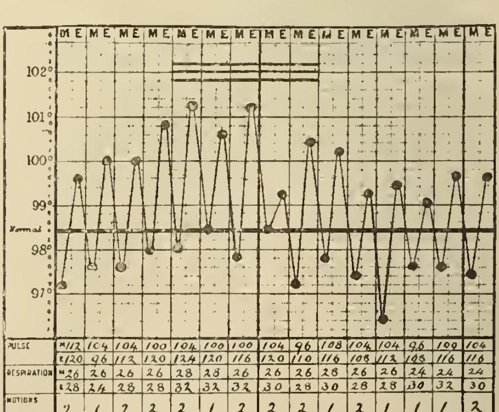
CHART 4.



Showing a rise on the day preceding the flow, which continued during the period. Class B.

Class C contained 56 of the cases; in 7 of them the general character of the temperature was altered by the menstruation. In more than half of these the effect was to raise the temperature both before and during the period. The number of cases in this group showing the temperature variations is comparatively small, largely owing to the striking increase in the proportion of cases with amenorrhœa. Details in this class are as follows:—Amenorrhœa, 35 (62·5 per cent.); no influence on the temperature, 14 (25 per cent.); showing temperature variations, 7 (12·5 per cent.); total, 56 (100·0). Of the 7, 1 showed a depression (14·2 per cent.); 4 showed a rise (57·1 per cent.); 1 showed a rise before the period, depression during, and rise after the period (14·2 per cent.); and 1 showed a rise before the period and a depression during the flow (14·2 per cent.). (See Chart 5.)

CHART 5.



Shows a rise of temperature, both before and during the period. Class C.

The results may be briefly summarised in the following table:—

No. of lobes.	No. of cases.	Temperature variations.	Depressed.	Raised.	Other changes.	Amenorrhœa-
		%	%	%	%	%
1	284	68 = 23·9	51 = 75·0	14 = 20·5	3 = 4·4	34 = 11·9
2	160	30 = 18·7	12 = 40·0	16 = 53·3	2 = 6·6	38 = 23·7
3 or more.	56	7 = 12·5	1 = 14·2	4 = 57·1	2 = 28·4	35 = 62·5

The accounts given in the text-books on the influence of menstruation on the temperature in healthy women are not entirely concordant. Lewers[2] says the temperature is a little raised, about half a degree for some days before the flow, similarly falling again during and after it. Galabin,[3] quoting Stephenson, says: "The curve of temperature is above the mean for about half the month, rising to about half a degree above the mean line; it crosses and falls below that line about or shortly before the onset of menstruation and sinks to a similar depth below it for about a similar interval." Hart and Barbour[4] state that during the few days before the flow the temperature is slightly raised; J. C. Edgar[5] says the temperature is slightly elevated often by 1° F. at the onset; whilst Webster[6] says the temperature rises half a degree above the average before the period, falls during the flow, and goes down to half a degree below the average immediately after the period. Dudley[7] says that there is a slight elevation of temperature at the onset. The most explicit account that I have been able to find is that of Dr. A. E. Giles,[8] who states that "the temperature begins to rise about the middle of the inter-menstrual period, attaining its maximum two days before menstruation. There is a sudden drop on the day before the flow begins, with a second slighter drop towards the end of the period. It then rises slightly for the first week after the cessation of menstruation, and there is a third fall at the beginning of the intermenstrual period. The total variation only amounts to half a degree Fahrenheit." He also finds that "the pulse curve corresponds fairly closely with that of the temperature." Giles's results are in general accord with those of Jacobi[9] and Reinl.[10]

It will be seen that the changes associated with pulmonary tuberculosis are, as might have been expected *a priori*, progressively more marked in proportion to the severity and extent of the disease. Thus in early cases the changes most frequently found are a depression in the temperature, somewhat more marked but otherwise similar to that occurring in the healthy woman, except that the temperature falls on the first day and not on the day preceding the flow; and, further, the progressive and preliminary rise in the inter-menstrual period appears to occur but rarely, being present in only three of my cases. In cases with two lobes affected a definite rise occurs in more than half of them, whilst in cases with three or more lobes affected a simple depression occurs in only 14·2 per cent. of the cases, a rise in 57 per cent. I was unable to trace any definite variation of pulse-rate and respiration with these changes of temperature. In like manner the amenorrhœa that is so well recognised as a sequel of this disease is found to increase progressively in proportion to the extent and severity of the disease. In early cases it occurred in 11·9 per cent., in the two-lobed in 23·7 per cent., whilst in the severe and advanced it occurred in as many as 62·5 per cent. The only references of the effect of menstruation on the temperature in pulmonary tuberculosis that I have been able to find in the literature on this disease are by Dr. F. W. Burton-Fanning[11] who states as follows: "I find that in about half my female patients a characteristic rise of temperature occurs during the week that precedes the onset of menstruation; the average increase of temperature amounted in my cases to 0·50 and lasted for an average period of six days ending on the day before menstruation or extending over the first or second day of the flow"; and Dr. F. M. Pottinger[12] who states that, "It is not uncommon in females suffering from tuberculosis to have a rise in temperature associated with the menstrual period. It usually comes on a few days before the flow, but may not appear until it is established. In early cases this often amounts to only a fraction of a degree or a degree, but in advanced cases I have frequently seen a maximum of 103° or 104°." The fact that the temperature appears to rise definitely in the more advanced and febrile cases would seem to indicate that the rest in these cases should be more rigidly enforced at the periods than at other times, and in any case it would be wise to postpone drawing inferences from the temperature chart in a case first seen during menstruation as to the nature and type of the lesion until the period is over, and the influence of menstruation upon the temperature can be eliminated.

West Norwood, S.E.

A NEW OPERATION FOR PROLAPSE OF THE RECTUM.

BY J. P. LOCKHART MUMMERY, M.B., B.C. CANTAB., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM, CITY-ROAD, E.C., AND TO THE QUEEN'S HOSPITAL FOR CHILDREN, HACKNEY-ROAD, E.

PROLAPSE of the rectum in adults is a condition which, as a rule, is difficult to cure, and the large number of different operations which have been advocated for the treatment of this condition are sufficient evidence of the difficulty that is often experienced in curing such cases. I am, of course, excluding those cases in which a short prolapse occurs as a complication of severe and old-standing piles, where a ring of mucous membrane comes down with the piles, as these cases can be efficiently treated by a modified Whitehead's operation.

The operations for prolapse of the rectum in adults may be divided into two classes—those which aim at suspending the bowel from above, which includes all the different forms of colopexy, and those which aim at fixing the rectum itself into the hollow of the sacrum and to the pelvic fascia. These include all the different forms of proctopexy. The latter type of operation is, except in cases of prolapse of the third degree, the better, as it aims at restoring the natural supports of the rectum, and also it does not necessitate opening the peritoneal cavity.

Our object in performing any form of proctopexy is to anchor the rectum by adhesions to the sacrum and surrounding pelvic fascia. It is obvious that the more extensive and firm these adhesions are the better will be the result. Stitches, however carefully placed, cannot be permanently depended upon to hold up the rectum, and, further, it is quite impossible to stitch the rectum into the hollow of the sacrum. Even if the stitches are carried right round the sacrum, as in Tuttle's operations, this object is not attained, as the sacrum is hollow from side to side as well as from above downwards, and consequently the stitches cannot draw the post-rectal wall against the sacrum, as they remain stretched across the hollow like a bow-string.

The usual method of performing proctopexy is to stitch the posterior rectal wall to the tissues in front and on each side of the coccyx. The stitches, however, cannot permanently anchor the rectum, as they cut their way through the tissues and become loose in a very short time, and the ultimate result, in those cases where the operation succeeds, is due to the adhesions formed between the parts during the time the stitches hold.

The following operation is both simple and effectual as it so anchors the rectum as to render any possibility of the post-rectal wall prolapsing impossible. The preliminary treatment consists of getting patients' bowels well cleared out previous to the operation so that they may be left confined for some time afterwards. If at the time of the operation the prolapse is down it should be entirely reduced and the bowel thoroughly washed out with lysol solution—one drachm to the pint. A small plug of gauze should be passed into the bowel to prevent any leakage during the operation. The whole of the perineum and buttocks are then carefully asepticised and a transverse incision about two inches long is made about half way between the tip of the coccyx and the posterior margin of the anus. This incision should divide the attachment of the external sphincter to the coccyx and should be carried down until the posterior rectal space is opened. With the gloved finger this space should be freely opened up. The height to which the posterior rectal space should be separated depends upon the length of the prolapse, but in any case it should be well up into the hollow of the sacrum. The space should also be opened up slightly to each side of the bowel. Next a long strip of sterilised gauze should be lightly packed into the space thus made in the hollow of the sacrum and behind the rectum. The end of the gauze is left protruding from the wound, which must be left open. A lot of gauze must not be pushed in, but only just sufficient to prevent the rectum and the tissues on the front of the sacrum from healing together by primary union. The external wound is carefully dressed, a piece of gauze being placed in the anus to prevent the dressings from becoming soiled. If the anus is very patulous some form of plastic operation may be performed at the same time to narrow the opening.

---

[2] Lewers: Diseases of Women, London, 1903, p. 49.

[3] Galabin: Manual of Midwifery, London, 1904, p. 42.

[4] Hart and Barbour: Manual of Gynæcology, Edinburgh, 1904, p. 83.

[5] J. C. Edgar: Practice of Obstetrics, London, 1907, p. 21.

[6] Webster: Diseases of Women: Philadelphia, 1907, p. 112.

[7] Dudley: Principles and Practice of Gynæcology, London, 1908, p. 23.

[8] Giles: The Cyclical or Wave Theory of Menstruation with Observations on the Variations in Pulse and Temperature in Relation to Menstruation, 1897, Obstetrical Transactions, vol. xxxix.

[9] Jacobi: Question of Rest for Women during Menstruation, 1877 New York.

[10] Reinl: Die Wellenbewegung der Lebensprocesse des Weibes, Volkmann's Sammlung, No. 243.

[11] Burton-Fanning: The Open-air Treatment of Pulmonary Tuberculosis, London, 1909, p. 36.

[12] Pottinger: Pulmonary Tuberculosis, London, 1908, p. 57.

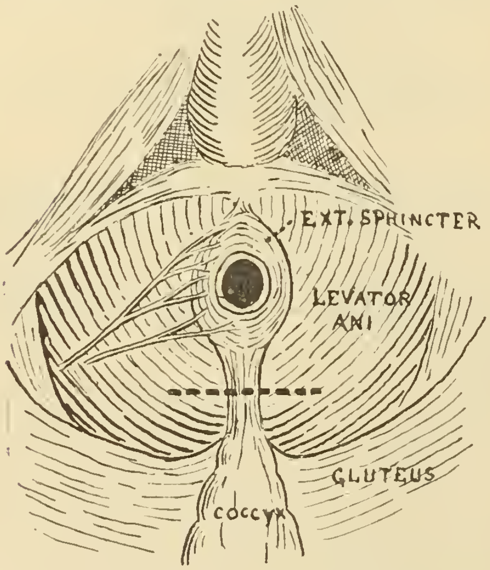


Diagram showing the muscles of the perineal and anal region. The transverse dotted line shows the position of the incision.

After the operation the patient must be kept lying flat in bed, and not allowed to sit up for any purpose. He should be given a very light and easily digested diet so as to enable the bowels to be kept from acting for some days. The gauze is removed on the third day and the wound then re-packed lightly each day, the wound and the space behind the rectum being allowed to close slowly by granulation, less and less gauze being introduced at each dressing. The bowels are opened by oil enemata on about the sixth or seventh day with the patient in the recumbent position, care being taken to prevent the prolapse from coming down. The wound heals up in about three weeks, but the patient should not be allowed to sit up for a full month after the operation.

After the wound has healed, if a finger is passed into the bowel, it will be found that the whole posterior wall of the rectum is firmly attached to the hollow of the sacrum by the fibrous tissue formed during the healing of the posterior wound. The posterior rectal wall is in this way much more effectually anchored than is possible by any stitching, and, moreover, is attached in the hollow of the sacrum where it cannot be stitched.

The division of the attachment of the external sphincter to the tip of the coccyx is an advantage, as in consequence of its division the anus is displaced slightly further forward, and this, combined with the posterior fixation, considerably increases the angle formed by the terminal portion of the rectal canal, and so tends to prevent further prolapse.

This operation has the advantage of great simplicity, while at the same time it affords a more effectual means of anchoring the posterior rectal wall than any operation depending on stitching can possibly do. The only risk of the operation is sepsis, which might be serious owing to the cellular spaces opened up, but with proper antiseptic technique this should be negligible, and after granulation has commenced, which will be after the first two or three days, no serious sepsis can occur, even should the wound become infected.

I have performed this operation four times with complete success, and appended are brief notes of three cases:—

CASE 1.—A woman, aged 42 years. Prolapse of second degree for three years. Bowel came down when the patient walked and caused great misery. About five inches of bowel prolapsed. The anus was patulous. Operation performed in 1904. The patient never had any return of the prolapse after the operation, and when last heard of was quite well.

CASE 2.—A man, aged 38 years. Severe prolapse of the rectum for over a year. The slightest strain caused the bowel to come down, and the patient suffered great inconvenience. About five inches of bowel protruded through the anus on straining. The anus was very patulous. Operation in 1904. When the patient began to walk after the wound had healed there was a slight prolapse of the anterior rectal wall, about one inch coming through the anus. This was treated by ligature at a second operation. Result, cured.

CASE 3.—A woman, aged 57 years. Prolapse for 14 years. Five months ago was operated on, Whitehead's operation being performed. This, the patient said, did no good, and the prolapse had been worse since. On examination the upper part of the rectum prolapsed through the anus. Operation, 1907: Posterior wall of rectum anchored by producing adhesions to sacrum and some loose mucous membrane on anterior wall just within anus ligatured. Result, cured.

In each case about 5 inches of the bowel came down previous to operation. One patient, in whom the anus was very patulous, had a small prolapse of the anterior rectal wall when he began to get about again consisting of about an inch of the mucous membrane on the anterior rectal wall just within the sphincters. This portion of the mucous membrane was removed by ligature at a second operation, in the same way as in treating piles, and he then had no further trouble.

The advantages claimed for this operation are: (1) it securely and permanently fixes the whole posterior rectal wall into the hollow of the sacrum; (2) it is simple, and does not involve any serious risk; (3) it does not involve the cutting of any nerves or important structures; and (4) it restores the bowel to as near the normal condition as is possible.

Cavendish-place, W.

WORTHING AND DEFECTIVE SCHOOL CHILDREN.—The Worthing education committee on Feb. 22nd adopted its scheme for the treatment of defects revealed by the medical inspection of school children. The committee has been fortunate in having the advice of a medical practitioner as a member of the education authority. Mr. H. J. M. Milbank-Smith voiced the feelings of the medical profession at Worthing when he said that the profession held strongly that work given by the education authority should not be undertaken by local charities or by private benevolence, but should be paid for by the authority. It is upon these lines that the education committee has finally approved of its scheme, and care has been taken not to cause inconvenience to any section of the community. Precautions will be taken to ensure that only those children shall be treated whose parents are found unable to pay for medical advice. The cost of ointments, lotions and dressings, &c., is estimated at £5 per annum. For the treatment of defective eyesight it is proposed to appoint a special ophthalmic surgeon, and it is estimated that from 200 to 300 cases every year will be treated at a cost of 20 guineas per 100 cases. Parents are to pay for the cost of glasses, wholly or partially, and the cost to the education authority for the supply of glasses is estimated at £20 per annum. For tonsils and adenoids hospital tickets are to be given, the estimated cost for 100 such cases being £21 per annum.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF POST-PERITONEAL HÆMATOCELE COMPLICATING A LARGE UTERINE FIBROID; OPERATION; CURE.[1]

By William Alexander, M.D., M.Ch. R.U.I., F.R.C.S. Eng.,
LECTURER ON CLINICAL SURGERY, UNIVERSITY OF LIVERPOOL.

The patient, a single lady, aged 50 years, complained of dyspnœa and general weakness. On examination the abdomen was found to be occupied by a large, solid tumour, freely moveable, and a little tender. The periods were regular and not excessive, and the functions of the bowels and bladder were normal. The tumour was considered to be a solid ovarian, and an operation was recommended. On opening the abdomen, it was found to be a large fibroid, weighing 12 pounds, and was removed in the usual way. There were no adhesions, but the tumour was observed to project rather unduly forwards. After the removal of the tumour and the pads which had been used to keep the intestines out of the way, a diffused mass consisting of a dark layer of blood was seen extending over the front of the spinal column and between the layers of the meso-colon as far up as the hilum of the liver. The broad ligaments did not contain any blood at the time the hæmatocele was first discovered, but they gradually filled up with blood from above. A glass drainage-tube was placed in the right broad ligament and the abdomen was closed. Before the operation the pulse-rate was 100, and at the end of the operation 108. The rapidity of the pulse was thought to be accounted for by a pre-operative rupture of a vein and the gradually increasing venous hæmorrhage, which possibly had been going on for some two weeks before the operation. The pulse-rate remained rather rapid for a few days after the operation, and the patient suffered from some sickness, but she gradually improved, the pulse-rate returned to the normal, and finally she made a good recovery. When seen seven months after the operation the patient was well and no trace of the hæmatocele could be found.

Pelvic hæmatoceles of a certain size are not uncommon, but are usually limited to the broad ligaments, and are due to the rupture of an extra-uterine gestation. In some cases, however, they are post-operative, and due to the puncture of a vein in the broad ligament. When the abdomen was opened the tumour filled the whole space, and was very prominent, the crest of the swelling being on a level with the colon. The danger of the condition was very great, and a bad prognosis was given; fortunately asepsis was maintained throughout, and the mass of blood was gradually absorbed. I have not been able to find any record of a similar case. It is probable that the insertion of the drainage-tube into the broad ligament was not really advisable and did little good, but for the first few days a small quantity of blood escaped through the tube daily. It was introduced on the spur of the moment, when it seemed desirable to have the patient back in bed before the supposed inevitable collapse occurred.

Liverpool.

A CASE OF RHEUMATOID ARTHRITIS TREATED BY THYROID EXTRACT.

By Geo. Steele-Perkins, M.D. Edin., M.R.C.S. Eng., L.R.C.P. Lond.

At the end of April, 1909, a saleswoman, aged 28 years, got rheumatoid arthritis in both knee-joints, with much thickening, and effusion of fluid into both joints; there was also much pain in the legs and at the back of the knees and thighs. The condition arose from leaving off a flannel petticoat and wearing open-worked stockings whilst the weather was still cold. Her work necessitated her standing all day, and she was unable to rest as her living depended on her continuing at her duties.

I tried most of the ordinary methods of treatment for the condition without any beneficial result—viz., alkalies, iodide of potassium, colchicum, salicylates, aspirin, arsenic, quinine, massage, ung. hydrarg. co. locally, and strapping, abstention from alcohol, suitable diet, &c.; also blistering on two occasions, but with rest only from Saturday afternoon to Monday morning.

On August 21st her 17 days' annual holiday commenced. She went to bed, had both knees thoroughly blistered, and in a week all fluid had disappeared from the left knee and nearly all from the right knee. The left knee had ung. hydrarg. co. applied to it; the right knee had the same, and in addition was strapped. On the 28th she went to Folkestone, passing her time either sitting about or else in a bath chair, not walking. On Sept. 6th she returned from Folkestone; the knees were in the same condition as when she went away, with still a good deal of thickening about the joints and a little fluid in the right knee. On the 7th she returned to her duties. On the 10th there was fluid in the left knee and the fluid in the right knee had increased. The condition got worse, pain in the knees returned, and she was soon as bad as ever. By the aid of elastic knee-caps she kept about and went to business, standing all day.

On Oct. 16th Dr. J. W. H. Eyre examined bacteriologically her blood and also fluid drawn off from the right knee-joint with a view to vaccine treatment. Dr. Eyre's report was: "No indication from blood examination of lowered resistance to any micro-organism, and the fluid from knee-joint remains sterile at the end of four days. None of the cultures showed any micro-organisms whatever, so cannot prepare a vaccine or even suggest the use of a stock vaccine, as there is no indication what to try."

The patient then had ordinary baths, light baths and heat baths, with massage, none of which did any good.

On Nov. 9th, finding on examination that her thyroid was small, I commenced giving thyroid extract, grs. ii. three times a day, and after a week four times a day. On Jan. 15th, 1910, all the pain and nearly all the swelling had gone from both knees; there was no fluid in the left knee and hardly any in the right knee. A week later there was no fluid in the right knee, and on the 23rd all the swelling had disappeared and the thyroid extract was stopped, it having been reduced to grs. ii. three times a day for the past fortnight.

The only ill effects experienced from the extract were that the patient got a little thin about the neck, and felt tired at the end of her day's work. These effects passed off soon after her ceasing to take the extract. The patient did not stay away from business on any occasion, and now, a month since ceasing to take the extract, she remains quite well, her knees in no way troubling her.

Wimpole-street, W.

AN INTERESTING CASE OF COBRA BITE: RECOVERY AFTER TREATMENT.

By N. Bose, M.B., C.M. Edin.

A robust and well-built Sikh, named Shaih Singh, aged 30 years, a gate-keeper in the employ of the East Indian Railway Company, was admitted into the hospital of the company on Oct. 27th, 1909, at 10.30 p.m., having been bitten on the calf of the leg by a young black spectacled cobra 3 feet 6 inches in length, which he killed by means of a "lathi" as soon as the bite was inflicted. Immediately after the bite he felt burning and shooting pain right up the limb. He put two strong cord ligatures above the seat of the bite and was brought to hospital by his friends two hours after the incident, the dead snake being brought with him. The man was very restless and could not walk or stand properly. He complained of burning shooting pain in the limb and as far as the shoulder. The pupils were dilated, the pulse was feeble with a rate of 50 per minute, and the respirations were laboured. The wound was a circular one of about the size of a half-rupee on the inner side of the calf and was skin-deep.

An indiarubber elastic tourniquet ("Reliance") was at once applied above the seat of the bite in addition to the cord ligatures which were already in position. About 20 free deep incisions were given around the wound, which was also excised and enlarged. It was allowed to bleed freely for about ten minutes and was then washed with hot water and afterwards crystals of permanganate of potash were rubbed into the wound and the incisions were made. During the course of the operation the patient vomited once and was very restless on account of pain. In half an hour after the operation the tourniquet was taken off and the cord ligatures were relaxed as the patient could not bear the pain any longer. Within an hour after this he gradually sank to unconsciousness, the pulse was very feeble and thready and came down to 30 per minute and so the man's life was despaired of. However, a hypodermic injection of strychnine nitrate, gr. 1-15th, and digitalin, gr. 1-100th, with distilled water ʒi. was given. After the injection the pulse improved to a certain extent but the drowsiness persisted and the patient vomited once more. He was kept roused and made comfortably warm by means of hot bottles to the sides and blankets, and the following two mixtures were given alternately every half hour: (1) Pot. permanganas, gr. ii.; aqua pura, ℥i. (2) Spt. ammon. ar., spt. æther. sulph., and spt. æther. nit., of each ♏xx.; liq. strychninæ, ♏iv.; tr. digitalis, ♏iii.; aqua camphor. to ℥i. After giving six doses of each mixture the pulse rose to 50 per minute; and the patient recovered consciousness on the next morning. He then wanted some milk to drink but nothing was allowed until 12 noon, when a quarter of a seer of milk was given. Gradually his condition improved and by the next morning the pulse beat became 70 per minute, though it was still small and feeble, while the patient was quite bright and cheerful as if nothing had happened to him. The leg was washed with Condy's fluid and was covered with antiseptic dressings. The patient was discharged after complete recovery the same evening.

---

[1] Abstract of a paper read before the Obstetrical Section of the Royal Society of Medicine on Feb. 10th.

The points of interest in the case are the following: 1. The cobra was quite a young one, and was supposed to have the full strength of the venom, consequently the wound must have been poisoned whatever might be the dose, and yet the man survived though full two hours had elapsed before any active treatment was commenced. 2. The wound was not a typical "punctured wound" but a circular one skin deep. 3. The strong cord ligatures which the man himself had tied just after the infliction of the bite were, in my opinion, a great help, as they did not allow the poison to circulate in the system. 4. Soon after taking off the ligatures the man became so ill that his life was despaired of, and this must have been due to the circulation of the poison which had still been left in spite of the copious bleeding and the canterisation with permanganate of potash.

I am much indebted to Mr. A. C. Brown, district medical officer of the East Indian Railway Company, for kindly allowing me to publish this case, which he has revised.

Umballa, Punjab.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Diagnosis and Treatment of Pericardial Effusion.

A meeting of this section was held on Feb. 22nd, with Dr. J. Mitchell Bruce in the chair.

Dr. Samuel West read a paper opening a discussion on the Diagnosis and Treatment of Pericardial Effusion, which will be found printed on p. 560 in The Lancet of Feb. 26th.

Dr. D. B. Lees pointed out that the amount of fluid in the pericardium in rheumatic pericarditis was usually much less than was generally assumed: it might even be absent altogether. He considered that it was clear that the cardiac dilatation accompanying rheumatic pericarditis was mainly the result of the morbid conditions causing the pericarditis. Experimental injection of fluid into the pericardium in the cadaver could not throw any light on the physical signs of pericarditis.

Dr. W. Ewart said that in the future a medical man having made out the presence of pericardial effusion would have to find out how much dilatation of the heart there was—i.e., it would be an examination within an examination.

The meeting was adjourned to March 3rd.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Post-peritoneal Hæmatocele complicating a Uterine Fibroid.—Modern Methods of Delivery in Contracted Pelvis.

A meeting of this section was held on Feb. 10th, Dr. H. Macnaughton Jones, the President, being in the chair.

Dr. William Alexander read an interesting note on a case of Post-peritoneal Hæmatocele complicating a Uterine Fibroid, which is published in another column.

Dr. E. Hastings Tweedy read a paper on the Modern Methods of Delivery in Contracted Pelvis, in which he said that methods are now precise if they are based on an accurate knowledge of the size of the pelvis in any given case. This accuracy cannot be ensured by Müller's method, or by an estimation of the true conjugate from the size of the diagonal conjugate. Skutsch's pelvimeter, in the hands of an expert, can be made to give measurements accurate to within the sixth of an inch, and treatment should therefore be based on its findings. He divided contracted pelves into five degrees. The first four are separated from each other by half-inch measurements in the true conjugate, and the fifth degree comprises all pelves less than two and a quarter inches in the conjugate diameter. Generally contracted pelves should be considered worse by half an inch than those with simple flattening. A child of abnormally large size can pass uninjured through a normal pelvis; therefore a full-sized fœtus may pass through a contracted pelvis of the first or second degree. In contractions of the first and second degree normal delivery should be anticipated. With such contraction a woman may be expected to deliver herself naturally, and interference is only warranted when complications arise. For such cases prophylactic turnings or induction of premature labour are never indicated. In contraction of the third degree classical Cæsarean section is the operation of choice, provided the patient is seen early in labour and carries a living child. When performed under favourable circumstances it can be relied upon for the delivery of a living child, without subsequent harm to the mother, as exemplified by a total absence of omental or intestinal adhesions, by complete absorption of buried silk sutures, and an absence of visible mark in the uterus to point to the site of incision. All these signs can be verified on patients who have to undergo a subsequent Cæsarean section. When such a contraction is encountered in a woman advanced in labour, subcutaneous pubiotomy is an ideal procedure. If the special instruments required for its performance are not available, symphysiotomy yields almost as good results. With both the hæmorrhage is slight, convalescence should be uneventful and painless, the patients are able to turn themselves on the third day, and walk unaided from the seventeenth day. For contractions of the fourth degree and under, neither of these operations is to be considered, and in such cases the extra-peritoneal Cæsarean section is the operation of choice when the classical Cæsarean section is not indicated. He summed up his remarks as follows: 1. Induction of premature labour is never advisable. 2. Perforation is not permissible unless the child is dead. 3. Version should never be employed as a treatment for contracted pelvis, but may still be performed for complications of labour, such as prolapse of the cord, when associated with contractions of the first and second degree. 4. In the greater degrees of contraction time should not be wasted in an endeavour to obtain natural delivery. 5. In lesser degrees ample time should be given the woman to enable her to deliver herself, if possible. With the first appearance of fœtal or maternal distress, operative delivery must be undertaken. 6. High forceps should never be applied until preparations are complete for enlarging the pelvis, when they may be tried tentatively. 7. In all obstetrical operations the best results cannot be obtained unless gloves are worn. 8. Finally, it is only a matter of a short time before it will be considered criminal to perforate the head of a living child; and even to permit one to die because of delay in delivery, or from obsolete methods, will rightly be condemned.—In the discussion that followed, Dr. F. H. Champneys said that there were certain propositions in the paper which were at variance with his present opinions. For instance, the induction of premature labour in suitable cases had always given him good results, while the results of symphysiotomy and pubiotomy related by Dr. Tweedy struck him as being exceptional. Up to the present time he had treated cases of contracted pelvis by the induction of premature labour and Cæsarean section and had been well pleased with the results. He promised, however, to give the proposals of Dr. Tweedy careful consideration.—Dr. G. E. **HERMAN** was interested in Dr. Tweedy's commendation of Skutsch's pelvimeter; he had used the instrument but had not had much success with it. He could not agree with Dr. Tweedy in regarding the size of the child as a negligible factor; he regarded it as of much importance as the measurement of the conjugate, and had found it generally, though not always, easy to judge of the relative size of the head and pelvis by pressing the head down into the pelvic brim from the abdomen. Acceptance of Dr. Tweedy's views involved acceptance of one of two propositions: (1) that the mortality of Cæsarean section was not greater than that of delivery through the natural passages; or (2) that the life of the child was to be considered before that of the mother. With regard to the first, the most recent statistics of Cæsarean section gave a mortality of 8 per cent.; as to the second, he thought the life of the mother was always to be preferred to that of the child. Dr. Tweedy regarded the two operations for widening the pelvis—symphysiotomy and pubiotomy—as about equal in difficulty, but he could not imagine anyone acquainted with the former operation preferring pubiotomy. The real objection to methods for widening the pelvis was that for their safe use it was necessary that the relative size of the head and pelvis should be determined with great accuracy. He did not believe that the use of rubber gloves was essential for the attainment of the best results.—Dr. **HERBERT SPENCER**, on the question of the induction of premature labour, disagreed absolutely from the writer of the paper, and did not think that any evidence had been brought forward for pubiotomy as a substitute for induction, whatever might be said for it as an emergency operation during labour at term. He could not allow that induction of premature labour was an obsolete operation; he had been practising it for many years, and was strongly in favour of it, nor had he ever seen any bad results to the mother. He had never performed symphysiotomy or pubiotomy, preferring the induction of premature labour or Cæsarean section in clean cases. In really infected cases any of these operations, pubiotomy included, was attended with great risk to the mother. He agreed with Dr. Herman that the interest of the mother should come first; and in the interests of the child, and in many cases in the interests of the mother, too, Cæsarean section was better than pubiotomy. Dr. Tweedy had said nothing of any ill-effects to the mother, although records of such ill-effects existed in abundance. He did not think that Dr. Tweedy was justified in recommending pubiotomy as a safe and simple method of delivery for the general practitioner.—Dr. T. W. **EDEN** gave the results of the induction of premature labour in 101 cases at Queen Charlotte's Hospital. The time for the induction of the labour was determined by Müller's method, and he thought that this method fulfilled all the requirements. Krause's method of induction was employed, and the fœtal mortality was 13 per cent. In five-sixths of the cases the induction was performed at or later than the thirty-sixth week, and the average weight of the infants at birth was from 5 to 5½ pounds. There was no maternal mortality. Of the cases of contracted pelves which went to term 42 were delivered spontaneously, with a fœtal mortality of 4·7 per cent. In 74 cases in which the conjugata vera was 3½ inches or more, and which were delivered by forceps at term, the fœtal mortality was 18·7, and there was no maternal mortality. During the same time 35 cases were operated upon by Cæsarean section with a fœtal mortality of 11·4 per cent. and a maternal of 5·7 per cent. No doubt if the operation had been performed late in the second stage of labour the mortality would have been higher than this. Neither symphysiotomy nor pubiotomy had been performed during this period. The results of induction of premature labour compared so favourably with the alternative methods of procedure that he was not inclined to abandon the operation. Further than this it was important for teachers of obstetrics to retain and to teach the simpler methods so long as they yielded good results.—Dr. W. S. A. **GRIFFITH** said that Dr. Tweedy in his paper condemned in a very definite manner the British adherence to the induction of premature labour in preference to the routine operation of symphysiotomy and pubiotomy, which for many years had been extensively practised on the continent. He, personally, was satisfied that each operation had its own sphere of usefulness and was not to be condemned. He was not, however, prepared to accept the teaching that, in all cases where the fœtal head would not pass through the brim, symphysiotomy or pubiotomy was necessarily the best and, indeed, the only good method of treatment.—The **PRESIDENT** said that in 18 years he had had only two maternal deaths from sepsis after prolonged and neglected labour. Out of 1611 cases attended by him or his colleagues during five years 14 mothers died and 64 children—a mortality of 0·8 per cent. of the mothers and 3·9 per cent. of the children. It must always be recognised that classical midwifery among the rich and in hospitals, and among the poor were very different matters. It seemed to him essential, in order to arrive at a satisfactory conclusion as to the relation between the size of the child's head and that of the pelvis, that an anæsthetic should be given and Müller's method employed. He was strongly in favour of the induction of premature labour, and he thought that version should be employed in a certain small number of cases as an alternative to forceps; the operation should, however, be performed with the membranes unruptured and the cervix fully dilated. There was no more dangerous operation than the application of the high forceps to the head not engaged in the brim. He considered the day of perforation of a living child's head was passed. He did not think that any method of instrumental pelvimetry could ever supersede the use of the hand properly employed. He desired to convey the thanks of the section to Dr. Tweedy for his most valuable paper.

MEDICAL SOCIETY OF LONDON.

Atypical Pneumonia.

A MEETING of this society was held on Feb. 28th, Dr. **SAMUEL WEST** being in the chair.

Sir **JOHN BROADBENT** read a paper on Some Difficulties in Prognosis in Cases of Atypical Pneumonia with Prolonged Pyrexia. He said that the atypical cases he brought forward were in adults met with chiefly in association with influenza. The insidious onset, the delay in the appearance of physical signs, the intermittent pyrexia might at the outset render the diagnosis obscure, while the absence of a definite crisis, the continued pyrexia, lasting it might be some weeks, with progressive loss of flesh, would render the prognosis a matter of considerable difficulty, as in some cases empyema or malignant endocarditis might develop, whilst in others, after a prolonged period of septicæmia, recovery took place without any further complications. In children the tendency in atypical pneumonia to the supervention of symptoms suggestive of cerebro-spinal meningitis might cause undue alarm, or the vagaries of a prolonged attack of lobular pneumonia might lead to a suspicion of pulmonary tuberculosis. Broncho-pneumonia complicating enteric fever in children might also be misleading and mask the symptoms of the latter affection, which in children often ran an atypical course. He narrated the details of three cases illustrating the difficulties that might be met with in prognosis in atypical cases of pneumonia. The temperatures throughout were of an irregular type and suggested the possibility of empyema, but the repeated exploratory punctures in the cases that recovered and the post-mortem examination in the fatal case negatived this. From the pathological evidence in the fatal case it would seem that in all probability there was little reaction on the part of the tissues, and the collapsed and congested lung formed a suitable nidus for the growth of the pneumococcus which thus gave rise to a general septicæmia of prolonged duration. He next proceeded to describe cases of clinically atypical pneumonia, illustrating the septicæmic character that pneumococcal infections might assume even when the lung was primarily attacked. Three of the cases first described and others of the same type occurred during a serious influenza epidemic, and it was possible that influenza might be in many instances responsible for the atypical septicæmic type of pneumonia. The most important etiological factor in the light of pathological evidence would seem to be the absence of the usual inflammatory reaction on the part of the lung when attacked by the pneumococcus. That lowered resistance might well be due in many instances to an attack of influenza immediately preceding. The collapsed and congested condition of the lung with the thick layer of overlying lymph found post mortem in the fatal case, tended to throw some light on the cause of the delayed resolution such as occurred in Cases 2 and 3, and was met with in analogous cases of influenzal pneumonia.

Dr. R. H. MILLER read a paper on some cases of Protracted Pyrexia in Pneumonia in Children.

Dr. W. CAMAC WILKINSON explained the advisability of clearing up the diagnosis in difficult cases in adults by the use of tuberculin.

Dr. C. THEODORE WILLIAMS said that he did not agree with the view that a reaction to tuberculin indicated tuberculosis.

Dr. G. A. SUTHERLAND discussed the difficulty of classifying pneumonias in children from hospital statistics.

Dr. WEST showed how the statements from the post-mortem room differed from the statements of the physicians working in the hospital wards. He said he was inclined to accept the clinical rather than the pathological evidence.

LIVERPOOL MEDICAL INSTITUTION.

Cardiac Syphilis.—Chronic Prostatitis.—Fat Compounds.

A MEETING of this society was held on Feb. 24th, Dr. T. R. BRADSHAW, the President, being in the chair.

Dr. THOMAS BUSHBY read notes of a case of Acute Visceral Syphilis resulting in a Permanent Cardiac Lesion. The patient had come under treatment suffering from a sloughing condition of the soft palate and serious symptoms of chest disease. He was found to be affected with mediastinitis, pericarditis, endocarditis, and right pleural effusion. He made rapid improvement as regards general condition under mercurial treatment, but as the case progressed the physical signs of marked aortic stenosis developed, with great hypertrophy of the heart.—The PRESIDENT suggested that the case might be one of infective endocarditis.—Dr. J. M. BUCHANAN considered that a cicatricial condition resulted in such cases rather than a true valvulitis.—Dr. W. B. WARRINGTON mentioned that syphilitic disease of the vessels occurred earlier than was usually imagined after the primary lesion.—Dr. E. E. GLYNN said that ten years' experience in the post-mortem room had shown the great rarity of cardiac syphilis; three true examples had been found, and in all the lesion was in the muscles in the form of gummata.

Mr. D. DOUGLAS-CRAWFORD read a note on Chronic Prostatitis. He suggested that it was a condition often overlooked or mistaken for other affections. He emphasised the importance of rectal examination in all cases of chronic urethral discharge. Prostatic massage was a valuable means of treatment. His remarks were illustrated by the relation of a number of cases.—Mr. F. T. PAUL considered Mr. Douglas-Crawford's paper a valuable reminder of the importance of this condition and mentioned a case in which apparently the gonococci had continued active for five years.—The PRESIDENT mentioned a case in which this condition simulated for a time renal disease, and Mr. RUSHTON PARKER spoke of the value of a bland, non-alcoholic dietary.

Dr. O. T. WILLIAMS read a paper on the Nature and Therapeutic Indications of the Fat Compounds. Reviewing the work done by Dr. H. Maclean and himself he showed that the fats in the body were not neutral fats but to a large extent phosphatides. This explained why fat stains had no effect on the combined fats of the tissues, such stains acting only when these bodies had been disrupted and the fat in them liberated from combination with phosphorus and nitrogen-containing groups. The various organs have various amounts of these bodies which are very unstable. The function of the liver and other organs in desaturating fatty acids was considered. The practical application of these observations was shown in a consideration of the influence of unsaturated fatty acids, such as are contained in cod-liver oil, on the metabolism, especially in phthisis. Four cases were recorded in which the administration of cod-liver oil had a marked effect on the metabolism, the fat absorption being greatly increased, as also was the nitrogen retention. The patients were able to take as much as 3 ounces of cod-liver oil without any ill-effects. These observations were carried out with Dr. C. E. P. Forsyth.—Several members spoke about the use of cod-liver oil in phthisis, the general opinion being that small doses were as beneficial as larger ones.—Dr. J. HILL ABRAM said that if the virtues of the oil were due to the fatty acids contained, the darker oils should be more useful; this had not been his experience. He advised that the oil should be given apart from meals.—After an interesting discussion and remarks by Dr. F. P. WILSON on some researches made by him, Dr. WILLIAMS, who was congratulated by the PRESIDENT, replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Injuries of the Brachial Plexus.—Operation for Fractured Femur in a Child Aged Four Years.—Multiple Bone Tuberculosis Two Years after Treatment.—Fracture of Humerus.

A MEETING of this section was held on Feb. 11th, Mr. J. LENTAIGNE, the President, being in the chair.

Mr. C. A. K. BALL exhibited a young soldier who, last May twelvemonth, was driving a wagon when the horses ran away. Some canvas on the wagon fell on him and he was unable to extricate himself and became jammed between the horses. He fell on his shoulder and sustained a fracture of the base of the skull and an injury to the brachial plexus of the left arm. He had recovered completely from the fracture, but there had been no improvement in the paralysis resulting from the injury to the plexus. The lesion had been apparently localised to the fifth and sixth cervical nerves, but the nerve of Bell and the nerve to the rhomboids were perfectly normal, and the lesion must, therefore, be below the origin of these.

Mr. BALL exhibited (for Mr. E. H. TAYLOR) a patient with Complete Tear of the Brachial Plexus. The patient, a young man, aged 19 years, four months previously had become entangled in a threshing machine. A spindle had gone in above his clavicle just over the subclavian artery. He had now complete paralysis of all the muscles of the left arm, complete loss of sensation, and the subclavian artery had evidently become obliterated. It was four months since the accident and there was no sign of improvement in sensation.

Mr. H. STOKES exhibited a case of Traumatic Asphyxia and Injury to the Brachial Plexus in a young man whose coat had been caught in a revolving shaft, which wound up his clothes and collar and strangled him. He recovered consciousness 12 hours after the accident, which occurred a fortnight ago, and two days later he began to show ecchymosis of his eyes. His left arm was flaccid; there was a scar on the skin caused by the clothes. He had a certain amount of paralysis of the left arm. He had had complete loss of sensation all up the left arm, but it was now confined to the fingers.—Dr. T. G. MOORHEAD did not think there would be any use in doing a nerve anastomosis unless there was some slight reaction to the galvanic current.—Mr. W. S. HAUGHTON said his experience of immediate nerve suturing had been very satisfactory, but cases in which he had attempted suturing at intervals of five months to two years had not been satisfactory. He had tried grafting a piece of sciatic nerve from a freshly killed sheep into a man, but the result was not satisfactory.—Mr. W. I. DE C. WHEELER said it was difficult to find a good account of such cases in surgical literature, although they were fairly common.—Professor C. Y. PEARSON, Dr. W. STOKES, Mr. A. J. M. BLAYNEY, and the PRESIDENT also spoke, and Mr. BALL and Mr. STOKES replied.

Mr. WHEELER showed a child, aged 4 years, who sustained an Oblique Fracture of the Femur with marked over-riding of the fragments. Treatment by reduction and immobilisation in plaster for 14 days failed to reduce the shortening completely. A long incision on the outer side of the thigh exposed the fracture; the sharp ends were imbedded in the muscles, but extension had little effect in bringing the fractured extremities into apposition. After some difficulty the fragments were replaced and held together by the application of two Lane's plates and six screws. Three encircling aluminium-bronze wires passing through holes in the steel plates and round the oblique ends of the fracture completed the operation. Recovery was uninterrupted with no shortening of the injured limb. He strongly advocated operation in fractures of the femur in cases where by X rays it was evident that anything like good apposition of the fragments was impossible by non-operative methods. Pain and discomfort disappear after the operation, and little or no subsequent treatment is necessary. In a child no splint need be used after the first few days. In about six to eight weeks the patient is allowed to use the limb, the joints being freely moveable by that time. Skiagrams were shown to illustrate the condition before and after operation.—Dr. W. G. Harvey, Dr. W. C. Stevenson, Mr. Stokes, Mr. Haughton, and the President discussed the paper.

The President exhibited a case of Multiple Bone Tuberculosis two years after treatment. The case was one of tuberculosis of the wrist, elbow, and face, and of the bones of both feet. Treatment had covered about a year and had ended two years ago. The patient was completely cured of the tuberculosis, notwithstanding recent statements that such was an impossibility. He excised the wrist, which was swollen to six times the normal thickness. The different tuberculous foci were scraped and he amputated two toes. The treatment was simplicity itself and within the reach of anyone. The wrist was left somewhat stiff, but he believed it could be made much freer by massage and by forcible extension and relaxation under an anæsthetic.

Mr. Haughton demonstrated a case of Oblique Fracture through the Tuberosities and Surgical Neck of the Humerus treated by Plates and Screws, and discussed the features which led him to take operative measures.

North of England Obstetrical and Gynæcological Society.—A meeting of this society was held at Liverpool on Feb. 18th, Dr. W. K. Walls (Manchester), the President, being in the chair.—Dr. J. E. Garner (Preston) read the notes of a case in which he had removed two large Solid Ovarian Tumours from a woman, aged 28 years. She was suffering from abdominal pain and vomiting, and there was some loss of flesh. The abdomen contained much ascitic fluid, but there were no adhesions. The pathologist was of opinion that the growths were endotheliomata rather than carcinomata, and probably of secondary origin. A month later a large quantity of ascitic fluid was removed, and a solid mass could then be felt above the umbilicus. This had not been noticed at the operation. Death occurred two months after the operation.—Dr. J. H. Willett (Liverpool) showed a Uterus containing a Necrotic Submucous Fibroid which was in process of spontaneous expulsion. He had removed it from a multipara, aged 31 years, who for 12 months had had profuse menorrhagia accompanied by labour-like hypogastric pain. At one time the passage of some solid pieces of tissue had suggested to her medical attendant the possibility that the uterus might contain a mole. But on microscopical examination the pieces proved to consist of necrotic muscular tissue. There was a thick muco-purulent discharge, so total abdominal hysterectomy was performed.—Mr. R. M. Littler (Southport) reported a case of Traumatic Rupture of a Uterine Fibroid, with Intraperitoneal Hæmorrhage. The patient, a spinster, aged 43 years, had noticed a gradual increase in the size of her abdomen for four or five years. Menstruation had always been regular though scanty, and until the last three years attended with severe pain. She had not consulted a medical man. One evening she tripped and fell heavily on the asphalte walk. She was seized at once with severe abdominal pain, but was able to walk home, a distance of 100 yards. She felt very faint, vomited, and had an urgent desire to go to stool. Severe pain continued all night. Early next morning a medical man was summoned; he gave her morphia hypodermically and sent her to the Southport Infirmary, when Mr. Littler, acting on a provisional diagnosis of ruptured ovarian cyst, at once opened the abdomen. It contained a large quantity of free blood—a pint at least. A large pedunculated subserous fibroid, presenting a lacerated wound 3 inches long on its anterior surface, was quickly removed. Recovery was uninterrupted. The tumour weighed 6½ pounds. The laceration was superficial but involved a large vein.—Dr. J. E. Gemmell (Liverpool) reported: 1. A case of Pregnancy complicated by Acute Intestinal Obstruction. The patient when five months advanced in her first pregnancy was seized with abdominal pain and repeated vomiting; in 48 hours the latter was fæcal in character. The obstruction was found to be caused by a band as large as a Fallopian tube, which ran between the back of the uterus and the right broad ligament, and constricted the ileum some 6 inches from its lower end. This and some smaller adhesions were divided. The vermiform appendix was represented by a blunt stump half-an-inch in length and free from adhesions. During childhood and adolescence the patient had had several attacks of obscure abdominal illness. Labour, which had commenced before the operation, terminated the same evening. Convalescence was uncomplicated. 2. A case of Pregnancy at Seven Months, Complicated by Appendicitis. Spontaneous premature labour occurred, and the bowels, which had not been opened for seven days, acted normally next day. For three days the patient was much better, then pain recommenced, the temperature rose, and a week later a large swelling, extending from the right Poupart's ligament to the costal margin, was found. On exploration this was found to consist of a suppurating ovarian dermoid cyst below and a large appendicular abscess above. A drainage-tube was placed at each end of the wound. The patient made a good recovery.—The following specimens were also shown: Mr. A. W. Cuff (Sheffield): Ovarian Cystic Teratoma removed from a girl, aged 10 years.—Dr. A. J. Wallace (Liverpool): Three Solid Ovarian Tumours.—Mr. H. Briggs (Liverpool): A Uterus containing a Large Mushroom-shaped Adenoma, removed from a patient aged 73 years.

Bradford Medico-Chirurgical Society.—A meeting of this society was held on Feb. 15th, Dr. W. Ward-Smith being in the chair.—Dr. T. Jason Wood read a paper entitled, "Some Remarks on the Treatment of Fractures." Dr. Wood said he intended his remarks to apply only to fractures of the limbs, and after pointing out that these had assumed an added importance in recent years, owing to the operation of the Workmen's Compensation Act, in that they were frequently being asked to express an opinion as to the length of time a patient would be disabled by a fracture, he went on to say that the first essential to successful treatment was a correct diagnosis. It should never be forgotten that there might be a slight fracture in the neighbourhood of a dislocated joint which might have great influence on the prognosis of the case. The use of the X rays was of undoubted value. In setting the fracture it was of the greatest importance to avoid rotatory deformity, especially in the lower limb. In cases of impaction in the hip and shoulder joints no attempts should be made to break it down unless there were rotatory deformity or in a young patient. An impacted Colles's fracture should always be reduced. In all cases gentle massage should be commenced from the first, and after a week in a favourable case passive movement might be commenced. Ununited fractures, in which there was free mobility after prolonged treatment, were suitable for open operation, freshening up the ends of the bones and wiring in good position. In about 50 per cent. of cases even this was unsuccessful. The treatment of compound fractures under the antiseptic régime was most successful. If the wound was at all extensive it was only reasonable to suture the bones at the time. Primary operation for simple fracture was not advisable. As regards fracture of the patella, primary operation should always be undertaken in a healthy person under 50 years of age. Fracture of the olecranon should not be operated on at first as an excellent result could be obtained by ordinary methods; secondary operation could always be performed if necessary. —The paper was discussed by Dr. Ward-Smith, Dr. J. H. Rowe, Dr. R. A. R. Lankester, and Mr. F. W. Goyder.—Dr. Rowe read a very interesting paper entitled, "Some Remarks on Genius."

Nottingham Medico-Chirurgical Society and Nottingham Division of the British Medical Association.—A combined meeting of these two societies was held on Feb. 16th, Dr. A. Fulton being in the chair.—Dr. J. Martin Beattie, professor of pathology in the University of Sheffield, in a paper on the Activity of the Cells and Fluids of the Body in the Prevention and Cure of Disease, pointed out that many of the cells of the body were specially active in the destruction of bacteria, first ingesting and then digesting them. There was a corresponding leucocytosis with the introduction of bacteria, and these leucocytes became active phagocytes, and first overcame and then repaired the damage done by the bacteria. In active immunisation of an animal certain bodies were produced which aided in the destruction of the bacteria, and in active phagocytosis it was essential that there should be a well-marked leucocytosis, so that a blood count gave important information as regarded diagnosis and prognosis. In most infective diseases a negative polynuclear leucocytosis was a very grave sign—e.g., in cases of pneumonia in alcoholics. Lantern slides, showing proliferative changes in the red marrow and also degenerative changes where *a*-leucocytosis existed, were shown. The treatment by vaccines was founded on the increased activity of the cells of the body which was produced by the injections; and Dr. Beattie suggested that salicylates in acute rheumatism might be successful because the increased leucocytosis the drugs produced acted on the organisms causing the disease. The normal body contained protective substances in small quantities, and by immunisation or vaccination these substances were increased. These substances fell under three groups: 1. Those which had with other substances a combining affinity only—e.g., antitoxins. 2. Those which not only had this combining affinity, but which, as a result of the combination, produced physical changes in the medium in which they were present—e.g., agglutinins and precipitins, &c. 3. Those which in virtue of their combination with other substances were able to bring about destructive changes—e.g., immune bodies. Therefore the rational procedure in disease seemed to be to increase these protective substances, either indirectly by stimulating the cells or directly by introducing the products of the activity of the cells.

Reviews and Notices of Books.

A System of Medicine by Many Writers Edited by Sir CLIFFORD ALLBUTT, K.C.B., M.D. Cantab., F.R.C.P. Lond., Regius Professor of Physic in the University of Cambridge; and HUMPHRY DAVY ROLLESTON, M.D. Cantab., F R.C.P. Lond., Senior Physician, St. George's Hospital; Physician to the Victoria Hospital for Children. Volume VI.: Diseases of the Heart and Blood-Vessels. London: Macmillan and Co., Limited. 1909. Pp. 861. Price 25*s*. net.

THE contents of this volume were partly in Volume V. and partly in Volume VI. of the original edition. The present instalment further differs from Volume VI. in the first edition in not containing the Diseases of the Muscles and some of the Diseases of the Nervous System. This change possesses the convenience of having the diseases of special parts of the body inclusively considered in separate volumes.

The first contribution bears the heading Physics of the Circulation. It consists of Professor C. S. Sherrington's original introductory article on Cardiac Physics, which appeared in the former edition, revised by Dr. James Mackenzie, who has added an account of the peripheral circulation, including arterial blood pressure. His remarks on "the peripheral resistance to the heart" will well repay perusal. He points out that the main portion of the work of the heart is expended immediately, not on moving the blood through the vessels, but in stretching the arterial wall. The elasticity of this wall is therefore of importance in the physical action of the heart, and this factor should be constantly borne in mind in clinical work. Dr. Mackenzie gives a good account of the methods of estimating arterial pressure, and in referring to the ordinary manner of feeling the pulse he says: "The results obtained by digital examination cannot be expressed in terms of mathematical formulæ, nor in language that conveys the exact impression to other minds; nevertheless, to the experienced observer the information is invaluable, and cannot be acquired by any further procedure." We believe this opinion will be endorsed by most physicians.

Dr. Frederick T. Roberts has thoroughly revised the article on Diseases of the Pericardium. The effects of pericarditis on the heart structure are more fully set forth, and the views held by various observers as to the occurrence of myocardial lesions in connexion with pericarditis are discussed at length. In support of the theory that myocardial changes are believed to constitute the most important factor in an individual case of rheumatic carditis in early life Dr. F. J. Poynton's investigations are quoted; he has demonstrated that the changes in the heart-walls commence by numerous scattered foci, some of them far from the pericardium, and that they are general, involving also the interstitial tissues. He attributes them to the action of toxins derived from micro-organisms gaining access through the circulation. The coronary arteries may be the seat of acute arteritis or other infective lesions; and Dr. Roberts draws attention to the suggestion that has been made, that pressure on these vessels by inflammatory lymph might cause degeneration of the myocardium by impeding the normal supply of blood.

The article on Diseases of the Myocardium by Sir R. Douglas Powell has been revised, and in his contribution on Angina Pectoris numerous alterations have been made. Some elemental considerations have been introduced which aid in the elucidation of the subsequent remarks, and the author's classification of cases of angina pectoris is more fully explained. The pathology of the condition known as angina pectoris vasomotoria has been largely rewritten and the effects of nicotine upon the small vessels and heart are carefully discussed. A table has been included giving an instructive comparison between the main features and tendencies of vaso-motor angina and those of spasmodic asthma. Several additions have been made to the remarks on primary cardiac angina. In discussing the mechanism of angina Sir R. Douglas Powell points out that restricted supply of arterial blood has long been recognised as a cause of cramp in skeletal muscles, and affects by choice those muscles which are most in use. In cases of anginal seizure there is frequently a history that the first seizure occurred while walking faster or more laboriously than usual, and that subsequently less effort was sufficient to bring on an attack. In such cases the factors are probably the same as in those of cramp in the leg muscles—namely, restricted irrigation of the heart through contraction of its arterial supply, impaired removal of waste products, cramp, or paralysis. A discussion on this subject has recently taken place in our columns, which indicated the various opinions held by different observers.

An entirely new article on Stokes-Adams Disease has been contributed by Professor W. Osler and Dr. A. Keith. The pathology of heart-block and its bearing on cases manifesting the Stokes-Adams syndrome are fully considered. The conditions which may affect the auriculo-ventricular junctional system have only been comparatively recently studied, but Dr. Keith has collected observations on 21 hearts. The pathological lesions are divided into five groups, and these are described in detail. Briefly mentioned they are as follows: (1) the system has been broken by a gumma; (2) the system was partly fibrosed evidently as the result of arterio-sclerosis; (3) the bundle was implicated in fibrous or cicatricial tissue, probably from rheumatic endocarditis; (4) the system was the seat of fatty infiltration; and (5) the system was injured by an acute infection. The question of heart-block is an involved one and opens a large field for research. A good account of the clinical phenomena which are observed is given by Professor Osler.

The article on Mechanical Strain of the Heart by Sir Clifford Allbutt has been rewritten, and now bears the title Over-Strain of the Heart, and contains a section by Dr. R. W. Michell, the outcome of his special opportunities of watching University athletes. His remarks on the pulse-rates are particularly interesting. He says that the points which stand out most prominently, as the men are followed through the years of their healthy athletic lives, are: (1) the progressive reduction in the frequency of the pulse; (2) the progressive increase, in each succeeding year of residence, in the percentage of men who show this reduced pulse-rate; (3) the progressive decrease in the difference between the frequency of the morning pulse-rate, before exercise, and the evening, after exercise; and (4) the gradual increase in the size of the left ventricle. Dr. Michell then proceeds to give the indications of overwork, the earliest sign of which is a rise of the pulse-rate in the morning after exercise. Experience has taught him that it is impossible to exaggerate the importance of the observation that the heart is "spacing"; it means that rest is imperative, and if it is not taken other signs will appear, which signify that the case is passing out of the class of wearied hearts into that of "strained" hearts.

Dr. T. M'Crae (Baltimore) has revised the late Professor Dreschfeld's account of Acute Simple Endocarditis, and the more modern views on the subject have been duly incorporated. Several additions have been made in the article on Congenital Diseases of the Heart by Dr. Laurence Humphry. The section on cardiac signs has been considerably amplified, and the physical signs of stenosis of the pulmonary artery, of coarctation of the aorta, and of patent ductus arteriosus are described at greater length.

The article on Diseases of the Mitral Valve, by the late Dr. A. E. Sansom, has been brought up to date and more fully illustrated by Dr. G. A. Gibson. It is very properly pointed out that although for purposes of convenience obstruction of, and regurgitation at, the mitral orifice are considered separately, it must be borne in mind that, excluding functional incompetence, in the great majority of instances both disorders are present. There are, it is true, a certain number of patients who, at any rate for a time, furnish absolute evidence of mitral obstruction without accompanying incompetence, but even in these instances regurgitation is almost certain to appear sooner or later. Incompetence, on the other hand, may be produced by causes and lesions which, from first to last, exert no influence upon the course of the blood from the auricle to the ventricle. In considering any individual case it is important that these considerations should be borne in mind. An excellent description is given of the auscultatory phenomena met with in mitral stenosis, attention being especially drawn to the modifications of the second sound. The use of the cardiograph has afforded evidence of some importance in the elucidation of certain problems connected with mitral obstruction, and Dr. Gibson dwells on this subject at some length.

Diseases of the Aortic Area of the Heart are described by Sir Clifford Allbutt. Some interesting cases have been added illustrating the effects of strain or violence in the production of aortic disease. In discussing the sounds of the heart as heard in cases of aortic regurgitation the investigations of Ferramini are discussed, the results of whose researches seem to be that the degree to which the second sound persisted was inversely to the insufficiency. The suggestive and instructive account of Functional Disorders of the Heart has been largely rewritten by Sir Clifford Allbutt.

The description of Diseases of the Blood-vessels and Lymphatics occupies six chapters as follows: Arterial Degenerations and Diseases, by Dr. F. W. Mott; Aneurysm, by Professor W. Osler; Phlebitis, by the late Mr. H. H. Clutton; Thrombosis and Embolism, by Professor W. H. Welch, revised by Dr. H. D. Rolleston (two chapters); and Diseases of the Lymphatic Vessels, by Dr. H. D. Rolleston. The article on aneurysm is a new one; the remarks on treatment are noteworthy as indicating the present opinion held by physicians. After a survey of the principles on which therapeutic measures in regard to aneurysm are founded, the author is forced to the conclusion that rest is the important element, and that in suitable cases the triple measures—rest, diet, and iodide of potassium—should be given a thorough trial. In the cases which come under observation late with large sacs, a symptomatic plan of treatment should be followed.

The present volume contains a vast amount of information in connexion with diseases of the heart and blood-vessels. As a separate work of reference it is one of great value, while it forms a worthy addition to the "System," which now holds a high place in medical literature upon which Professor Allbutt and Dr. Rolleston may be heartily congratulated.

Studies in Immunity. By Professor JULES BORDET, Professor of Bacteriology at the University of Brussels, Director of the Pasteur Institute of Brabant; and his Collaborators. Collected and translated by FREDERICK P. GAY, A.B., M.D., Instructor in Pathology, Harvard Medical School. London: Chapman and Hall, Limited. New York: John Wiley and Sons. 1909. Pp. 545. Price $6, or 25*s.* 6*d.* net.

IT appears to be the fashion for writers on immunity to issue their contributions to this difficult subject in collected form, and if the fashion be admitted to be a good one no one can claim a better right than Professor Bordet to conform to it. His leading position in this field of research must be generally admitted, and the influence which he has exerted has been very great. The present collection is made and the articles are translated by his collaborator, Dr. Gay, whose name is well known in connexion with that of Bordet and some of whose papers on immunity appear in this volume. A general review of the subject of immunity has been written by Bordet especially for this book, but with the admission that there still exist too extensive gaps in our knowledge to make a comprehensive theory at present possible. He criticises the fascinating hypotheses put forward by Ehrlich and points out many instances in which physical reactions are exhibited by colloid substances very similar to some of the phenomena of agglutination and the like. He regards the fixation of alexine or complement by sensitised corpuscles as a phenomenon of adsorption. He also points out the marked alterations produced in an organism by cultivation on different media, so that a bacillus grown on blood-serum and on agar respectively produces by injection into animals a serum agglutinative of the particular culture used but not of that from the other medium. Of the papers included in the book space forbids us to give much more than an enumeration of the titles. The first paper is devoted to adaptive changes of bacterial cultures in the bodies of immunised animals whereby the weaker organisms are killed out and the virulence of the remainder thus appears to be increased. Chapters II. to V. deal with the properties of the serum of vaccinated animals and emphasise the importance of the leucocytes in immunity. Chapters VI. to VIII. are devoted to the problem of agglutination, showing the resemblance of this phenomenon to hæmolysis and the important part played in it by salts. In Chapter IX. is discussed the question of the unity or plurality of alexines and the nature of hæmolysis in general; and in Chapter XI. the same problems are treated of in relation to cytolysis. Chapter X. by Bordet and Gengou is on the nature of sensitising substances in anti-microbial serums; and papers by Gengou occupy Chapters XII., XV., XXII., XXV., and XXVI., dealing with the sensitising substances in serum active against albuminous substances, with certain properties of colloids and with molecular adhesion which may have a bearing on the phenomena of agglutination, and with the special sensitising substances which are formed against the tubercle bacillus; and another paper on this last subject is contributed by Bordet and Gengou in collaboration. The translator, Dr. Gay, writes on the single nature of hæmolytic immune bodies and on complementoids, on fixation and deviation of alexine, and in collaboration with Bordet on absorption of alexines and on the relationship between these bodies and the sensitising substances (Chapters XVI. to XIX. and XXI.). Chapter XX. is by Dr. J. G. Sleeswijk, and deals with the nature of opsonins, which may apparently be identical with either the sensitising substance or the alexine. In Chapter XXIII. Bordet and Streng deal with the phenomena of adsorption and the conglutinin of bovine serum; and Chapters XXVII. to XXIX. are devoted to the bacillus of whooping-cough. In Chapter XXX. Bordet records his researches on avian diphtheria, and the concluding chapter contains the *résumé* of the whole subject of immunity, to which we have already alluded.

Bordet's work is too well known to students of immunity to need commendation to them. The general reader who is interested in these matters will find the subjects here treated with admirable lucidity and in a manner that is not too technical for comprehension. The translator has done his work well and is to be congratulated on the volume which he has produced. The printing and paper are satisfactory and there is an adequate index.

Archives of the Middlesex Hospital. Clinical Series No. 3, being the Seventeenth Volume of the Archives. London: Macmillan and Co., Limited. November, 1909. Pp. 136.

This number contains: 1. A Lecture on Tubal Pregnancy, by John Bland-Sutton. The pathology of this condition is described in an interesting and lucid manner, and some admirable illustrations are given. 2. A Note on Two Cases of Total Removal of the Vagina, Uterus, and Appendages by Paravaginal Section, by Comyns Berkeley and Victor Bonney. The operation was devised by Schauta and has been but rarely performed in England. The two cases described in this note were both examples of carcinoma of the body of the uterus with vaginal metastasis. 3. Clinical Notes on Diseases of the Nervous System: Some Disorders of Gait, by H. Campbell Thomson. 4. Some Notes upon Abdominal Emergencies, by W. Sampson Handley. Some valuable hints are given in regard to the diagnosis of these cases and the decision as to whether operative measures shall be adopted. Mr. Handley inveighs strongly against the use of opium before a diagnosis is made. 5. Two Cases of Intestinal Abscess Pointing in the Upper Part of the Right Thigh, by Gordon Taylor. In one of these an appendix abscess led to involvement of the psoas muscle and pointed in the thigh, in the other a sinus was present in Scarpa's triangle leading to a Richter's hernia in the right femoral canal. 6. On the Nature, Prevention, and Treatment of Shock, by A. E. Johnson. 7. The Sensory Disturbances in Heart Disease, by Otto May. This paper contains an interesting analysis of the sensory disturbances in 50 patients suffering from heart disease and a discussion of the mechanism of cardiac pain and tenderness. Dr. May concludes that there is some factor concerned in its production other than the purely mechanical one, which is usually regarded as the cause. 8. Actinomycosis of the Vermiform Appendix, by Cecil Rowntree. 9. The Operative Treatment of Uterine Retro-displacements, by Frank E. Taylor.

This number also contains the reports of the Medical, Surgical, and Obstetric Registrars and of the Pathologist for the Year 1908.

LIBRARY TABLE.

The Royal London Ophthalmic Hospital Reports. Edited by William Lang, F.R.C.S. Eng. London: J. and A. Churchill. Vol. XVIII., Part I., January, 1910. Price 5*s.*—The contents of this number of the Ophthalmic Hospital Reports are: 1. Diseases of the Lymphoid Tissue of the Conjunctiva, by E. Treacher Collins. The contagious nature of trachoma is very clearly shown. The pathology is discussed. Radium treatment did not prove very encouraging in his hands. He thinks copper sulphate the most serviceable agent in effecting the removal of follicles which cannot be removed by expression. 2. A case of Obstruction of the Central Vein and Glaucoma, with remarks, by Dr. Tatsuji Inouye (Tokyo), with two plates which display the conditions well. 3. Retinitis Circinata and its Relation to Other Forms of Retinitis with Hæmorrhages and Exudates, by J. Herbert Fisher. 4. Cyst of the Pigment Epithelium of the Iris, by Claud Worth, illustrated by a chromo-lithographic plate. 5. Rupture of the Lamina Cribrosa, by Malcolm L. Hepburn, with two plates. 6. Three cases of Post-operative Infection, by Ilbert Hancock. 7. Teratoma of the Orbit, by R. J. Coulter and G. Coats, with five plates. 8. The Choroidal Blood-supply of the Retina, by Malcolm L. Hepburn. 9. A Clinical Study of Posterior Traumatic Cataract, by A. C. Hudson.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXIX. Pp. 330. Price 12*s.* 6*d.* net. 1909. London: J. and A. Churchill.—This volume of the Transactions of the Ophthalmological Society of the United Kingdom fully maintains the excellence which we are accustomed to expect. The outstanding feature is Mr. Edward Nettleship's Bowman lecture on Some Hereditary Diseases of the Eye. It is a lengthy *résumé* of the author's well-known work on the subject, running to 89 pages of text, with 60 pages of appendices in small print. Its value in a field which Mr. Nettleship has made peculiarly his own cannot be overestimated. Both he and the society which he was instrumental in founding are honoured by his delivery of the Bowman lecture and by his acceptance of the medal founded in his name and conferred upon him for his work on heredity. The volume contains several other papers illustrating inheritance or familial incidence of eye diseases—cataract, ectopia lentis, aniridia, and so on. Among the more striking communications are a case of Dipterous Larva in the Anterior Chamber, by Mr. F. G. Thomas and Mr. J. Herbert Parsons; a case of Orbital Abscess following Retinal Embolism, by Mr. A. L. Whitehead; a case of "Massive Retinal Exudation," by Dr. David J. Wood, and another case of the same nature, by Mr. A. Hill Griffith and Mr. A. W. Ormond; and a case of Pituitary Neoplasm in a child, by the late Mr. Ilbert Hancock. In an admirable paper on Congenital Anterior Staphyloma Mr. E. Treacher Collins warmly espouses the developmental theory of origin of the condition. The application of zinc ionisation and radium therapy to diseases of the eye is exemplified in cases reported by Mr. L. V. Cargill and by Mr. J. Mackenzie Davidson and Mr. Arnold Lawson respectively. Many cases of great interest and communications on subjects of theoretical and practical importance add to the value of a worthy contribution to the literature of ophthalmology.

Manual of Military Ophthalmology. By M. T. Yarr, F.R.C.S. Irel. London and New York: Cassell and Co., Limited. 1909. Pp. 228. Price 6*s.*—This manual, specially adapted to the use of medical officers of the Home, Indian, and Colonial Services, has reached a second edition and thereby demonstrated its utility. It is excellently suited for its purpose. Though a few slight errors have crept in and there are some statements which those with wide ophthalmic experience might be inclined to take with a grain of salt, Colonel Yarr's teaching is in all essentials quite reliable. The chapters on tropical eye diseass, including those associated with malaria, trachoma, and injuries of the eye, may be mentioned as specially worthy of consideration. The book is not intended to replace more exhaustive text-books or practical experience, but it is a useful and trustworthy guide for members of the services who, without special training, are called upon to deal with eye diseases.

Atlas of External Diseases of the Eye for Physicians and Students. By Dr. RICHARD GREEFF. London: H. K. Lewis. 1910. Pp. 140. Price 42*s.* net.—It has seldom been our lot to examine a more gruesome series of plates than those contained in this volume. Disease is often repulsive, but the repellent features are unnecessarily exaggerated in these coloured reproductions of wax models, each framed in white, irresistibly reminiscent of the charnel house. We are not altogether favourably disposed towards atlases of external diseases, though we admit that they have their great uses. Verisimilitude is not always attained, however great pains may have been taken, and there is a temptation for the student to rely on the plates instead of making himself thoroughly acquainted with the diseased conditions themselves. We cannot consider this work as an advance upon its predecessors in the same field.

Annals of Ophthalmology. Editor, W. T. SHOEMAKER, M.D., Philadelphia; Associate Editor, C. W. PARKER, M.D., St. Louis, Mo. Vol. XIX. No. 1, January, 1910. St. Louis, Mo.: Jones H. Parker. Annual subscription, 18*s.* —This number reproduces a good photograph of the late George C. Harlan, M.D., a well-known ophthalmic surgeon of Philadelphia and a former president of the American Ophthalmological Society, and contains the following articles, besides numerous excerpts from continental works on ophthalmology. 1. A translation by Clarence Loeb, M.D., of St. Louis, of an article on the Physiology of Pupillary Movements, published in the July number of the *Archives d'Ophtalmologie*, 1909, by Dr. Charles Lafon. 2. Transferred Ophthalmitis, by Charles A. Olivers, M.D., of Philadelphia. 3. The Visual Requirements of Transportation Employés, by Nelson Miles Black, M.D., of Milwaukee, Wis. This article deals chiefly with the distance and colour vision of signalmen, engine-drivers, look-out men, and flag-lieutenants. 4. The Relief of Glaucoma through Subconjunctival Injections of Sodium Citrate, by Hayward G. Thomas, M.D., and Martin H. Fischer, M.D., of Oakland, California. 5. Do Diseases of the Accessory Sinuses cause Keratitis Parenchymatosa? by Edward J. Bernstein, M.D., of Kalamazoo, Michigan. 6. Report of a case of Parinaud's Conjunctivitis with Unusual Complications, by Frederick Krauss, M.D., of Philadelphia, and M. P. Boyle, M.D., of Glenside, Pa. 7. Modified Knapp Roller for Expression in Trachoma, by W. Norton Whitney, M.D., of Tokyo, Japan.

Open Air at Home or Continuation of Sanatorium Treatment. By STANLEY H. BATES. With Introduction by Sir JAMES CRICHTON-BROWNE, M.D. Edin., F.R.S. Bristol: John Wright and Sons; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 62. Price 2*s.* 6*d.* net. —This little book is warmly commended by Sir James Crichton-Browne in his introduction and we can entirely endorse his commendation. Mr. Bates is a layman who underwent a successful "cure" in a sanatorium for tuberculosis, and who continued his treatment in his garden at home. He erected a shelter which after sundry trials he managed to get as near perfection as is possible in this world, and in this shelter he lived and worked for three years. Mr. Bates lays great stress on the fact that the medical expert is the person who must be obeyed, and "the question whether and to what extent a patient may carry out the open-air treatment on the lines described in this book must be one for the doctor to decide." The book is simple, practical, and sensible.

The Dietetic Treatment of Diabetes. By B. D. BASU, Major, I.M.S. (retired). Allahabad: The Panini Office. 1909. Pp. 52. Price 1 rupee 8 annas.—Over 700 years ago that learned man John of Salisbury wrote concerning the "theoretical" physicians of his day: "With all my admiration I am much troubled at one thing, and that is that they are so singularly at variance in their discussions and in the opinions which are drawn from them. For this one thing I do know, that contraries cannot both be true at one time." And in these modern days much the same may be said as to the proper diet for diabetics. For when all is said and done we know but little more as to the pathology of diabetes than did the mediæval physicians, despite the light thrown by Bernard upon the glycogenic functions of the liver. As to treatment, all are agreed that regulation of the diet is important. But all are not agree das to what shape this regulation should take. Many physicians now allow a certain quantity of carbohydrates with benefit to their patients. Major Basu's thesis is that the inhabitants of India, who in many cases eat no meat even when they do suffer from diabetes, have it in a very chronic form, and his little book is a plea for allowing carbohydrates, which are best taken together with fat in some form. He gives a variety of grains, seeds, and nuts which are used in India, and puts forward a strong plea for the use of the cocoa nut. Cocoa nuts in this country cannot, of course, be obtained in the same condition as they can be in India, but even so they might form a desirable variation in the monotonous diet of the diabetic. Major Basu's interesting little book will be found useful to medical men, who are often sorely taxed to devise an acceptable diet for their diabetic patients. Diabetes is above all a disease in which every case must be treated on its merits, for a diet which succeeds with one patient will frequently do another harm.

Pharmacopedia: a Commentary on the British Pharmacopœia, 1898. By EDMUND WHITE, B.Sc. Lond., F.I.C., and JOHN HUMPHREY. Second edition. Illustrated with 46 plates. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1909. Pp. 697.—This is a very useful book to the student of the Pharmacopœia, inasmuch as it sets forth in the light of recent knowledge "the nature and composition of substances to be used in medicine." This last expression we quote from the British Pharmacopœia itself, but as everyone must admit "the nature and composition of substances to be used in medicine" do not form in that work a complete story, and hence the value of a work in which "the official descriptions of drugs are amplified and the tests explained." So far as we have examined the practical sections of the work, and they obviously occupy a very large share of the pages, there can be little doubt, we think, that they will give assistance to pharmacists and others to whom "descriptions and tests" are of importance. In this connexion the "Pharmacopedic Atlas" at the end of the volume may be particularly commended, which contains a large number of illustrations of crude drugs and microscopical sections. The drawings are very well done, the characteristic markings and forms of leaves, barks, roots, with transverse sections, being particularly well defined. The analytical sections, which are directed to the estimation of definite substances, give evidence of the writers being in touch with recent advances in volumetric and gravimetric analysis. The work deals with the official medicaments only, the authors regarding a supplement on non-official substances as unnecessary in view of the publication of the British Pharmaceutical Codex, which deals with these on the lines indicated.

JOURNALS AND MAGAZINES.

Centralblatt für Allgemeine Pathologie und Pathologische Anatomie. Band XXI. No. 1, Jan. 15th, 1910; No. 2, Jan. 31st.—No. 1 contains:—1. A paper by Professor Julius Arnold of Heidelberg entitled "Do the Cells of the Bone Marrow, especially the Eosinophiles, contain Glycogen?" By means of various reactions, including Best's carmine stain, the presence of glycogen is established in the eosinophile, pseudo-eosinophile cells, and in some leucocytes in the bone marrow of various animals and in that of children dying from certain acute affections. 2. A paper on Comparative Researches into the Micro-chemical Reaction for Iron in Human Livers, by Dr. Jasuyoshi Nishimura of Tokyo. The methods in use for demonstrating iron in tissues were critically examined, especially the ammonium-sulphide and the Berlin-blue methods. Dr. Nishimura found the former more reliable, but owing to the colour obtained the iron is more difficult to differentiate from other pigments. He therefore worked out a method by which the iron was first fixed by ammonium sulphide and subsequently stained blue by the other method. Professor Kaiserling, under whose supervision the work was carried out, appends a note on the paper and refers to the recent work of Hueck on the same subject, in which similar results were obtained.——No. 2: 1. Dr. Walter Fischer of Freiburg contributes a paper on Foreign-Body Giant Cells in Amyloid Disease of the Spleen. Giant cells induced by amyloid degeneration are known to occur in other regions. Dr. Fischer found them abundantly present in the amyloid spleen of a woman aged 68 years, dead from putrid bronchitis and bronchiectasis. The giant cells were of the "foreign body" type with numerous nuclei, for the most part collected at one pole. The cells are regarded as resulting from the irritation of the connective tissue induced by the foreign body, and not necessarily as an attempt at removal or of repair. 2. Dr. Josef Kyrle of Vienna contributes a paper dealing with the Interstitial Cells of the Human Testis. The origin and functions of these cells have been much discussed. Dr. Kyrle, on the strength of his examination of the testes of a four-year old boy, believes that they promote and assist the development of the epithelium of the seminiferous tubules.

The Archives of Internal Medicine. Vol. V., No. 1. Jan. 15th, 1910. Chicago: American Medical Association.—The contents of this number are: 1. Chronic Passive Congestion of the Liver, by Dr. Channing Frothingham, Junr., of Boston. He finds that uncomplicated chronic passive congestion of the liver, even in cases of long standing, does not necessarily lead to atrophy and disappearance of liver cells, although these changes often occur. Hæmorrhagic necrosis of the liver is a very frequent complication of chronic passive congestion of that organ, but probably occurs only in cases with cardiac insufficiency. 2. Chronic Aleucæmic Enlargement of the Lymphatic Glands, by Dr. C. W. Duval of New Orleans and Dr. C. P. Howard of Montreal. They record a case of the type usually referred to as Hodgkin's disease, with the histological characters described by Fischer, Reed, and Longcope. They deprecate the use of the term Hodgkin's disease, and conclude that the most suitable name would be "granuloma cryptogeneticum." 3. Various Forms of Experimental Arterial Disease in the Rabbit, by Dr. Miner C. Hill of New York. He finds that spontaneous arterial disease in the rabbit is a factor to be reckoned within this connexion. In 210 presumably normal rabbits such lesions were found in 15 per cent. The common type of these lesions could not be distinguished histologically from that due to adrenalin. Such spontaneous lesions apparently explain the results formerly ascribed to single injections of adrenalin. 4. Three cases of Addison's Disease, one with Adrenal Transplantation, by Dr. F. C. Busch and Dr. Thew Wright of Buffalo, N.Y. They found little benefit from treatment with adrenal preparations, but they regard their results from transplantation as "far from discouraging." 5. The Total Energy Requirement in Diabetes Mellitus, by Dr. Eugene F. Dubois of New York, and Dr. Borden S. Veeder of Philadelphia. They record their observations on patients in the Pettenkofer-Voit Chamber, from which they conclude that the total energy requirement of cases of diabetes does not vary from the normal. They suggest that in addition to the 31–35 Calories per kilogramme required for the normal individual at rest the diabetic should be given enough extra Calories to cover the loss of sugar in the urine. 6. Syphilis of the Thyroid, by Dr. Benjamin F. Davis of Chicago. Details are given of a case with a description of the pathological changes found. An analysis of the cases previously recorded is also given. 7. The Peculiarities of Nitrogenous Metabolism in Pernicious Vomiting of Pregnancy, by Mr. Frank P. Underhill and Dr. Richard F. Rand of New Haven. They criticise the views of some other observers that there is evidence of sub-oxidation or deficient desamidation in this disease and suggest that the urinary changes are induced by the accompanying inanition. They believe that in such cases the administration of energy-yielding food-stuffs is of greater value than giving food rich in nitrogen.

Ophthalmology. Vol. VI., No. 2, January, 1910. Edited by H. v. Würdemann, M.D., assisted by a numerous staff of American and foreign ophthalmologists. Quarterly journal, published in England by George Keener and Co., 16a, Red Lion-square; in the United States at 411, The White Building, Seattle, Washington. Price, per annum, £1 3*s.*—The original articles contained in this number are the following: 1. A Study of Heterophoria and Heterotropia, by Edward Lauder, M.D., Cleveland, Ohio. 2. Demonstration of the Size and Position of the Angle Alpha by a Simple Modification of the Javal-Schiötz Ophthalmometer, by Dr. Lucien Howe, Buffalo, N.Y. 3. Mixed Astigmatism with Meridians of Astigmatism not crossing at Right Angles, by Waten L. Pannell, M.D., New York. 4. A Pocket Ophthalmoscope, by J. Herbert Claiborne, M.D., New York. 5. A New Skiascope, by Clinton T. Cooke, M.D., Seattle. 6. A Case of Temporary Monocular Amblyopia, possibly due to Embolus in the Optic Nerve, by Howard F. Hansell, M.D., Philadelphia. 7. Some Clinical Observations upon Sympathetic Ophthalmitis, by Dunbar Roy, M.D., Atlanta, Ga., with three figures. 8. Visible Movement of Blood in Retinal Vessels, by G. S. C. Nagel, M.D., San Francisco, Cal. 9. Massage as an Occupation for the Blind, by L. Webster Fox, M.D., Philadelphia, Pa. 10. Conjunctival and Other Reaction Tests to Tuberculin, by Charles A. Olivers, M.D., Philadelphia. He strongly recommends them for diagnostic purposes. 11. Remarks on the Tuberculin Treatment of the Eye, by Dr. Junius, Köln, Germany. 12. Injury to the Eye from the Presence of Anilin Pencil in the Conjunctival Cul de Sac, by Albert C. Snell, M.D., Rochester, N.Y. 13. Transfixion of Cornea by Hatpin without Injury to Lens, by Alfred G. Bennett, M.D., Buffalo. 14. Preliminary Note on Increased Intra-ocular Tension met with in cases of Epidemic Dropsy, by Lieutenant-Colonel F. P. Maynard, I.M.S., Calcutta. 15. Obituary Notice, with portrait, of George Cuvier Harlan, M.D. There are in addition numerous abstracts from English and foreign works on ophthalmology.

The Medical Graduates' College and Polyclinic.—The annual general meeting of the Medical Graduates' College and Polyclinic will be held at 22, Chenies-street, London, W.C., on Friday, March 11th, at 5.15 p.m.

# Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) LEUCOFERMANTIN; AND (2) FIBROLYSIN GUTTAPLAST.

(E. MERCK, 16, JEWRY-STREET, LONDON, E.C.)

1. Leucofermantin is described as a normal animal serum, the antiferment property of which has been so far increased as to correspond at least to the anti-tryptic index of normal blood serum. Its therapeutic application is indicated in inflammatory processes accompanied by suppuration and fermentation in which it is desirable to prevent an extensive and dangerous destruction of tissue. Clinical trials are reported which are in favour of the use of leucofermantin in suppurative processes leading to abscess formation. Its therapeutic effect is marked in suppuration of the tendon sheaths and in abscess of the eyelid. Leucofermantin is applied to open suppurative foci by simply pouring it into the cavity. Otherwise a small incision is made and the anti-ferment injected preferably after draining the abscess by means of an aspirator. The serum is said to be free from harmful secondary effects and incidentally it is mentioned that leucofermantin has been successfully employed in diabetes. 2. Fibrolysin, which consists of thiosinamin (oil of mustard in an alcoholic solution of ammonia) and sodium salicylate, has been used intramuscularly and hypodermically, and intravenously in the treatment of pathological scar tissue. It has been suggested that in the form of plaster fibrolysin might be suitable for external application in some cases of keloids, and superficial scars and tumours which are covered only with a thin layer of epithelium. The plaster is said to be useful in the treatment of X ray dermatitis, promoting the absorption of superfluous pathological tissue when applied to wounds during the healing process.

DIABETIC RASPBERRY JAM.

(CALLARD AND CO., 74, REGENT-STREET, LONDON, W.)

We are able to agree with the statement in regard to this special food preparation that it does not contain more than 2 per cent. of sugar. On extracting the jam with 75 per cent. alcohol the total sugar obtained amounted to 1·90 per cent. Whilst the attractive flavour of the raspberries is preserved it is somewhat marred by the mawkishness of the glycerine present. Physiologically the preparation is sound, having regard to the special purpose for which it has been designed, but it is not very attractive. However, a safe addition to the diabetic diet is always useful where monotony has to be avoided.

PORTURTLE.

(STEVENS BUER AND CO., 27, MINCING-LANE, LONDON, E.C.)

This wine is stated to be made from Oporto wine and genuine turtle. We have examined it in regard to its nitrogenous constituents, with the result that we found that 0·44 per cent. of protein was present. Chemical analysis is powerless to say what is the source of this protein. In view of the definite amount of protein present there can be no doubt that the wine is to some extent nourishing besides stimulating.

PANKREON.

(WIDENMANN, BROICHER, AND CO., 33, LIME-STREET, LONDON, E.C.)

We have examined pankreon on a previous occasion, when we were able to confirm that its digestive action is secured in the duodenum whilst it passes through the gastric area unimpaired. In other words, pankreon begins to digest as soon as it reaches an alkaline environment. Its resisting action to the gastric juice is due to the ferment being combined with a tannin albumin compound. Further, it is conceivable that the tannic acid present tends to prevent intestinal putrefaction. Our tests *in vitro* showed that in a weak alkaline solution, in spite of the presence of alkaline tannates, insoluble proteins were hydrolysed. Recent reports state that pankreon has been found to be of distinct service in the relief of gastric migraine.

TROMMER'S ELIXIR.

(THE TROMMER CO., LIMITED, 27, CHARTERHOUSE-SQUARE, LONDON, E.C.)

This is a powerful formula in regard especially to the assistance which it is likely to give to healthy metabolism. It contains the active enzymes of malt, glycerophosphates, and what is described as the alkaloidal extractives of cod livers. Putting aside the question as to whether alkaloidal extractives of cod livers are of any therapeutic value, especially having regard to the fact that the value of cod liver oil is very generally ascribed to the facility with which it is absorbed and digested, we were able to obtain evidence of the presence of biliary acids. Thus an acid ether extract of the elixir gave a residue which on treatment with glucose-sulphuric acid gave a play of colours resembling the Petenkofer reaction for bile salts. Further experiments showed a decided digestive action of the preparation in regard to starch. The presence of glycerophosphates was also confirmed. The preparation is probably of value chiefly in cases of malnutrition.

VALEROBROMINE (LAGRAND).

(GUYOT-GUENIN AND CO., 67, SOUTHWARK BRIDGE-ROAD, LONDON, S.E.)

The claims in regard to the therapeutic advantages of valerobromine are simple. In the first place, the valerianates are unpleasant to take and have a disagreeable odour; in the second, what is known as "bromism," manifested in gastric disturbance, cutaneous eruption, and mucous catarrh, is known to be frequently a sequel to the administration of ordinary mineral bromides. Valerobromine presents an organic combination of the two constituents, the actions of which it is stated are complementary and their individual drawbacks are mutually eliminated. We had no difficulty in recognising the presence of both valeric acid and bromine, and the latter was certainly in organic combination. The indications of valerobromines are in neurasthenia, epilepsy, insomnia, and nervous disorders generally. Valerobromine is a sodium salt or bromovalerianate, which is a crystalline substance soluble in water.

THIOCOL.

(THE HOFFMANN LA ROCHE CHEMICAL WORKS, 7 AND 8, IDOL-LANE, LONDON, E.C.)

Thiocol is an interesting compound of guaiacol sulphate with potassium. It dissolves readily in water and is practically odourless and tasteless. By suitable treatment the guaiacol present, which amounts to 52 per cent., can easily be separated, although, generally speaking, the salt is stable. It would appear to offer some advantages over guaiacol and creasote in the treatment of tuberculosis and pulmonary affections in general. It is said to be, for example, without irritating effects on the gastric mucous membrane. There can be little doubt of its destructive action upon the tubercle bacillus, judging from a report which has reached us in which infected rabbits treated with thiocol were the subject of trial. For purposes of administration tablets containing 5 grains of thiocol are prepared.

OLD SERCIAL MARSALA.

(HENRY URQUHART, 16, WATER-LANE, GREAT TOWER-STREET, LONDON, E.C.)

A clean, dry, non-acid wine which may be placed in the category of high-class marsalas. Analysis gave the following results: alcohol by volume, 17·17 per cent.; extractives, 5·23 per cent.; mineral matter, 0·50 per cent.; volatile acidity reckoned as acetic acid, 0·15 per cent.; fixed acidity reckoned as tartaric acid, 0·42 per cent.; potassium sulphate, 0·31 per cent.; and sugar, 2·86 per cent. The wine has an elegant flavour characteristic of the best Sicilian wine; it is non-acid, it is not sweet, and is clean to the palate.

New Inventions.

NEW INSTRUMENTS.

THE following instruments, which I have used for some time at St. Peter's Hospital and elsewhere, were made for me by Mr. J. H. Montague of 69, New Bond-street, London, W.

FIG. 1.

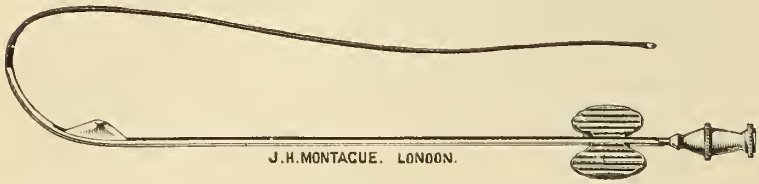


FIG. 2.

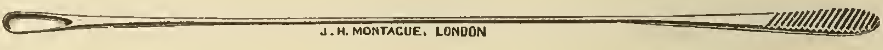


FIG. 3.

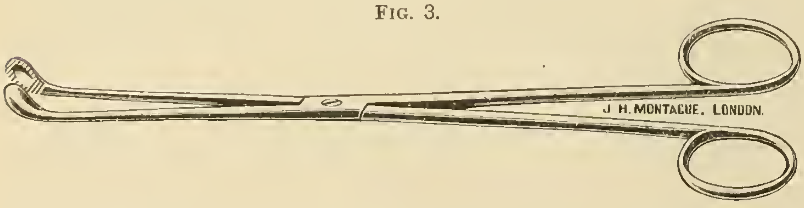


FIG. 1.—*A modification of Maisoneuve's urethrotome.*—The defects in Maisoneuve's urethrotome are mentioned in the following paragraph and their remedies. The new urethrotome loses nothing in simplicity, while it is, I believe, a more efficient instrument. (*a*) The staff weakened by the groove is apt to buckle when there is difficulty in introducing it through a tough stricture, and further, the groove is difficult to keep clean. To meet these objections a stilette is provided which fits the groove accurately and gives stability, while it serves also for cleaning the groove. The stilette is withdrawn for the introduction of the knife. (*b*) The groove passes almost to the point of the instrument and the knife must therefore run into the prostatic urethra if pushed home. In the new instrument the groove is carried only to the commencement of the curve so that with the staff held at an angle of 45° the knife passes only as far as the membranous urethra. (*c*) The curve of the staff is improved so as to fit the urethra accurately. (*d*) In the original instrument a small ring on the under surface serves to steady the staff while the stricture is being cut. This is replaced by two large lateral metal wings which the assistant holds with the finger and thumb of each hand. (*e*) The knives are now stamped on the terminal button with the size in millimetres to which they cut. (*f*) The filiform guide of the Maisoneuve instrument ends abruptly in a metal terminal which contains the female screw. This shoulder often hitches in a narrow stricture, and the staff follows the guide with difficulty. The filiform guide tends to fray and break here. This is remedied by tapering the metal end of the guide so that it passes inside the flexible portion for a short distance.

FIG. 2. *A ureteric scoop with flexible handle.*—The scoop measures ¼ inch across and 1 inch long, and tapers to a fine flexible handle the size and thickness of a stout probe. The handle is 10½ inches in length, and is ridged to indicate the hollow side of the scoop. The instrument is useful for removing a small calculus which lies a few inches down the ureter, and especially where the kidney cannot be brought to the surface or where the space between the ribs and the iliac crest is narrow. It is also useful where a small stone lies in the pelvic segment of the ureter, for by means of the scoop bent to the proper angle the calculus can readily be brought up to an opening in the ureter above the brim of the pelvis.

FIG. 3. *Fine long forceps*, eight inches in length, with terminals ½ inch long and ¼ inch broad, which are set at an angle and are hollow with a ridged contact edge. When these forceps are placed along the radial surface of the left forefinger the terminals pass round the tip of the finger. In exploring a kidney or renal pelvis a small calculus which is just reached by the tip of the forefinger can be removed with these forceps without enlarging the wound.

FIG. 4.

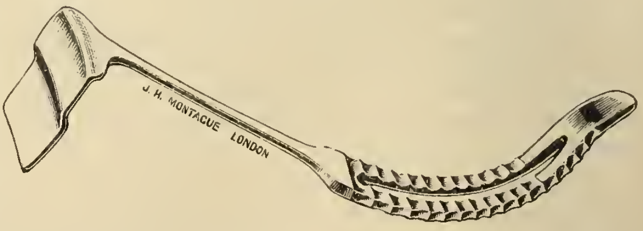


FIG 4. *Bladder retractors.*—These retractors consist of a retracting portion, a shaft, and a handle. The retracting portion commences vertically where it is attached to the shaft, and ¾ inch below this it curves suddenly outwards for ½ inch and then becomes vertical again for 1¼ inch. The edge of this portion is smooth and the corners are rounded. Transversely it is concave inwards. The shank is horizontal, and from this the handle curves upwards almost to a right angle and ends with a short recurve, the under surface of which is hollowed. The handle is fenestrated and ridged. The object of this instrument is to retract the abdominal wall and cut edge of the bladder wall by horizontal traction, and to push the collapsing lateral bladder wall outwards by a tilting action. This combination of traction and tilting is obtained by the peculiar construction of the handle, which is grasped in the hand with the thumb held vertically, pushing up into the hollow of the recurved portion.

These instruments are made in different widths of the retracting portion (1¾ inch, 1¼ inch, ¾ inch are useful sizes). The vertical size and the shape of the retracting portion, and the shaft and handle, remain unaltered.

J. W. THOMSON WALKER, M.B. Edin., F.R.C.S. Eng.,
Assistant Surgeon to St. Peter's Hospital for Stone and other Urinary Diseases.

THE LANCET.

LONDON: SATURDAY, MARCH 5, 1910.

Some Speculations on the Poor-law Medical Service of the Future.

IN applying the term "Poor-law" to a service of the future, to be organised under new conditions imposed by the legislature, we use a convenient expression for which no substitute has as yet been provided. The "break up of the Poor-law" is a phrase which has established itself in public favour, but whether that destruction of existing agencies is to be effected upon the lines of the "Majority Report" or upon those of the "Minority Report," the combined monosyllables are apparently to be eliminated from our vocabulary; and whether the medical officer of the future is to serve under a new "Public Assistance Authority," as recommended by the Majority, or under the sanitary authority, as the Minority prefers, he will have to be distinguished by a new title. It is, however, with the possible changes in the scope of his duties, in the nature of his responsibilities, and in his general status that he is more immediately concerned, whether he views the situation from the standpoint of the officer to the guardians or from that of the general practitioner, and the familiar phrase may as well be retained for the present. With a view to obtaining the opinion of existing Poor-law medical officers upon suggested innovations the Poor-law Medical Officers' Association has addressed to its members the series of questions which we print on another page (p. 670), and to which we have added one or two observations of our own. We need, perhaps, hardly say that these questions will be answered with more authority by those who have studied in the original Blue-book the reports of the Majority and Minority Commissioners, together with some at least of the criticism which has since been made upon both of these in THE LANCET and elsewhere. They will thus understand the full effects of their answers and appreciate to what degree a particular reply tends to commit them as supporters of the one scheme or of the other. Probably neither report is wholly satisfactory to the general body of Poor-law medical officers, and many who read the questions and consider them in relation to the reports will find that in both their official and private capacities they will be tempted to give answers at variance with the findings of the Commissioners. There is, of course, another point of view besides that of the supporter of one report or the other, and we would point out to those who answer these questions, or who endeavour to make suggestions as to what the Poor-law Medical Service of the future should be, that it may be possible to adopt recommendations from both reports and to remodel the administration of public relief upon lines not drawn exclusively from either. We may suggest, in explanation, that if reference is made to Question 11 it will be found to ask for criticism of the principle upon which the Minority desires that public medical aid should be rendered. Question 6 asks, in like manner, for an opinion upon the Minority's proposals as to the authority which is to render that aid, and to be responsible for its efficiency, employing, paying, and organising a medical service for the purpose. We submit to our readers as a thing well worthy for their consideration the question whether support of the Majority or of the Minority upon one of these questions need necessarily bind them to the taking of the same side as to the other. It appears to us that some may reasonably think that the existence of a Public Assistance Authority with power to discriminate between those who are fitting subjects for public or, may we say, "Poor-law" aid, and those who are not, is not altogether incompatible with the amalgamation of the Poor-law Medical Service and the Sanitary Service, so that the one service should perform (not necessarily through the same individual officers) the functions of both. In short, it is possible to contemplate an authority responsible for the curing and prevention of disease which should have its subject matter allotted to it by another authority charged with the duty of preventing the abuse of public aid, medical and sanitary, by those not properly its objects.

The fifth question propounded by the Poor-law Medical Officers' Association calls attention at once to the address of Dr. JOHN C. MCVAIL recently delivered before a convention of Sheffield societies, the constructive part of which we publish in full (see p. 664). It will be observed that Dr. MCVAIL in his opening paragraph makes a number of suggestions which might well engage the attention of the central authority before the introduction of any great legislative change. The greater number of them will secure the assent of those engaged in the Poor-law service as well as of other members of the medical profession; and those who have read the Majority Report will recognise the weight given to Dr. MCVAIL'S opinions by its signatories[1] in these respects and with regard to other topics. We may refer to his views upon Question 5, which relates to the institution and organisation of provident dispensaries as part of a new system of public assistance. This, it will be remembered, is the conspicuous feature which distinguishes the Majority Report, so far as its proposals affect the medical profession. The subject is one for the consideration of the profession at large, as well as of those who are now members of the Poor-law service, no less than is the scheme for the enlargement of the Poor-law service. Medical opinion is not likely to be enthusiastically in favour of the improved provident dispensary, for such an institution clearly carries much risk to certain forms of general practice, but we would ask those who are adverse to it to weigh carefully the words of Dr. MCVAIL when he dwells upon what he regards as the essential feature of its proposed improvement. There is, he points out, "no fair or reasonable analogy between such clubs (sick clubs as they have existed in the past) and the suggested medical provident institutions." We confess that we foresee many difficulties in the institution of such dispensaries and in the ensuring that they shall work smoothly and satisfactorily with regard to the medical profession and the public. Probably they would be more acceptable to both in purely working-class districts of the poorer kind, where the private practitioner would not be likely to find himself after a time attending his more lucrative patients as members of the dispensary, and as such in return for reduced fees. The free choice of a medical attendant, moreover, is likely to lead to difficulties if we assume that some patients are now influenced in their selection of a particular medical adviser by the fact that his fee is lower than that of another whom they would otherwise prefer. And yet it is extremely difficult to say that a man who pays for his medical attendance, if his contribution forms a substantial part of the fee received by the medical man, should not be allowed to select the practitioner whom he desires. We do not, however, gather from the Majority Report that it recommends free choice of a medical attendant for the Poor-law 'patient—i.e., for the applicant who is not a member of a provident society. It is contemplated that he shall be attended by a district medical officer, at any rate as long as the post of district medical officer survives.

---

[1] THE LANCET, April 10th, 1909, p. 1065.

As we understand it, the proposal of improved provident dispensaries is made with a view to prevention, and is part of a policy for keeping outside the Poor-law (we still use the term as a convenient one) those who might otherwise, and through ill-health, lapse from independence into dependence upon public assistance. A modified or partial public assistance, in short, is suggested for these taking the form of the subvention of the dispensary from public sources. It is this that promises an improved financial status for the dispensary. The question relating to provident dispensaries should produce some interesting replies from Poor-law medical officers, and we are inclined to anticipate that difficulty will be found by some in accepting the principle of the selection by the subscriber of any medical man attached to the dispensary. It is a scheme of great public importance, but from a medical point of view it does undeniably suggest possibilities of rivalry and friction of a more or less serious nature. It may, in short, be found that the higher the qualifications of those medical men whom the improved conditions will attract, the less acceptable those conditions will appear to some of their brethren. It must be remembered that the questions to which we have referred are put to the members of an important public service with a view to obtaining their opinions upon points which intimately affect themselves and their personal interests, as well as the welfare of the community, and that, if we rightly understand the trend of the two reports, the scope and importance of the public service will be enlarged under either, but more conspicuously under that of the Minority. On the other hand, the Majority Report would have the dispensary extend its membership downwards among those who now are too improvident, or who think themselves too poor, to subscribe, and at the same time, extending upwards, would have it provide State-aided medical attendance for a class which has hitherto procured medical attendance for itself.

The Teeth of the Soldier.

THE perfect mastication and insalivation of the food have been proved by experimental investigations—notably those of Sir MICHAEL FOSTER—to produce not only great economy in general nutrition but also a remarkable improvement in the condition of the gastro-intestinal tract. During recent years considerable attention has been directed by the medical authorities of the army to the subject of dental sufficiency for recruits, and a fairly uniform standard is gradually being evolved. It has to be borne in mind that a recruit for the regular army must be fit for the average conditions of European warfare, and that recruits for the Reserve forces (formerly termed the Militia) must be fit for the average conditions of warfare in the United Kingdom, a safe rule being that the poorer the physique of the recruit the higher the standard of teeth to be demanded of him. Each recruit must have the equivalent of one of the following minimum standards, each tooth being either sound or efficiently stopped. The teeth in the upper jaw only are named, and they must correctly oppose corresponding sound or efficiently stopped teeth in the lower jaw. (1) Wisdom and second molar on one side of the mouth ; (2) first and second molar on one side ; (3) first molar and both bicuspids on one side ; (4) first molar and second bicuspids on both sides ; (5) first molar and second bicuspid on one side of the mouth and both bicuspids on the other side of the mouth ; (6) both bicuspids on each side of the mouth ; (7) one molar on one side and both bicuspids on the other side. The remainder of the teeth are left to the judgment of the recruiting medical officer. Loss or decay of teeth causes yearly the largest number of rejections for any one cause in recruits for the army. In 1908 no less than 3279 recruits were rejected for this cause, in 1907 2861, in 1906 3719, and in 1905 4824. Approximately 19 per cent. of all recruits rejected on inspection by recruiting medical officers are lost to the army owing to deficient or defective teeth, and this estimate does not include men who are rejected by recruiting agents. These figures are of the utmost importance when it is remembered that the possession of defective teeth goes with a good physique quite as often as with a poor physique.

During the South African war a great number of men were found to be unable to consume the hard biscuit of the field service ration owing to lack of efficient teeth, and so many men had to be invalided that recruiting medical officers have since then very rightly paid particular attention to the standard of masticatory efficiency. There is no doubt, however, that some of the inefficiency attributed to defective teeth during the war was overrated. A fair proportion of it was really due to the effects of scorbutic taint and lowered vitality brought about by a prolonged campaign in which "freshness" of food was at a minimum. Men tired of prolonged active service also sometimes made use of bad teeth as an excuse for not being able to eat the field rations and for going to hospital. As a result of the number of men who had to be invalided the standard for the masticatory efficiency for recruits was increased to such an extent that the pendulum swung rather too far in the direction of increased efficiency. No account was taken of the large number of almost toothless soldiers who, under the exceptionally trying conditions of the war, not only remained in good health but did their duty alongside their comrades who, although better off in teeth, were eating hard biscuit with difficulty. A less stringent standard for teeth was adopted in 1906–07, and a diminution in the number of rejections followed. Many recruits were passed into the army through the aid of dental treatment at the public expense who would otherwise have been rejected, upwards of 1700 men being gained under these conditions in 1907 out of 5849 men enlisted for the army. In the Northern Command alone 915 recruits were brought up to the standard by the dentist in the year, and in the London District 295 men were similarly rendered efficient during the seven months the regulations regarding dental treatment were in force. It was, however, noticed that in the London District and in the Eastern Command the ratio of rejections for defective teeth increased after the introduction of the system of dental treatment for recruits. This was found to be due to recruiting agents bringing up candidates with very inferior teeth in the hope that they might be accepted by the help of dental aid.

When we consider the question of invaliding serving soldiers for dental inefficiency, it will be found that before the South African war defective or deficient teeth caused very little invaliding from the army; in fact, this cause of invaliding was of so little importance that it was thought by the authorities not to merit mention in their annual reports. During recent years the official statistics show that in 1906 of 1792 men discharged from the service on medical grounds no less than 147 were invalided for caries of the teeth; in 1907 of 1685 men invalided, 58 were discharged from the same cause, the diminution being partly due to a less rigid standard of dental sufficiency and also as a result of greater care being paid to the preservation of the teeth. In 1908 67 men, out of 1486 discharged on medical grounds, were invalided for dental caries. The very fact that soldiers have to be discharged in such numbers from the army for caries of the teeth seems to indicate that greater attention should be paid in barracks to the care of the teeth, and that insufficient examination is made of the men's teeth from time to time, so as to check the progress of caries by dental aid. There can be little doubt that if men are taught to care for and preserve the teeth they possess by using the tooth-brushes which are issued free by Government to each man much can be done. From the time they enlist their squad, section, and company commanders should see that they keep their teeth clean. It should be no more difficult to teach them to keep their teeth clean than their rifles. The result will repay any little trouble or attention, and the habit once acquired will also repay the men by much personal comfort. Each commanding officer should have a small sum allotted to his unit annually for dental repairs, and these should be expended under the supervision and advice of the medical officer of his unit. At present large sums of money are allotted by the War Office to commands and distributed by principal medical officers to administrative medical officers for the purpose of dental treatment, but a roundabout method is enforced as to its expenditure. If a soldier wishes to have a tooth stopped he has to apply to a medical officer, the latter has to make a chart of the man's mouth and obtain an estimate from the local dentist at contract rate and apply to have the estimate sanctioned by the administrative medical officer. Correspondence means delay and is tiring to all concerned. The system of dental treatment at contract rates by civilian dentists should prove successful, but it is to the early education of the recruit in the care of his teeth in barracks that we must look for an improvement in the dental efficiency of the soldier.

◆

A New House for the Royal Society of Medicine.

IT is now widely known that the Royal Society of Medicine is to build itself a new house which shall be worthy of the body that has in its keeping the scientific progress and solidarity of British medicine. This decision has more than a domestic importance. During the last century at least five serious attempts were made to amalgamate the principal medical societies having their meetings and habitations (when these existed) in London, but every one fell through, and it was not until 1905 that the scheme which led two years later to the constitution under Royal Charter of the Royal Society of Medicine was first officially and publicly discussed. Since that date the history of the society can be summed up in the one word, success, and it is that very success that is urging the society to expansion both for the better accommodation of its present members and in preparation for a considerable accession to its ranks. The number of Fellows drawn from the original constituent societies was 1823, and the number of Members 688, making a total of 2511. At the present time there are 2335 Fellows and 993 Members, making a total of 3328, whilst three new sections, those of Anæsthetics, Diseases in Children, and Balneology and Climatology, have been added to the society since its inauguration. The authorities of the society have seen that in the not distant future provision must be made for 6000 or 7000 Fellows and Members, and this could only be done by buying or building a house which should belong exclusively to the society and be properly equipped to meet all reasonable demands.

At the end of last year a general meeting of the society was held, whereat it was proposed that the money necessary for the change of quarters should be raised by a scheme of insurance. This did not commend itself to the meeting, but an able exposition of the state of the society's affairs which was made on this occasion by Dr. ARTHUR LATHAM, one of the honorary secretaries, must have convinced most of those present that a move into larger quarters was at least expedient for the society's welfare. Since then steps have been taken, for at a meeting convened at the beginning of last month the society resolved to grant an 80 years' lease of 20, Hanover-square, the premises which were taken over from the Royal Medical and Chirurgical Society, from Lady Day next for a very substantial rental; and No. 15, Cavendish-square has been secured to afford temporary premises for the society until the erection of its new house. The site chosen for this building may be called almost the pivot of medical London, for it is at the corner of Henrietta-street and

Cavendish-square, and occupies an area of very nearly 10,000 square feet. Upon this a house with either three or four floors and a basement will provide ample accommodation for a society even of the size to which it is confidently expected that the Royal Society of Medicine will attain. No freehold site was available in the locality required, and in days when it is unusual to hear a good word for a ground-landlord it is gratifying to learn that Lord Howard de Walden has made a considerable concession in granting a fresh 99 years' lease of this site, although the lease actually purchased has 21 years fewer to run. The premium for this lease is £7500 and the ground rent is £400 per annum, and to meet the capital expenditure investments have been realised by the society. We understand that the documents in execution of these several transactions have actually been signed. There remains the question of the building and the equipment of the new premises. In order to raise the necessary funds the society has expressed itself to the effect that the appeal should be made within its own ranks, and in accordance with this wish a letter has been addressed to the Fellows and Members asking for their help in raising the sum of £30,000 which it is estimated will be required for these purposes. The appeal is based broadly upon the consideration that the society's income and expenditure are estimated to nearly balance each other, leaving a small favourable margin, but that if economies are effected sufficient to pay interest on a new debenture loan the attractions and usefulness of the society would be very considerably diminished. This would mean that the whole object of the expansion of the premises would be falsified.

We commend this appeal to the medical profession in the first place and to wealthy laymen of culture and public spirit in the second. The welfare of the Royal Society of Medicine is not an affair that concerns only metropolitan practitioners. Medical men all over the kingdom and, indeed, throughout the Empire have sought, and should seek, admission to its doors, and the adequate housing of its magnificent library alone should be a matter of national medical interest. When we consider the premises of kindred medical bodies in other capitals it is disconcerting to think that we have been content to go on so long without any such central institute as is now proposed. The union of medical societies out of which the Royal Society of Medicine has been created should have one of its greatest justifications in the opportunity afforded to its constituents of keeping in personal touch with their scientific colleagues and with the contemporary thought and literature of medicine. In other words, a proper home to be the headquarters of national medicine is required. And seeing that whatever makes for professional efficiency makes for the comfort and safety of the public it is plain that a gift towards the proper establishment of the society on a permanent footing in an adequate house would be money well spent by any member of the community. We believe that the present needs of the Royal Society of Medicine may be met in a perfectly legitimate manner by lay benefactions no less than by the contributions of the great body of medical practitioners, while we consider that the scientific progress of medicine in this country is in some sort bound up closely with the fortunes of the Royal Society of Medicine. There is room for other societies, and other societies will flourish, but the Royal Society of Medicine will not fulfil the ideal of those responsible for its creation unless it assumes a national character. We should like to see the society's appeal meet with a liberal response from inside the medical profession, but we should also like to learn of lay benefactions. For the society has already put the public in its debt by appointing committees of inquiry into several questions of vital importance to the public welfare—we need only instance the committee which dealt recently with the resuscitation of the apparently drowned—and it is a good thing that the community of interests between the medical profession and the public should be recognised. Medicine has little endowment in this country, and in the Royal Society of Medicine there is an opportunity for administering financial encouragement to the progress of the most humanitarian of sciences which will well repay the man who takes it.

Annotations.

"Ne quid nimis."

THE DISPENSING OF POISONS BY MEDICAL PRACTITIONERS.

In The Lancet of Jan. 29th attention was drawn to an inquiry held at Fulham coroner's court, and more especially to the fact that the jury asked the coroner to lay the circumstances of the case before the Home Secretary, "in order that legislation providing for a distinctive form of bottle might be brought about." It was pointed out that the regulations as to the methods of storing and dispensing poisons, with which pharmacists were by law compelled to comply, were not applicable to medical practitioners, but it was suggested that this fact in no way lessened the obligation of medical men who dispense to carry out the same methods of safety to the public as if the law was obligatory upon them. At a meeting of the Executive Committee of the General Medical Council on Feb. 21st a letter was considered from the Privy Council drawing attention to the suggestion that the regulations in question should be extended, by legislation, to medical men, and asking for observations thereon. It was resolved by the Executive Committee:

> That the Lord President be informed that the suggestion that the regulations in question should be extended, by legislation, to medical men has been laid before the Executive Committee, and that the committee approves such extension as tending to ensure the safety of the public.

In these circumstances, it will be useful to state that the regulations are as follows:—

1. That in the keeping of poisons each bottle, vessel, box, or package containing a poison be labelled with the name of the article, and also with some distinctive mark indicating that it contains poison.
2. Also that in the keeping of poisons, each poison be kept on one or other of the following systems, viz.:—(*a*) In a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary; or (*b*) in a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary; or (*c*) in a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles.
3. That in the dispensing and selling of poisons all liniments, embrocations, lotions, and liquid disinfectants containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.

MEDICINE AND HONORARY DEGREES AT TRINITY COLLEGE, DUBLIN.

WELL inspired was the initiative taken a twelvemonth ago by the University of Oxford in publishing the "orationes" setting forth the claims of her adopted sons to the degrees she conferred on them, and now we have her Dublin sister following suit, and on similar lines entertaining us to a "march-past" of the distinguished personages, male and female, whom she admitted to the academic "civitas." We are promised, moreover, from the University of Cambridge a further series of "orationes," in which the Public Orator has recommended the meritorious of both sexes to honorary graduation—the three volumes thus forming a triptych in illustration of the learning and the achievement of the contemporary world. The value of such a record is manifest to none more than to the future historian, who will find in the series a gallery of portraits, or rather a cabinet of cameos, in which he can study the features, intellectual and moral, of the men and women of whom he will have to take cognisance. The language in which these likenesses are conveyed is the traditional Latin, which, in addition to its clearness, brevity, and dignity, has the further advantage of "fixity," no longer liable to the changes, more or less subtle, so apt to modify the meaning of the languages called "living." Latin, indeed, if never likely to become universal, as the Humanists of the Renaissance believed, has, *ipso facto*, the quality of permanence or immutability which gives to its words that "monumental" character which still makes it the appropriate medium of epigraphy, and of such succinct and concentrated presentation as is embodied in the "orationes" above referred to. Long practice in the *métier* has made such oratory one of the "fine arts," in which successive masters have perfected themselves, no previous Public Orator having excelled, or even equalled, Dr. W. W. Merry of Oxford or Dr. Arthur Palmer or Professor Tyrell of Dublin, or, not inferior to the best of these, Dr. Sandys of Cambridge. Addressing as they do not only their respective audiences but the whole outlying world of learning and achievement, these "orationes" will impress the sympathetic foreigner with the catholicity of British culture, as there is hardly a sphere of human activity known to civilisation in which they fail to recognise merit or on which they do not set the seal of academic approbation. Conspicuous among the professions thus honoured is the most progressive, the most universally diffused of all, that of the healing art in its multifarious departments, propædeutic, theoretical, and practical, and it is with special pleasure that we note the frequency, as in the Oxford series so in that of Dublin, with which the biologist, the sanitarian, the surgeon, and the physician pass before us in a pageant, which gives to either volume the semblance of a literary and scientific or a professional and social "field-day." Beginning with the honorary degrees conferred at the celebration of the tercentenary of the University of Dublin in July, 1892, we note the names of the late President of the Royal College of Surgeons of England, Mr. Thomas Bryant, and of Sir Jonathan Hutchinson and Professor J. S. Billings of New York, happily still spared to us, and of Gusserow of Berlin, Sir Andrew Clark of London, and Sir T. Grainger Stewart of Edinburgh, since "gone to the majority." The "orationes" in which each of these eminent surgeons or physicians was recommended for the degree of M.D. is quite a literary gem, signalising with a few masterly strokes, in Latinity of exquisite purity and finish, the contributions made by each recipient to the healing art, scientific or clinical. Then follows a long line of "graduands" on whom the degree of Doctor of Science was conferred, the medical calling once more coming in for special recognition in the persons of Sir J. Burdon-Sanderson, Sir Michael Foster, Sir G. Murray Humphry, Professor A. Macalister, Professor Kollmann of Basle, Dr. Ch. Richet of Paris, Sir William Turner of Edinburgh, and Professor Wilhelm Waldeyer of Berlin. This closes the list of tercentenary honours, and next comes, year by year, from 1888 to 1908 a goodly company of men of light and leading, selected from nearly every calling or career open to merit, on all of whom degrees, in one or other faculty, were bestowed. Once more medicine in its several branches receives ample and cordial recognition—the names, which we give in alphabetical order, representing such contributors to scientific or clinical knowledge as Sir T. Clifford Allbutt, Sir Lauder Brunton, Professor D. J. Cunningham, Sir T. R. Fraser, Sir W. R. Gowers, Professor Albert Kossel, Dr. John Marshall, Dr. Pye-Smith, Sir Richard Quain, Professor Ronald Ross, Professor E. A. Schäfer, Professor C. S. Sherrington, Sir H. R. Swanzy, Professor W. H. Thompson, Sir Frederick Treves, Sir Willoughby Wade, and Sir Almroth Edward Wright. The task of recommending these for graduation seems to have fallen in pretty equal proportions to the late Dr. Arthur Palmer, professor of Latin, and to Dr. R. Y. Tyrell, professor of Greek, both Public Orators of signal critical power and skill in portraiture. Our readers must turn to the volume itself[1] for illustration of the refined scholarship and felicitous allusion with which the several "orationes" achieve the results of miniature painting in prose, and we can promise them a treat such as they have enjoyed in the sister volume of Dr. Merry of Oxford, noticed just a year ago in these columns under the title of "Medicine in the Sheldonian Theatre."

RHEUMATIC INFLAMMATION OF SEROUS MEMBRANES.

IT is well known that inflammation of the serous membranes, especially of the pericardium and pleura, with or without endocarditis, may occur during the course of acute rheumatism. Dr. Ernest Mosler of Berlin, in an interesting paper in the *Berliner Klinische Wochenschrift* of Feb. 14th, points out that multiple serous inflammations may occur suddenly in rheumatic subjects and that they may dominate the clinical picture. He also claims that this condition, to which the inelegant name of polyserositis rheumatica has been applied, is less uncommon than is generally supposed, since during the last 18 months there have been 15 such cases in the first division of the Rudolph Virchow Hospital at Berlin. The cases fall into two groups—one in which the condition occurs during the course of an attack of acute rheumatism of severe character, seldom beginning before eight days and often not until three weeks after the onset of the joint symptoms. In the other group there is more difficulty in recognising the nature of the affection of the serous membranes, the joint symptoms preceding them being slight in character and easily overlooked, so that the clinical picture is more suggestive of septicæmia. In both groups the onset of severe symptoms is sudden. There are usually severe stabbing pain in the region of the heart, severe dyspnœa, increasing until orthopnœa supervenes, and an increase in the sensation of heat and fever. In some cases shortly after the onset friction sounds can be heard in the pericardium and pleuræ, and in most cases by the second day these are widely heard, and at this time there may be some dulness on percussion at the bases of the lungs. In the majority of cases the pericardial friction persists during the course of the affection, while the pleural friction disappears owing to the occurrence of pleural exudation, which, however, rarely reaches a degree sufficient to require tapping. In some cases endocarditis complicates the condition and may supervene during or after the other serous inflammations. Some degree of myocarditis occurs in all cases, and very shortly after the onset of symptoms marked irregularity of the pulse with dicrotism and sometimes with bigeminism develops. The pleurisy and the pericarditis usually clear up without leaving any permanent damage, but the myocarditis, if persistent or if complicated by endocarditis, may cause convalescence to be very protracted and may be followed by organic mitral regurgitation. In a few of Dr. Mosler's cases the toxic nature of the affection was clearly manifested by evidence of renal irritation in the form of albuminuria with abundant casts. In all the cases investigated blood cultures proved sterile. The pleural exudation consisted almost invariably of turbid, serous fluid and also gave negative results on bacteriological examination. Cytological investigations showed more leucocytes than lymphocytes. Dr. Mosler believes that the dyspnœa, which is the symptom causing most distress to the patients, is due to the pericardial inflammation and not to the fluid in the pleural cavities. The prognosis of the condition is by no means bad, and in general is more favourable after puberty than in childhood. Of the 15 patients studied by Dr. Mosler, 10 were discharged cured, 4 were left with severe mitral regurgitation and some chronic rheumatic changes in the joints, and 1 case died. The treatment adopted was to give antipyrin in solution as the anti-rheumatic medium with the least harmful effects, and to give small doses of morphine for the relief of the pain and dyspnœa. Good results were invariably obtained from this latter drug, and even a small, rapid, and irregular pulse was not regarded as a contra-indication to its use. Locally warm applications to the præcordial region gave relief, and painting with iodine was also found to be useful. The application of an icebag proved to be unpleasant to all the patients to whom it was applied. In cases with severe affection of the myocardium digalen was given, and subsequently carbon dioxide baths were employed. The condition of polyserositis or polyorromenitis formed the subject of an interesting paper by Dr. F. Taylor[1] some years ago, who pointed out the importance attached to these cases by Italian observers. Similar multiple serous inflammations occur in pyæmia and in tuberculosis.

---

[1] Trinity College, Dublin. Speeches of Public Orators delivered at the Comitia held for Conferring Honorary Degrees. Dublin: Hodges, Figgis, and Co.

THE METROPOLITAN WATER-SUPPLY (NOVEMBER, 1909).

The Water Examiner has recently issued his report on the condition of the Metropolitan water-supply during the month of November, 1909. The mean rainfall during the month at 12 stations which were selected as giving equal representation for all parts of the Thames basin was 0·84 of an inch, being 1·85 inches below the average mean rainfall for the month during the previous 26 years. The average daily flow of the Thames at Teddington weir during the month was 1384·8 million gallons, being 46·8 million gallons below the daily average for the month during the preceding 26 years. A table is given in the report which shows for the month in the different districts the storage capacity in gallons for unfiltered water and also the number of days' storage. In the New River district the number of days' storage was only 10·8, while in the western district it was only 11·7; in the eastern and southern districts 56·2, and 32·9 days' storage were available respectively during the month. The water from the Kent works being derived wholly from 18 deep wells in the chalk and one in the upper greensand needs no storage or filtration before delivery. Another interesting table gives for November, 1909, the percentage of the total supply derived from the different sources. The figures are as follows: from the Thames 57·88 per cent., from the Lea 22·99 per cent., from springs and wells 19·04 per cent., from ponds 0·08 per cent. The number of gallons of water supplied per head per day during the month is given for the different districts. The mean supply for London as a whole was 31·17 gallons. In the eastern district an average amount of 28·06 gallons per head per day was supplied, while in the western district 35·53 gallons was the daily quantity. Accompanying the report of the Water Examiner is an interesting report on the Results of the Chemical and Bacteriological Examination of the London Waters for the month, by Dr. A. C. Houston, the Director of water examinations of the Metropolitan Water Board. This report shows that Dr. Houston is continuing the very important systematic routine examinations which are so essential in safeguarding the London water from serious contamination, since any dangerous breakdown in the purifying processes to which the water is submitted would at once be shown by the exhaustive analyses made. The results of the chemical analyses for November, 1909, show that the standard of purification was not so high as in November, 1908, both for raw and filtered waters. Speaking generally, the albuminoid nitrogen figures and the figures for oxygen absorbed from permanganate were markedly higher for almost all the districts than for the corresponding period in 1908. A great number of detailed bacteriological examinations have been made and the results are tabulated. They show for the month the average number of bacteria present per cubic centimetre for filtered and for raw waters, also the number and types of the bacillus coli communis present have been carefully determined, and the results of the special tests for the bacillus enteritidis sporogenes are given. On the whole Dr. Houston regards the bacteriological results as satisfactory. Dr. Houston has given the results of the chemical and bacteriological examinations for the autumn quarter (September, October, and November), 1909. These compare unfavourably with the corresponding period for 1908, and Dr. Houston thinks that the meteorological conditions of the autumn months of 1908 were more favourable from a water purification point of view.

REGICIDAL MEGALOMANIA.

An Italian correspondent writes: "On Feb. 14th in the establishment for criminal lunatics at Montelupo (Tuscany) died Giovanni Passanante, condemned to solitary imprisonment for life, after having on Nov. 17th, 1878, attempted to assassinate King Humbert. The circumstances were these. His Majesty, who had been some nine months on the throne, was visiting Southern Italy, and on the date above referred to drove through the streets of Naples with the Queen, the boy Prince of Naples (now King Victor Emmanuel III.), and the Prime Minister, Benedetto Cuiroli. All four were in the Royal equipage when suddenly there sprang from the crowd a young man who, resting with one foot on the carriage step, levelled a stiletto blow at the King. The weapon just grazed His Majesty's shoulder, but a second blow took effect on Cuiroli, inflicting a punctured wound just above the knee. That intrepid patriot, who had seized the would-be assassin, still, though wounded, maintained his hold upon the wretch till he was overpowered and removed in custody. The incident, which scarcely occupied three minutes, told gravely on the Queen and the boy Prince, the latter, it is said, having been so terrified during the struggle as to have incurred convulsions which recurred for many weeks thereafter, particularly at night. Passanante, convicted after a State trial, during which he confessed by way of *apologia*, that he wanted to rehabilitate society by levelling down all distinctions of rank, was sentenced to solitary incarceration for life in the Island of Elba, a short experience of which, however, induced such manifest decrepitude—physical and mental—that he was transferred to the establishment for criminal lunatics at Montelupo. Hence he dragged out his existence among felons similarly afflicted, spending his time in working out grotesque designs in dough (latterly in clay), symbolising the social state as he dreamed it ought to be. A collection of these is preserved in the Museo Antropologico at Montelupo, and will doubtless figure in the expert report on his case now in preparation. For further examination with that object his head has been removed, and its configuration, capacity, and contents are now being subjected to minute observation and analysis. The report cannot fail to be highly interesting and instructive, and will form one of a series of which the 'Biografia del Bandito, Giuseppe Musolino, di Fronte alla Psichiatria ed alla Sociologia' (Biography of the Brigand Joseph Musolino, in Relation to Psychiatry and Sociology), is perhaps the most elaborate and illuminating, due, as it is, to the research and expository skill of Dr. E. Morselli, professor of psychiatry at Genoa, and of Dr. S. de Sanctis, *privat-docent* in the same subject in the University of Rome. Pending the publication of the report, the effects of solitary confinement on prisoners for life ending, as the dread ordeal well-nigh invariably does, in dementia (when not cut short by suicide), the question of how far such a form of punishment is justifiable has again cropped up, the upholders of capital punishment renewing their contention that the death penalty is infinitely more humane and in all respects more conducive to the interests of society than the 'intra-mural sepulture' (as it is not inappropriately called) which is substituted for it. Certainly, the abolitionists cannot claim for their method of vindicating justice and protecting society the efficacy of a deterrent, as the example of Italy, after 30 years trial of it, is the reverse of reassuring—her statistics of homicide being such as to maintain for her a sinister priority in lethal crime throughout Christendom, and to fortify the French legislature in reviving the guillotine which has (with results similar to those in Italy) been practically suspended."

---

[1] Brit. Med. Jour., Dec. 15th, 1900, p. 1693.

WILL LEAD APPEAR WHEN POLONIUM DECAYS?

THIS momentous question promises soon to be decided, now that Madame Curie (and with her M. Debierne) has obtained a weighable quantity of polonium from pitchblende. According to an interesting note upon the subject by Professor R. Rutherford in *Nature* of Feb. 24th there are present in 1000 kilogrammes of pitchblende containing 50 per cent. of uranium 170 milligrammes of radium, and the weight of polonium is about 1-5000th of this, or about 1-30th of a milligramme. In order to obtain 1·10th of a milligramme of pure polonium several tons of high-grade pitchblende must be worked up. The fact, therefore, that Madame Curie has obtained a weighable quantity of polonium implies again an enormous amount of painstaking work which must receive our admiration. It should be pointed out, however, that Murckwald, operating on 15 tons of pitchblende, obtained some time ago 3 milligrammes of intensely active material which he called radio-tellurium, since tellurium was amongst the isolated products. The possibility of decay into other elements had not then received serious discussion, but Murckwald's purified product showed an activity far greater than that of radium. It was evidently polonium, for it gave off the typical α-radiation. Since polonium, as Professor Rutherford points out, emits α-particles, one of its products of decomposition, as for all other α-ray products, should be helium; and further, since polonium is the last of the active products observed in the radium series, it is to be expected that polonium will be transformed into helium and lead, one atom of polonium producing one atom of helium and one atom of lead. But no doubt, he adds, an interval must elapse to allow the polonium to decay before the final examination of the residual substance can be made. Madame Curie's excitement as to the issue of the degradation will be universally shared.

A PARATYPHOID CARRIER.

IT is now well recognised that persons who have suffered from typhoid fever may harbour the bacillus for years after recovery and be a source of infection to others. In the *Progrès Médical* of Jan. 15th Professor E. Sacquépée and Surgeon-Major Bellot have described what appears to be the first recorded instance of a paratyphoid carrier. It may be remembered that paratyphoid fever is a disease which clinically resembles typhoid fever but is not due to the typhoid bacillus, but to an organism with cultural characters intermediate between the typhoid and the colon bacillus. This disease was first described by Schottmüller in 1901. Two types of paratyphoid bacillus, A and B, are recognised by their different cultural characters. On potato the growth of A, like that of the typhoid bacillus, is invisible, while that of B forms a greyish brown pellicle, like the colon bacillus. In the case described by Professor Sacquépée and Surgeon-Major Bellot the type B was present. In a corps of 250 soldiers which formed part of a garrison an outbreak of paratyphoid fever occurred. On June 14th one man was attacked, on the 15th two men were attacked, on the 16th five, on the 18th five, on the 19th three, on the 20th two, and on the 21st one, making a total of 19 cases in eight days. Most of the cases ran a benign course, a few were severe, and none were fatal. The duration of the disease was from 15 to 22 days. In three cases meningeal symptoms—intense headache, rigidity of the neck, and Kernig's sign—were prominent. The diagnosis was soon made by bacteriological examination. In seven out of eight cases cultures made from the blood showed the paratyphoid bacillus of the type B. In 12 cases the stools and urine were examined. The bacillus was found ten times in the stools and twice in the urine. Finally, a positive serum reaction for the paratyphoid bacillus of the type B was obtained in all cases. In investigating the outbreak attention was drawn to the fact that the "epidemic curve" corresponded to the manifestations of a water-borne or food-borne disease; the cases at first were numerous; the outbreak lasted some days and then ceased. The drinking water was exculpated; its examination before, during, and after the outbreak revealed nothing abnormal. The men in the other corps of the garrison, who consumed the same water, were free from infection. The source of infection must therefore have been the food. The cooking arrangements for the affected corps were special to it. The source of infection could not have been raw food, for although salads, strawberries, and the like, were distributed, they were not consumed by all the patients or even by a majority of them. The source must therefore have been cooked food. Properly cooked food has never been known to convey typhoid fever unless it was contaminated after cooking, and such contamination by typhoid carriers is now well known. This outbreak must therefore have been due to someone employed in the kitchen who was infected with the paratyphoid bacillus. It was found that a cook had an illness for some days before June 10th characterised by lassitude, headache, anorexia, and pains in the limbs. He was so ill that he sought medical advice, but he remained at work. Examination of his stools revealed the paratyphoid bacillus of the type B in notable quantity, and the same result was obtained many times in August, September, and October. He also gave the serum reaction for the bacillus. Evidently his illness was a mild attack of paratyphoid fever and after recovery he remained a paratyphoid carrier.

A HITHERTO UNRECOGNISED CONSTITUENT OF TOBACCO SMOKE.

THE toxic constituents of tobacco smoke would appear to be legion, and recently one other quite definite substance has been added to the number, although there is no proof that it is a directly poisonous substance. The category hitherto included a formidable array of poisonous substances such as carbon monoxide, prussic acid, nicotine, pyridine, sulphuretted hydrogen, carbolic acid, and so forth, and now it may be easily demonstrated that there are present also thiocyanates or sulphocyanides presumably of ammonia. It is well known, of course, that sulphocyanide of potassium is usually a constituent of saliva, but its rôle apparently has not been defined. Although, however, cyanogen is present in the salt it does not appear to be poisonous, for in the modern language of the ionic theory the cyanogen group is combined with sulphur to form the anion SCN. The cyanates are similarly non-poisonous since the anion is not CN but OCN. Arsenic and mercury, again, are relatively speaking non-toxic in the form of complex salts such as the cacodylates, atoxyl, and so forth, because the arsenic and mercury exist in a complex ion instead of, as in the case of the arsenites or mercurials, in a simple ion in which the identity of the metal is not lost. The new discovery does not therefore necessarily intensify the evils of tobacco smoking.

INTRACRANIAL PSEUDO-TUMOURS.

IN THE LANCET of Feb. 19th, p. 496, Mr. Richard Roper of the St. Marylebone Infirmary reported a case of spinal meningitis resembling tumour of the spinal cord; laminectomy was successfully performed and recovery ensued. At the operation all of a pathological nature that could be discovered were adhesions between the spinal dura mater and the pia arachnoid. The clinical picture of the case was highly suggestive of compression from a spinal tumour, and operation was undertaken for this reason, with the above-noted result. Such cases are not unusual, and the number of reported instances has increased since attention was drawn to the subject by Sir Victor Horsley. In not a few the adhesions matting the membranes together have produced a sort of cystic collection of cerebro-spinal fluid (though this was not noticed in Mr. Roper's case), which acts mechanically on the spinal cord as a compressing agent. To the condition the somewhat undesirable title of "spinal pseudo-tumour" has been given, but the expression "meningitis serosa circumscripta" is preferable, as in some of the reported cases that exactly expresses the state of affairs found at the laminectomy. At intervals, for a number of years back, instances of what may prove to be an analogous condition involving the intracranial contents have been published, but in these the symptoms have naturally been more diversified. The general signs of intracranial pressure have been present in the shape of headache, giddiness, vomiting, and optic neuritis, and focal signs also have not been wanting, yet at operation or at necropsy no traces of a cerebral tumour have been found. In the light of knowledge gained from a study of the spinal cases we may well expect that a meningitis serosa circumscripta may occur intracranially, but at present information on the point is particularly meagre. That pseudo-tumour cerebri is no rarity is evidenced by a paper on the subject from Dr. Finkelnburg and Dr. Eschraum, which appeared in the *Deutsche Zeitschrift für Nervenheilkunde* for 1909. These writers noted seven cases where the diagnosis of intracranial tumour was inevitable; in one the symptoms pointed to a right cerebellar situation for the tumour, and the patient was trephined. Death ensued eight days afterwards, but post mortem neither tumour nor hydrocephalus was found; indeed, there was no recognisable pathological change. In the other cases, most of which, in addition to the ordinary triad of tumour symptoms, presented cerebellar localising signs, prolonged treatment with iodide made no appreciable difference in the condition, yet complete recovery followed in practically all, and in some has been maintained for years. It is no doubt conceivable that a small tumour may become latent and the symptoms due to its presence may vanish, but several of the cases reported by these German writers suggest that there is some pathological condition with which we are not familiar which simulates intracranial tumour, but from the point of view of prognosis is widely different, and it is possible that a consideration of the analogy between these and the spinal cases specified above may prove of some value.

THE CONSTITUENTS OF COLOCYNTH AND OF RED CLOVER FLOWERS.

TWO interesting pharmacological papers from the Wellcome Chemical Research Laboratories appear in the February number of the *Journal of the Chemical Society*. The first, by Frederick B. Power, Ph.D., and C. W. Moore, B.Sc., deals with the constituents of colocynth, which, although used in medicine for a long period, does not appear to have received a complete chemical examination. The extract of the fruit pulp yielded (1) a new de-hydric alcohol—citrullol; and (2) an amorphous alkaloidal principle possessing an extremely bitter taste and representing one of the purgative principles of the fruit. The resinous substances insoluble in water gave ether and chloroform extracts which possessed marked purgative properties even after removal of the active alkaloidal principle. The outcome of the research appears to be that the so-called "colocynthin" and "colocynthitin," as well as the other products obtained from colocynth by previous investigators to which specific names have been attached, consist of mixtures of a very indefinite character, and that the amount of glucosidic substance contained in the fruit is extremely small. On the other hand, it has now been ascertained that the purgative action of colocynth is due to at least two principles, one of which is alkaloidal, although a very weak base apparently incapable of forming any crystalline salts, while the other source of activity is represented by some non-basic principle or principles contained in both the ether and chloroform extracts of the resin. No evidence could be obtained of the presence in colocynth of β-elaterin, which constitutes the physiologically active constituent of the fruit of Ecballium elaterium. The paper on the constituents of red clover flowers is also by Frederick B. Power, associated with A. A. Salway, B.Sc., Ph.D. Red clover flowers (Trifolium pratense) appear to have been used medicinally for their assumed alterative properties and have even been recommended in cancer. They are mentioned in the National Standard Dispensatory (United States Pharmacopœia, 1905). The constituents yielded were chiefly an essential oil containing furfuraldehyde, sugar, salicylic and p-coumaric acids, a new yellow compound, $C_{16}H_{10}O_7$, iso-rhamnetin, phenolic substances, glucosides, trifolin, rhamnose, and a glucoside of quercetin. A resinous material was obtained equal to 5·6 per cent. of the weight of the dried clover flowers. This yielded certain definite compounds, including alcohols and fatty acids, saturated and unsaturated. There is no record of any physiological experiments having been made with any individual member of the successfully isolated products which might have thrown light on the popular assumption that red clover possesses medicinal (chiefly alterative) properties.

THE ELECTIONS TO THE ROYAL SOCIETY.

THE Council of the Royal Society have recommended for election into the society 15 new candidates, among whom are Sir William B. Leishman, the Professor of Pathology in the Royal Army Medical College, Dr. A. E. Garrod, Dr. F. A. Dixey, and Mr. H. G. Plimmer. Sir William Leishman is well known in connexion with the discovery of the Leishman-Donovan body of kala-azar, with a method of estimating the opsonic index, with researches on the spirochætes of relapsing fever and tick fever, and has also taken great interest in antityphoid inoculation in the army. Dr. Garrod has won well-deserved distinction for his work in connexion with errors of metabolism, urinary pigments, alkaptonuria, and cystinuria. He has been Croonian lecturer and Bradshaw lecturer at the Royal College of Physicians of London, and we have had the honour of publishing his pathological work in our columns. Mr. Plimmer is well known in two pathological connexions—namely, as a worker in the etiology and histology of cancer, and as an investigator in connexion with the trypanosomata of sleeping sickness and the natural history of tsetse-fly disease. There is a circumstance attached to Mr. Plimmer's election which we consider particularly important. His ingenious and severe labours in connexion with the pathology of cancer were negative in result and might therefore have escaped recognition. It is, we think, much to the credit of the Royal Society that the value of this work has not been lost sight of. Mr. Plimmer's labours represent a phase in the investigation which had to be gone through and which, being accomplished, cleared the ground both for himself and for others for future work. Such efforts should be rewarded and perhaps all the more is this the case because superficial people may estimate them wrongly. Dr. F. A. Dixey has been demonstrator of physiology in University College, London, and in the University of Oxford, and is President of the Entomological Society of London; his more distinctly medical work has been in the fields of epidemiology and vital statistics. To all four of our medical brethren we tender our congratulations, and no less to Professor G. C. Bourne, Linacre professor of physiology at Oxford.

THE FLUSHING OF ENTERIC FEVER PATIENTS.

OUR Budapest correspondent has sent us an account of a paper read by Dr. Mayer on Water Drinking as a Treatment for Typhoid Fever. He said that medical men have for long recognised the value of the free administration of water in this disease and it is common to ask the patient to drink at least one litre in the day. He has recently, however, made an interesting trial of the effects of giving greatly increased quantities of water during the course of typhoid fever. By the regular administration of about five ounces of water every 15 minutes during waking hours (as first suggested by Dr. H. Cushing in America) he was able to give each patient from 8 to 14 pints of water per day, in addition to about 3 pints of other fluid, which usually consisted of milk and albumin water, the water used being filtered river water. These apparently enormous quantities of fluid were taken with ease, and naturally produced a marked increase of the urinary secretion. This polyuria, after the second day of the treatment, was found to keep very exact pace with the amount of fluid ingested, although any considerable diarrhœa or sweating would, of course, upset the correspondence for the time being. As a therapeutic means of diminishing toxic symptoms, Dr. Mayer has great faith in copious water drinking for typhoid fever, and has had an experience of more than 100 cases treated in this way. Under this system he says that headache is much less common; the general comfort of the patients is increased; the tongue and mouth remain clean, and nausea is unusual. Restlessness, sleeplessness, and delirium cause less trouble, while the bath, which Dr. Mayer uses in his practice whenever a patient's temperature reaches 38° or 39° C., was but seldom necessary. Contrary to expectation, the movements of the bowel were practically unaffected by the water treatment. The patients themselves soon came to like the treatment, and in many cases voluntarily increased the amount of water taken. The method was rational, since it was natural to expect a good result by the constant dilution of the toxic blood, and, being very simple, he considers it worthy of a wider trial. We can endorse his plea from a knowledge of cases treated in this country by the same rational method.

THE next International Congress of Hygiene and Demography was originally announced to take place in Washington, D.C., in September-October, 1910. In a letter dated Jan. 29th, 1910, the Secretary-General of the Congress, Dr. John S. Fulton, announces that it has been decided to postpone the holding of the Congress until 1911 or 1912.

THE Secretary of State for the Colonies has appointed Mr. W. D. Ellis of the Colonial Office to be a member of the Advisory Committee on medical and sanitary questions connected with the British Colonies and Protectorates in Tropical Africa.

THE plague returns from Mauritius are more reassuring. Only 8 cases with 3 deaths were reported during the week ending Feb. 24th.

Sir Victor Horsley, F.R.S., has been appointed a foreign associate of the French Academy of Medicine.

FROM Jan. 29th to Feb. 12th 35 cases of glanders in London were reported.

THE QUEEN'S UNIVERSITY OF BELFAST.—The following extern examiners for this year were appointed at a meeting of the Senate on Feb. 26th. They are all eligible for reappointment for three further academic sessions:—Experimental Physics: Professor J. A. McClelland. Chemistry: Professor H. Ryan. Zoology: Professor J. C. Ewart. Botany: Professor F. O. Bower. Anatomy: Professor A. F. Dixon. Physiology: Professor E. A. Schäfer. Pathology and Medical Jurisprudence: Professor G. Dean. Medicine: Dr. F. Taylor. Surgery: Mr. Jonathan Hutchinson. Midwifery: Dr. R. P. Ranken Lyle. Materia Medica: Sir Lauder Brunton. Ophthalmology: Mr. E. Treacher Collins. Hygiene: Professor H. R. Kenwood. The following were appointed local University clinical examiners:—Medicine: Dr. W. Calwell. Surgery: Dr. J. W. Browne. Midwifery: Dr. A. Dempsey. Ophthalmology: Dr. W. M. Killen. Dr. Jack has been appointed an intern examiner in physics, Dr. J. A. Milroy in biochemistry, Dr. A. W. Stewart in organic chemistry, Dr. C. E. Shaw in ophthalmology, Dr. W. J. Wilson in hygiene, and Dr. W. St. C. Symmers and Dr. T. Houston in medical jurisprudence.—The Belfast University has passed the following resolution:—

> That the Medical Faculty of the University be requested to advise the Senate as to the appointment of its representative on the General Medical Council.

This arrangement will give the Medical Faculty their due weight in a very important matter.

THE MEDICAL TREATMENT OF THE POOR:

An Address by Dr. J. C. McVail.

On Feb. 21st Dr. John C. McVail delivered an address on the Medical Treatment of the Poor before a convention of Sheffield societies, based on the experience gained in the course of an investigation into out-door and indoor Poor-law medical relief in various rural and urban localities in England and Wales made on behalf of the recent Royal Commission on the Poor-law. He considered first the deficiencies of the present system of relief, dwelling upon the various classes affected under the headings of A., Adults: (1) the Aged; (2) the Middle-aged or Adult Paupers. B. Children: (1) Medical Treatment of the Young; (2) the Children of the "Ins and Outs"; (3) Widows' Children. He dwelt especially upon the lack of simply trained nurses for patients receiving outdoor relief, and the desirability of the compulsory removal of certain paupers from unhealthy and neglected surroundings to proper institutions; the delay in seeking medical advice which so often marks the commencement of chronic disease amongst the adult poor; the disadvantages of institution life for children; and the anomalous nature of the present arrangements for the upbringing of pauper children. Our readers are aware from their own experience in practice, from the Reports of the Poor-law Commission and the valuable evidence taken thereat, and from our digests of these Reports and their appendices, how crying are the evils in question.

Dr. McVail then passed on to discuss the remedy for the existing evils in the following terms:—

Recommendations Applicable under Existing Authorities.

What, then, is the remedy for these very serious defects in the medical treatment alike of the pauper and of the poor man and his family who are not paupers? As bearing on Poor-law medical relief, strictly so-called, I made a series of recommendations to the Royal Commission which can be indicated here only in the briefest outline. If local authorities are to remain as at present, the central authority should be greatly strengthened and take a much more active part in local management. But otherwise, and preferably, the local authorities themselves should be altered and strengthened so that they would need not more but less interference from headquarters. For this and other reasons the existing areas of Poor-law administration, medical and general, should be much enlarged. The enlargement should be such as to give each local authority control over several institutions, so that the feeble attempts at separation of different classes of inmates in workhouses should be given up, and that there should be a separate institution for each class. Next, there should be increased medical inspection of all such institutions on behalf of the central authority. At the same time and even more important, systematic medical inspection of all persons in receipt of outdoor relief should be instituted by the central authority. The object of such inspection should be to see that prevention as well as cure was being fully kept in view. The reports of the inspectors should deal with the work of the medical officers and nurses, the sufficiency of the staff and of its remuneration. Medicines and medical appliances should be paid for quite apart from the salaries of the medical officers. Midwifery fees should be revised and a uniform sum fixed. Existing institutions should be the subject of special inspection and report by an architect and medical officer in regard to structural defects and their removal. The plans of new institutions should be more thoroughly examined by the central authority than appears to have been the case in past years. All pauper cases of phthisis should be notified to the medical officer of health, and the sanitary circumstances of the houses where pauper phthisis exists should be observed and dealt with. (I am glad to see that by order of the Local Goverment Board notification of phthisis by the Poor-low medical officers to the medical officer of health has now been instituted.) Boarding out of phthisis cases in country cottages should be encouraged. Colonies for epileptics should be established. Imbeciles should, so far as practicable, be boarded out in the country, and where institutional treatment is necessary the workhouse ought not to be the institution. Cases of curable insanity coming under the Poor-law, such as alcoholic or puerperal cases, should not immediately be sent to asylums, but should be treated for a period in hospital, so that if possible the stigma of insanity would not afterwards attach to the patients or to their families. If local authorities send persons requiring medical assistance to general and special hospitals they should make a proper contribution to the funds of these hospitals, with a view to the medical staff being remunerated for their work. Where such hospitals are not reasonably available, either in rural or urban districts, they should be provided if necessary. Rate-supported outdoor dispensaries should be properly equipped. Maternity wards in infirmaries should be open to married women in poor circumstances though not paupers. Compulsory removal to and detention in institutions should be possible in proper cases and under due restrictions. Many of the present "ins and outs" should be detained for lengthened periods, so that if feeble-minded they would be protected against their own infirmities, and if vicious or lazy would be compelled to work in labour colonies. Dependents of able-bodied persons should be received into institutions if their remaining at home would require that their able-bodied guardian would have to stay off work. The granting of medical orders and of medical extras should be better regulated. All nuisances and insanitary conditions observed by the officers of the Poor-law should be intimated to the officers of the health authority if the two authorities are not to be amalgamated. Where medical relief is afforded disobedience to instructions should be penalised in some way. Cripples and blind persons should be educated so as to aid them in self-maintenance. Children should not be maintained in workhouses, and institutional life in general should be avoided in their case. Scattered homes and boarding out should be encouraged. The children of widowed mothers should be under sufficient medical inspection, should be sufficiently fed and housed, and should be reared in the country so far as possible.

Such are, in very condensed synopsis, my recommendations so far as within the strict limits of the Poor-law, but entirely exclusive of the very important question of the constitution of the local authority, which would easily take a lecture to itself and cannot be touched on here. Any remedy, however, for the existing defects in the Poor-law medical system must, in order to be successful, take cognizance not merely of paupers, but of poor persons who have not reached the stage of pauperism, and whom it is desired to prevent from becoming unfit to maintain themselves owing to ill-health.

A Free Medical Service.

One remedy which has been thought of is an entirely free National Medical Service open to all, the medical men being paid out of public funds. At first sight this may seem a tempting prospect, and it need not be denied that the physical health of the country would be improved by everybody having a right to skilled medical assistance whenever he might choose to ask for it. But more than mere physical health has to be kept in view, and it seems to me that there are strong objections to any such scheme. The common analogy is with free education. It is urged that as the State pays for education because it is desirable that the community should be educated, so ought it to pay for health because it is desirable that the community should be healthy. But, as I pointed out in my report to the Royal Commission, education is only for the young, to prepare them to fight their own battle in life, while free medical attendance would apply from the cradle to the grave. Also, if medical attendance should be free, so likewise should the supply of medicines without which attendance may be of no use. But it is difficult to distinguish between medicines and food, such as milk, beef-tea, butcher meat, and so forth. Both quantity and quality are of moment here, and the State should be responsible. Similarly, warm clothing is of value in the prevention and cure of many ailments. Again, a roomy and well-ventilated and sufficiently furnished house does much both for prevention and cure. Likewise, every one should have a summer holiday in order to recuperate after the winter's work. In short, the vista opened up by any proposal for a free State Medical Service is nothing short of endless.

Such a service would, I think, be found to have a bad influence both on the medical profession and on the public. To place the former at the beck and call of everyone who might choose at any hour of the day or night to demand his help and to leave him open to the criticism of every crank holding peculiar views as to disease and its treatment, would make the doctor's life not worth living, and would go far to destroy his practical and scientific interest in his work. Medical attendance obtainable in this way would often be little valued by the recipient. Advice so given would be readily neglected. Manifestly, too, the State would be placed in a difficulty, as every faddist in the country would hold that his own bone doctor, or acetopath, or herbalist, or whatever kind of irregular or unqualified practitioner he might fancy, should be provided for him free of charge, and it would certainly be urged that no particular school of medical doctrine, however repugnant to common sense, should be excluded from the State service. Being of opinion myself that apart from charity, personal payment for personal service is good alike for the man who pays and the man who is paid, I have no hesitation in setting aside any scheme of a complete free medical service as having drawbacks which would very largely neutralise its benefits.

Medical Insurance.

How, then, can the man with a comparatively small income—the clerk, the artisan, the miner, the railway servant, the labourer—pay for medical attendance for himself and his dependents? For all the ills which afflict humanity there is no complete remedy, yet in principle the answer is apparent. The risk of requiring to call in a doctor, and to incur prolonged expenditure too heavy to be raised from ordinary income and too uncertain to be reliably provided against by personal savings, belongs to the great group of contingencies which in civilised life are met by means of a system of insurance. Now, insurable risks may for the present purpose be divided into two classes. Where fire or life or burglary, or loss of vessels at sea, or employer's liability is concerned, only the individual or the firm or company is for practical purposes regarded as being liable to financial injury by incurring loss, and he or it therefore is left to pay the whole premium required to cover the risk. But some States are beginning, or have begun, to act on the doctrine that there are certain other dangers in which the public are very directly concerned jointly with the individual. Workmen's insurance in Germany is, of course, the leading instance, and there are movements in the same direction in this country in respect of unemployment and invalidity. In such matters the cost of insurance, it is held, should be borne partly by the individual and partly by the public. Undeniably, the health of the population is a matter both of national and of personal consequence. and in my view the principle of subsidised insurance should be applied to the provision of medical advice and attendance for the wage-earning or poorer classes. The individual and the State should bear the joint outlay for the joint benefit.

That is the first point. The next is that, though at present the State does not contribute, excepting through the Poor-law, and then only when ill-health has resulted in destitution, yet two or three millions of the working-classes have themselves made some provision of the sort by means of the medical benefits to which they are entitled through the great friendly societies. They pay into these when they are well. so that they may be able without hesitation to send for the doctor when they are ill. These societies, however, are subject to serious defects. The so-called slate clubs which break up yearly are of course quite out of the question and may be put aside at once. But even the great friendly societies pay their doctors so poorly that there is constant dissatisfaction. Also, as a rule, they admit only men, or men and boys, seldom females of any age. Nor do they exist everywhere, and many who might be willing members are outside the sphere of their operations, especially in rural districts. They provide, of course, not merely medical attendance but also a money allowance during illness, and sometimes owing to insufficient contributions in proportion to the benefits given or to bad management they become bankrupt. A Parliamentary return, obtained in the year 1891, showed that 4593 paupers at that time had been members of friendly societies which, owing to lack of funds, had ceased payment. Another defect is that the societies provide no choice in the way of medical attendance. Each has its own doctor, and if a member loses faith in him there is constant dissatisfaction from the patient's point of view and also from the doctor's, for one grumbler will give as much trouble as a hundred contented members. Yet the system is right in principle and only the application of the principle is at fault.

Medical Provident Institutions.

My own view is that medical provident institutions should be established all over the country and that the State should contribute to their maintenance. The individual should make his own contribution in the interests of his own health. The State should make its contribution in the interests of national health, including the prevention of pauperism, and the united contributions should be such as to afford fair and reasonable payment for the medical services rendered. All medical men within the sphere of work of any such institution should have opportunity of being placed on the list of its doctors. The members should have the selection annually of their medical attendant from this list. Each institution should be managed by a committee representative partly of the members, partly of the doctors, and partly of the State. If the State made no contribution manifestly it would have no right to share in the control. The committee should have the power of removing from the list of doctors any man who might be found endeavouring to attract members by improper methods, such as by underselling—by offering to return to them a proportion of their contributions.

In devising any such scheme the interests of the great friendly societies would have to be respected. If in some places the institutions could be directly connected with societies such an arrangement might be made. Otherwise, the societies might delete medical attendance from their benefits, their members paying separately into the medical provident institutions for that purpose. It is well known that a friendly society is sometimes found to be actuarily unsound. In such a case legal provision might be made for its continuing to charge on the existing scale while ceasing to provide medical benefits, so that in this way the income might balance the diminished expenditure. This is the merest skeleton of a scheme, and as to its details, even as to essential details, a score of difficulties may be suggested, and a hundred questions may be asked. But I altogether object to criticism based on the well-known fact that sick clubs in the past have had many faults and many failures. There is no fair or reasonable analogy between such clubs and the suggested medical provident institutions. Indeed, to argue from the one to the other is simply to raise an entirely false issue. That medical officers on the institution list would endeavour to attract patients by pandering to a public taste for large quantities of medicine, and would so enter on a degrading competition in excessive drugging, is a suggestion which could easily be deprived of any validity by providing that patients should be charged the wholesale price of medicine supplied to them at the institution's dispensary. A competent committee would soon learn how to deal with any such abuses, and the assumed contribution by the State would involve its right to exercise reasonable supervision over the medical work done by the institution. Even the fact that medical provident institutions have not always been very successful does not in the least show that, established and managed on the suggested lines, the result would be other than satisfactory. The scheme has to be judged on its merits, not on the demerits of others.

A Voluntary System.

One question of the utmost importance is whether membership should be compulsory or voluntary. Any voluntary scheme would obviously be incomplete, but subject to a reservation which I shall mention later compulsion would result in much difficulty, and a new class of conscientious objectors, including faith-healers, "Christian Scientists," and all who put their trust in quackery, would come to the front. In the absence of compulsion, what would be the inducements to membership? They would be both direct and indirect. The former would include the State contribution, the choice of doctors, the good management which should be looked for from committees so constituted, and the good work which the institutions would quickly prove themselves capable of doing. A very important indirect inducement I would expect to find in a much increased stringency of inquiry by medical charities in general as to whether applicants for their aid were not in a position to attach themselves to provident institutions.

Indeed, the better government of such charities in this respect is practically essential to any such reform, whilst the establishment of medical provident institutions would at the same time make reform much easier. The out-patient departments of the great hospitals would obviously be in a much stronger position than at present to refuse assistance to persons obviously able to become members of provident institutions. But cases requiring very special treatment, such as Roentgen rays or Finsen light, would still probably have to attend at the out-department of great hospitals, though in course of development some provident institutions might themselves make such provision for their members. So also the provident institutions, State-aided, might ultimately, if necessary, provide hospitals for their members, or might, in cases in which institutional treatment was required, facilitate their reception into existing hospitals.

No doubt many labourers would find it a heavy burden to provide the members' shares on behalf of himself and his wife and family, but charity could quite well step in here, as it does in the coal and boot and clothing clubs of many an English village. Entire or partial payment of such contributions would be an admirable purpose to which to devote some part of the funds collected by charity organisation societies. At the other end the question of a wage-limit would have to be considered, but the limit would depend on the amount of contribution per member. Control would have to be exercised over the admission of persons already suffering from illness, but the control would have to be reasonable. The admissions would usually be of families, not of individuals. It would be out of the question to let the head of a household select for admission such of its members as would most likely require medical attendance. On the other hand, a weakly or ailing member could not be excluded if the rest were accepted, and a household could not be shut out on account of a single member. Such difficulties could, no doubt, be settled on a financial basis. Single individuals without dependents would, of course, be admitted singly. An entry fee would be advisable and the annual charge would depend to some extent on the age at entry. Each institution would, as a rule, have its own drug dispensary.

Medical Treatment of Paupers.

As regards paupers (I use the word for convenience), whatever might be the nature of the new local authority I do not see why their medical treatment should not be obtained through such provident institutions. The local authority would contribute to the institutions in respect of all for whom it might wish to provide medical attendance in that way. And if the pauper were already ill then, instead of entering as an ordinary healthy member, the amount of the contribution on his behalf would have to be increased. Concerning the choice of a doctor in cases introduced either by public or private charity, or by the local authority, I am clearly of opinion that it should lie with the contributor and not with the patient, the principle being that he who pays the piper has a right to call the tune. Also, if any such scheme were organised, the existing Poor-law medical officers, who, being in general practice, would no doubt along with other members of the profession be on the medical provident list, should be selected for attendance on pauper cases. But at the death or resignation of such a medical officer it might perhaps be unnecessary for the local authority to appoint another in his place. They could select from the institution's list as they might from time to time think fit, or else they would make a definite appointment. But any such relationship of local authorities to medical provident institutions is not an essential part of the scheme. If good reason could be shown for an authority paying a medical officer of its own, it might continue to do so, and the provident institution would exist independently. So far as I can see, however, the suggested connexion would be the better arrangement. The work of attending paupers would be much better paid than at present, and at the same time there would be economy in general management.

It might indeed be argued that this linking of rate-supported relief to provident institutions would repel paying members owing to the traditional stigma attaching to the Poor-law. If that fear were well-founded, then it would be better that there should be no such association. But whatever be the policy followed in providing a substitute for the existing Poor-law, it will certainly include two general objects, first, the controlling of the vicious and the idler or loafer class by means of detention or labour colonies, so that these persons could not be foisted on provident institutions; and second, the avoidance of any procedure which would deter or degrade the really deserving and unfortunate. I do not myself think that the latter ought to be objected to as members of a medical provident institution.

Attraction and Deterrency.

The very puzzling question of how to make Poor-law medical relief at the same time attractive to the deserving and deterrent to the undeserving has been much debated. A national system of medical provident institutions would greatly favour a solution of the difficulties. Members would not require any medical attendance other than that furnished by the institutions, and the greater the membership the smaller would be the residue. The dimensions of the problem would thus be minimised. The residue could by inquiry be broadly divided into two classes, according as their poverty would be found due to misfortune on the one hand or misconduct on the other. The former could be treated through the institutions, the latter perhaps by special officers directly employed by the local authority, if that were thought deterrent. But the medical treatment would have to be as effective in the one class as in the other.

Charge and Recovery.

It may be well to point out that the provision of medical attendance to paupers by means of such institutions would not interfere with the local authority's right of recovery of the cost of such relief from the recipient in so far as he might be found, or might become, able to pay. The powers of charge and recovery would be unaffected. But occasion for exercising such power of charge and recovery would be much less frequent if provident institutions were established and encouraged than if they were wanting. Surely it is better to aid the poorer classes to make provision against sickness whilst yet they are well than to invite them to a life of thriftlessness by announcing that all their needs will be equally well met by the State, whether they have saved or squandered their own earnings, and by adding that those who have saved will be mulcted of their savings, whilst those who have squandered will go scot free. Nor does it need to be pointed out that the amount likely to be recovered from persons who come for relief because they are in ill-health must be comparatively small. Some would become quite well again, and whatever they might earn could be taken from them if they were not lost sight of. Others would be partially restored to health, and might maintain themselves without ability to repay anything. Others, again, would be found permanently incapacitated and would be a chronic burden on the rates. How vastly better it would be, instead of trusting to such chances as these, if by means of provident institutions the cost of medical attendance had been systematically paid for beforehand.

The General Practitioner.

As concerns the very important interests of the medical profession I am satisfied that they would be greatly advanced by a properly constituted national system of provident institutions. The preservation of the general practitioner from absorption in a system of whole-time officers has been a subject of discussion in the professional journals. His position would be properly conserved by his connexion with such institutions. He would be paid, not by salary, but exactly according to the number of his provident patients. Also, an immense amount of work which at present is done gratuitously by medical charities owing to laxity of management would in future be paid for. And so far as the institutions were concerned he would be saved all the worry and annoyance of issuing accounts and endeavouring to recover bad debts.

Invalidity Insurance.

I now return to the reservation referred to in arguing that membership of medical provident institutions would in all likelihood have to be voluntary. If membership is to be by direct individual payment it must, I think, be voluntary. But if, as now appears very likely to happen, a national system of invalidity insurance is established with contributions by the State, by employers of labour, and by employees, and if, further, this insurance is to cover not merely a money allowance during sickness but also medical attendance, then it would be quite feasible to pay for the latter into the medical provident institutions out of the invalidity insurance funds. This, though it would apply only to workmen and not to their wives and families, would, needless to say, make an invaluable beginning to the whole scheme, and would give an immense impetus to its extension to women and children.

Periodical Medical Inspection.

I have left to the last a point which is not essential, but to which I personally attach importance. In any such scheme every doctor on the institution list should make a periodical, though not necessarily a frequent, inspection of all the members under his charge. The purpose would be to prevent the onset of disease or to check it at its very commencement. I have already pointed out that pauperism frequently results from unrecognised disease, the beginnings of illness being neglected and medical advice not sought until after disease has secured firm footing in the system. Parents (including pauper widows with families entered in the institution by the local authority if that part of the scheme were accepted) would be guided as regards the health and dietary of their children, and suitability of occupations for their boys and girls. Fathers would be advised as to their employment so as to prevent heart strain or the like, and in advancing years an outlook would be kept to minimise the troubles which affect old age. This is no impracticable nor unparalleled suggestion. Every owner of a factory has his steam boiler tested periodically. Many a householder thinks it his duty to have his house drains examined at intervals. Most people who can afford it send their children regularly to the dentist so as to preserve their teeth in good order. There is no reason why the whole bodily system, including the principal vital organs, should not also receive a little attention. Any fear that a brief medical examination once a year or once in two years would result in hypochondriasis seems to me quite baseless. Already a somewhat similar system is being followed in elementary schools, without any such danger being heard of. In passing, it may be noted that overlapping would, of course, have to be avoided in such work of periodical inspection. School children would not need to be examined both by the officer of the provident institution and by the school medical inspector, but that could be easily arranged.

As just stated, periodical medical inspection is not essential, yet it seems to me a distinctly useful part of any complete system of medical provident institutions, and in particular it would help to recompense the State for its contributions to the funds. But even without it these institutions ought to be of great value. Supposing that their membership were at first mainly made up of artisans rather than labourers, there is no reason, but the opposite, why the nation should not do its best to protect the health of its skilled workmen, consistent with the maintenance of personal independence and responsibility. The suggestion of any such national system may be scouted as utopian. The same would have been said ten or a dozen years ago about the medical inspection of school children which is now in actual operation all over England and Wales, and is already regarded as a mere matter of course.

Conclusion.

Concerning the incompleteness of a voluntary scheme, its value is not to be measured apart from other needed reforms. The proper feeding and rearing of pauper children, the control of boy labour, the decasualisation of labour, labour bureaux, unemployment insurance, detention colonies for the vicious and the lazy and for weak-willed ne'er-do-wells, the safeguarding of imbecile or feeble-minded young women by similar detention, the enforcement of every practical check on alcoholic indulgence—all these and other agencies have to be thought of as part of any sufficient plan of reform. Improvement in the general condition of life and labour resulting from such measures would quickly add to the numbers who would be in a position to become paying members of provident institutions. So long as human nature remains what it is no panacea for all its defects can be found, but the simultaneous operation of agencies regarding whose value there is practically unanimous agreement will do much in the desired direction. One of these agencies will be better preventive and curative medical treatment of the poor, and in whatever way that be achieved consistently with the maintenance of personal responsibility I am sure that it will play an important part in the advancement of the national welfare.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Seasonable Precautions.

AS long as the early morning whiteness of the streets remains to show that the frosty season of the year is here it is opportune to recall to the minds of motorists the dangess of this inclement period. Should a frost occur and the car be housed in a cold garage the cooling water, if it has not previously been emptied out, may freeze in the jacket, radiator, or pipes, and as the water expands one or all of these portions of the car's anatomy may crack or burst. A common precaution is to empty out all the water every night, but then, though the taps be opened, some of the water may not drain off, such as that in the pump, with the consequence that even if a pipe has not burst part of the pump may be frozen and break when the engine is started up. In addition to the bother of having to fill up with water if an urgent call comes, there is, too, the possibility of an air lock, which may take some time to get rid of before the water circulation can be established. To avoid this some antifreezing compound may be introduced into the water. An efficient method is to add calcium chloride, about 40 ounces to each gallon of water, which gives a solution that will not freeze above 26° F.; 48 ounces to the gallon will be fluid even though the temperature falls to 0° F. The objection to this addition is that the impure salt may cause corrosion of the pipes or water tank, so many consider glycerine a better specific. The adding of 70 fluid ounces of glycerine to each gallon of water will give a solution with a freezing point of 11° F. Most are content with crude brown glycerine and only add 25 per cent., which results in a fluid of 1·066 density, the freezing degree of which is 20° F. 25 per cent. means 53 ounces to the gallon.

The only other alternative is to instal some method of heating the garage. If the electric current is available, an electric radiator answers, especially if it be placed beneath or on top of the water tank. The British Everready Electrical Co., Limited, of Theobalds-road, London, W.C., have brought out a useful little heater, which is inclosed in a metal case, and fits inside the bonnet of the car. It can be supplied for either alternating or continuous current and for any voltage. The Norton stove mentioned in the account of the Olympia Show[1] is also handy. Messrs. Boulton and Paul, Limited, of Norwich, also manufacture an effective heating apparatus.

Lubrication difficulties with modern cars should not occur, as the oil is now in a sump, in the crank case, and so, even if frozen, is quickly rendered liquid when the engine starts and heats the lubricant. With the "drip" method the oil will probably need thinning with a little paraffin so that it may flow readily, or a lighter grade oil can be employed. When filling up with a fresh lubricant it is a good plan thoroughly to clean out with paraffin the oil tank and various oil pipes. Carburettor functional torts are apt to occur as the petrol in the float chamber becomes stale, and in cold weather stale petrol vaporises badly. A good tip is to run off the stale petrol from the float chamber when starting in the morning, and to warm the fresh petrol by pouring some hot water over the float chamber; by this means, even on a freezing day, an engine can be rapidly started. Should there be frozen snow on the ground, one of the detachable anti-skidding devices, such as the studded gaiters sold by most tyre makers, will enable the tyre to grip, even on the most slippery road.

Recently I was trying a car, and though it was snowing when I left home, and I had merely plain tyres, I forgot to take a studded gaiter with me, and I found some difficulty in ascending River Hill. Luckily a rope was at hand; this was twisted round a spoke and then round the tyre, and in this manner each back tyre was converted into a sort of grooved non-skid, and thus equipped the car mounted without a question.

In the *Autocar* of Nov. 27th last I noticed an excellent wrinkle, which is credited to a member of the medical profession, and as I personally know what it is like to hold the steering wheel with the thermometer below zero I recommend what they term the warmest covering for the hands to such motorists as drive themselves—namely, lined woollen gloves next to the skin, overlaid by a pair of fingerless tramwayman's mitts with leather palms.

---

[1] THE LANCET, Nov. 20th, 1909, p. 1534.

Metallurgique Cars.

The Metallurgique cars are already well known in this country, and the makers turn out a 12 h.p. model, which they term in their catalogue the "Doctor's Car." The one shown at the recent Olympia Show was fitted with a very smart Victoria body, with a built-up dash, high side doors, a folding screen and a black leather hood, and in the boot at the back there was a dicky seat, which, when folded up, is constructed to disappear. Of course, coach work is not by any means everything, but as in this case it was certainly pleasing I was glad to test if its behaviour on the road could also be described in the same manner. Previously to starting I made a rapid inspection of the leading features, and a review of these may be of interest to such readers as contemplate the purchase of a car.

The four cylinders have a bore of 75 mm. and a stroke of 110 mm., and they are placed "de-saxe" to the centre line of the shaft, which is said to enhance the power of the motor. The crank shaft is of nickel steel and runs in bearings of ample dimensions. The arms of the flywheel perform a double operation; besides carrying a wheel of large size they act as a fan, drawing a current of air through the radiator past the motor. The valves are all mechanically operated and the tappets are adjustable. Cooling is by thermo-syphon with a new type V-shaped radiator, and a good point is the ample size of the water pipes. The clutch is on the principle of the internal expanding brake; two phosphor-bronze shoes are expanded against the inner side of a drum in the boss of the flywheel, and all thrust is taken up by ball-bearings. In fact, on this car, wherever it was possible, except for the crank, ball-bearings have been fitted. A good feature is that the clutch can be fairly easily removed, which is not the case on all cars; still this type, I understand, rarely needs adjustment. The gearbox is very compact and light, and the three forward and the reverse gears are worked by a gate change. The top speed is a direct drive. The lubrication is very simple; in the crank base there is a sump which contains the oil filled in to the crank base through a large filter cap; the top of the sump is provided with a filter bed, and as the oil drains back it is strained as it enters the sump. A pump, driven off the timing wheels, delivers oil to the centre and end bearings, and the crank shaft is drilled and thus the oil is forced under pressure to the big end bearings, and then along leads in the connecting rods to the gudgeon-pin bearings. A pressure gauge on the dash indicates if the oil pump is working. Ignition is by a fixed firing high-tension magneto. The brakes, both foot and side, are of the internal expanding type, quite positive, and on the drive I had I found them very smooth and soft on application. The springs which are employed are very long and flexible. The steering column is comfortably inclined, and as a result of ball-bearings on the steering swivels the manipulation of the steering wheel is very easy. As already mentioned, the ignition is fixed, and the speed and power of the engine are regulated by an accelerator pedal. A Zenith carburettor is fitted, which is simple and most efficient. With a two-seated body as much as 30 miles can be obtained with a gallon of petrol.

I took the car for a 40-mile run, and found that it could take average steep hills easily on the second speed; also that it could be easily restarted on that gear when the wheels had actually been brought to rest as a result of traffic. On the first speed it mounted a hill of 1 in 5½ without a murmur, and from my experience I believe that the Brooklands test hill would be an easy matter for this car. The clutch was smooth and the change speeds very easy to manipulate, and I should say that a great deal of traffic work could be accomplished without changing down. My impression was that it was a thoroughly modern, lively, but almost silent, engine, which responds readily to the driver, and that it is in every way an interesting car to drive. The brakes are powerful, and either I found capable of holding the car in both directions on a steep hill. Messrs. Warwick Wright, Limited, also have on the market an 18 and a 26 h.p. model.

The Darracq 14–16 h.p. Car.

Messrs. A. Darracq and Co., Limited, of Walnut Tree-walk, Kennington, and 12, Regent-street, London, S.W., have issued a special descriptive catalogue of this model, which was described in The Lancet of Oct. 30th, 1909, p. 1303. The car has now been on the road some five months and has, I understand, given great satisfaction. Messrs. Darracq fit ball bearings to the through shaft in the gearbox, and as occasionally on very steep hills, if the petrol tank was nearly empty, the carburettor was rather high for gravity feed, they have altered that part so that now the petrol enters from below the carburettor instead of on top, as was the case in their earlier type; so now, no matter if the tank is low in petrol, there is always enough head to keep the carburettor well supplied. The car can now be had either with an 85 mm. by 100 mm. or an 80 mm. by 120 mm. engine. I have tried both, and I believe that the one with the longer stroke is slightly more powerful, but either gives ample power both for speed on the flat and hill climbing.

THE RECENT MALARIA CONFERENCE IN SIMLA.

The Secretary to the Government for India has issued to the Secretaries to the Provincial Governments the report of the Proceedings of the Imperial Malaria Conference held at Simla in October, 1909. In an official letter covering this document the Government supports the opinion of the Conference that the epidemiology and endemiology of malaria in India must be investigated in detail, and approves of the organisation for that end outlined in a paper read to the Conference by Colonel J. T. W. Leslie, I.M.S., Sanitary Commissioner with the Government.[1] The circular asks that provincial organisations may be formed to work in coöperation with the central scientific committee proposed by Colonel Leslie, and to send delegates to an annual meeting of a general committee presided over by the Sanitary Commissioner with the Government. Attention is called to the importance of the statistical inquiries recommended by the conference, and the provincial governments are requested to institute these inquiries systematically in their respective provinces. They concern both the people amongst whom malaria is epidemic or endemic and the mosquitoes that infest the different localities. The importance of arriving at the true cause of the presence of malaria in any district before money is spent in attacking a supposititious cause is pointed out, and it is asked that careful notes of all investigations shall be forwarded to the central committee. The Government of India further proposes that a class consisting of one medical officer with one medical subordinate from each province should assemble next spring at Amritsar, or elsewhere in the Punjab, for instruction in field work by Captain S. R. Christophers, I.M.S., who, it is rightly pointed out, "has a very special knowledge and experience" in this branch. The letter finally brings forward the following scheme of work to be done by the Central Scientific Committee:—

A. Routine work at the Central Research Institute.—One of the first subjects for investigation will be the distribution in India of the different species of anopheles. A type collection will be formed at the Central Research Institute and arrangements will be made for the identification of specimens sent by collectors. Instructions regarding the method of making collections will be issued to those requiring them. Biological facts regarding the different species of anopheles will be collated from the reports of provincial workers and others. The comparative prevalence of the different varieties of malarial parasite will be ascertained and a critical examination of blood specimens will be carried out systematically with a view to discovering new species, should such exist. When sufficient information regarding any subject of inquiry is accumulated a bulletin for general information will be issued—e.g., as soon as possible a list of the known species of Indian anopheles will be issued showing the species which are known to carry malaria, those which are suspected of carrying it, and those regarding which any particular information is required.

B. Work in the field and laboratory.—The investigation will be commenced of such questions as the following:—(1) The reason for exemption from malaria of certain tracts in which conditions are apparently favourable to it. (2) The conditions leading to the presence of intense malaria in certain areas. (3) The conditions determining epidemic prevalence. (4) The transmission of malaria: (*a*) The study of the bionomics of anopheles—e.g., their power of flight, the duration of their lives, &c.; (*b*) the effect of multiple inoculations of parasites by the study of culex and proteosoma, &c.; (*c*) the production of gametes in different conditions—(i.) the relation of production to single "attacks," to "relapses," and to the state of "constant infestation" occurring in children in endemic areas; (ii.) the effects of scarcity, temperature, and other conditions. (5) The cause of the resistance to the action of quinine of certain cases of malaria and the action of the drug on the parasite in—(*a*) simple cases and relapses, (*b*) multiple infections and infestations, (*c*) cases of long-continued malarial infection and enlarged spleen, possibly associated with secondarily induced conditions. (6) The causes of hæmolysis *in vivo*, the production of antibodies and the intimate pathology of malaria. (Such inquiries have a special bearing upon treatment and upon the origin of cases of blackwater fever.) (7) Conditions unfavourable to the life of the larvæ of anopheles, including a study of the action of different kinds of fish. (8) A study of the epidemiology of kala-azar and of other conditions of splenomegaly not apparently associated with the parasites of either malaria or kala-azar. (9) The action of quinine. The effect of the quinine treatment of man in preventing the infection of mosquitoes. The effect of large doses of quinine on the production of gametes, &c.

---

[1] This address was published in full in The Lancet, Nov. 20th, 1909, p. 1483.

CAPE OF GOOD HOPE: REPORT ON THE PUBLIC HEALTH OF THE COLONY IN 1908.

WE have received from Dr. A. John Gregory of Cape Town his recently issued report as medical officer of health for the Cape of Good Hope, presenting certain vital statistics for the years 1907 and 1908, together with the reports of the district surgeons on the state of the public health and the sanitary conditions of their respective districts during the year last mentioned.

Constitution of Department of Public Health.

In the year 1907 the office of the medical officer of health of the colony was constituted a separate "department of public health" under the control of the medical officer of health as administrator of all matters relating to public health and sanitation. In the course of the year following the sub-department of the Cape Registrar-General was abolished, and the registration of births, deaths, and marriages, together with the preparation of statistics relating thereto, was transferred to the new public health department. To this department was likewise transferred the greater part of the local administrative work, including the oversight of public affairs of a purely medical character, the only matters relating to "public assistance" that were still retained in the office of the Colonial Secretary being those concerning State-aided hospitals, asylums, and institutions for the care of sick paupers.

In a prefatory letter Dr. Gregory disclaims all attempt to analyse in the usual manner the vital statistics of the colony, for the sufficient reason that no trustworthy information is available respecting the population with which the births, deaths, and marriages may be compared. Although, for this reason, it is as yet impossible to make reliable deductions from the returns of birth, death, &c., Dr. Gregory has thought well to publish, as an appendix to his report, a tabular statement of the number of births and deaths registered in 1907 and 1908, so that calculations of ratios therefrom may be promptly made as soon as the results of the census, probably to be taken in 1911, are available. It will readily be understood that the organisation of the work of a newly constituted department has led to some delay in the publication of the director's report; but this is more than compensated for by the fact that, in consequence of the transfers already indicated, the report contains, for the first time, particulars of the births, deaths, &c., for the actual year to which it relates, instead of for the preceding year, as heretofore. As, however, the next annual report will be the last before the Act for the Union of South Africa comes into operation, the medical officer reserves for that occasion a comprehensive review of the work of his department, including, of course, complete statistics of marriage, as well as of natality and mortality, for the colony and its several subdivisions. From the reports recently presented to the Cape Government it is clear that the transfer of administrative work to the Health Department has resulted satisfactorily in all respects, and has received the approval of the central as well as the local authorities throughout the colony. Under the Public Health Acts the duty of dealing with sanitary matters devolves on the local authorities, with a minimum of central interference. Inasmuch as most of the operations of the local authorities have more or less bearing on public health, it follows that the Health Department necessarily comes in contact with those authorities everywhere, so that the recent transfer has resulted merely in extension of the original functions of that department. The arrangement, however, has certain special advantages. In the first place, it coördinates under one head the work of local government, so that the local authorities now deal with the centre through a single recognised channel. Secondly, it conduces to efficiency, because, in dealing on the spot with insanitary conditions, the department becomes familiar with local peculiarities and local needs, and consequently is able to manage satisfactorily as well as economically matters requiring exceptional treatment. And lastly, by regulating the work of local authorities on uniform principles, conflicting decisions are avoided, and better as well as more expeditious results are attained. In discussing the various aspects of public health administration in the several districts of the Colony Dr. Gregory writes appreciatively of the conduct of the local magistrates and also of the district surgeons, upon whom devolves much responsibility in relation to matters of public health. Especial mention is made of the zeal, tact, and discretion wherewith the important duties of the district surgeons are discharged, in spite of the fact that the conscientious fulfilment of those duties often conflicts with their private interests as medical practitioners.

General Improvement in Sanitary Administration.

Commenting on the state of the general health of Cape Colony in 1908 the medical officer of health draws attention to the carefully prepared reports of the district surgeons, on the health of their respective districts, which appear as appendices to his report. These local reports are scrutinised in the central office, and all matters referred to as requiring improvement are promptly referred to the proper quarter for attention. Dr. Gregory reports that the local authorities throughout the colony are gradually attaining a better standard of health administration, which cannot fail to be reflected in a diminished incidence of sickness and of mortality. "Nevertheless," he observes, "most of them have yet a long way to travel before they reach anything approaching a thoroughly satisfactory position. It must, however, be admitted that local authorities in South Africa, while they escape many of the problems which trouble local authorities elsewhere, are assailed with difficulties which more than counterbalance those from which they escape—chief among which is the possession of a native and coloured population with its ignorance and its insanitary and uncivilised habits."

Prevalence of Infectious Disease.

Cape Colony has followed closely in the wake of the mother country with respect to legislation for the protection of the people against preventable disease. In the year 1907 an Act was passed requiring the notification by medical practitioners of specified kinds of infectious disease, notwithstanding which it is not surprising to hear that hitherto the returns of such cases have been very incomplete, by no means conveying an accurate idea of the extent to which the community suffer from these maladies. In the absence of information respecting the numbers of the population it is, of course, futile to discuss the relative prevalence of diseases in Cape Colony. Nevertheless, the report contains particulars of the reported attacks by the several notifiable diseases. Small-pox appears to be very prevalent, especially among the coloured races. Scarlet fever is noted as spreading irregularly from year to year, much in the same way as it does in this country. It appears that the most rudimentary precautions against the spread of infection are generally ignored. As a flagrant instance of this a case is cited in which some 30 persons were found attending a religious service in a small stuffy room in which was the corpse of a child dead of scarlet fever. Enteric fever also is much in evidence, and the report contains an interesting account of investigations by the Health Department as to the origin of several outbreaks of the disease in the year 1908. The disease appears to be commonly water-borne, and Dr. Gregory gives accounts of several epidemics traced to sewage-polluted water or to unboiled milk adulterated with water from specifically contaminated sources. Pulmonary tuberculosis is recorded as of frequent occurrence among the native inhabitants of the Cape, but for the reasons already given it is impossible as yet to compare its relative prevalence in that colony with our experience of it at home.

THE POOR-LAW MEDICAL OFFICERS' ASSOCIATION AND REFORM OF THE POOR-LAW.

THE Poor-law Medical Officers' Association is trying to obtain from its members information upon which a scheme of Poor-law medical reform may be constructed in accordance with the ideas of the existing Poor-law medical service. Members of the Poor-law medical service have received from the honorary secretary of the Association the following schedule of questions, with an urgent appeal that they may be answered at once, and thus enable the Association to estimate with some accuracy the real opinion of the whole service. In every case a stamped envelope has been enclosed for an answer, so that the minimum of trouble has been given to those whom it is desired to help.

Questions Submitted to the Poor-law Medical Service of England and Wales.

1. Are you in favour of the abolition of boards of guardians throughout England and Wales?
2. What authority would you propose to administer public medical assistance in the interests of the public and the medical profession? (*a*) A specially elected "ad hoc" authority? (*b*) A Statutory Committee of the County Council, as suggested in the Majority Report of the Royal Commission? (*c*) Abolition of any special Poor-law authority as recommended in the Minority Report?
3. Should any difference be made between medical, and other public relief, beyond non-disfranchisement in the case of the former?
4. Should there be any "test" or "deterrent" such as the present medical order to regulate the granting of medical relief to poor applicants? Or should the latter be permitted to claim public assistance subject to no other liability than having to pay the cost of the same if proved to be in a position to?
5. Are you in favour of a public assistance medical scheme based on provident dispensaries subsidised by the State and contract practice generally?
6. Are you in favour of a public medical service, based on an amalgamation of the present Poor-law Medical Service, with the Sanitary Medical Service?
7. Do you approve of the district medical officer being made relieving officer so far as medical relief is concerned?
8. Are you in favour of "whole time" or "part time" appointments in any reformed public assistance medical service?
9. Are you in favour of a reform of the present Poor-law system? Or would you prefer a "break up" of the present system?
10. Do you think the needs of the State sick poor would be better attended to by a distinct and separate medical service? Or by a sanitary service in which Poor-law medical officers were blended with medical officers of health?
11. Do you think that a "Unified Medical Service," that attended to all "poor" applicants with no other test, or deterrent than the liability to be compelled later to pay the cost of the same, would, or would not, be dangerous to the interests of all general practitioners in poor districts?
12. Enumerate the reforms that in your opinion are required in the Poor-law Medical Service as at present existing.

A covering letter, signed by Mr. D. B. Balding and Dr. Major Greenwood, respectively chairman of council and honorary secretary of the Poor-law Medical Officers' Association, points out that in the present critical condition of the Poor-law system of the country a strong organisation of existing Poor-law medical officers should be promoted. "So that the interests of the present officers may be safeguarded, whatever reforms may be introduced, and that our service may have its proper influence in guiding public opinion in the direction these reforms should take: to the end that the wants of the sick State poor shall be efficiently attended to without injury to the interests of medical practitioners generally, or unduly pauperising the lower classes of the nation." They proceed to point out that although in the present unsettled political situation there does not seem much likelihood of immediate legislation, there can be little doubt that one of the first efforts of a settled government will be to reform the Poor-law, while they find that both Reports of the Royal Commission on the Poor-laws do the present Poor-law medical service scant justice.

We hope that a large proportion of those concerned will answer the questions, as it is most desirable that an attempt should be made to formulate in the name of the existing Poor-law medical service some scheme of medical reform. The views of the service ought to carry great weight, as having hitherto had entire medical charge of the State poor of the country, while according to the Reports of the Royal Commission the members of the service have not been found wanting in zeal or ability. The questions cannot all be answered either easily or briefly, and in several of them the Poor-law medical officers will have to decide whether their views are held from motives of public policy or from private interest. But any large consensus of opinion from them should have considerable weight.

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

THE magnificent endowment of medical research made by Mr. Otto Beit in memory of the late Mr. Alfred Beit is fresh in our readers' memory. No time has been lost in making the awards of the first batch of Fellowships, which will date from March 1st, 1910. There were 70 applicants and 10 Fellowships have been awarded, each being of the annual value of £250 and tenable for three years, which the Fellows undertake to spend in prescribed medical research work in some institution authorised by the trustees. It will be seen from the list of the new Fellows that most of their work is to be carried out in places connected with the University of London. The list in alphabetical order is as follows: Mr. George Harold Drew, B.A. Cantab., Scholar of Christ's College, Cambridge, Schreiner University Scholar, Cambridge, and University Scholar, St. Mary's Hospital. Mr. Drew is official research worker at the Plymouth Laboratory of the Marine Biological Association of the United Kingdom, and will carry out his authorised research at that laboratory and at zoological stations at Naples and at Roscoff, France. He will investigate the zoological distribution of cancer and study experimentally the mode of origin of neoplasms. Mr. Frederick William Edridge-Green, M.D., B.S. Durh., F.R.C.S. Eng., whose investigations into the subject of colour-vision and theories of vision have been described in our columns, and who was formerly adviser to the Board of Trade on eyesight and colour-blindness, and a member of the International Code of Signals Committee, will undertake a research into various problems connected with vision and colour vision at the Physiological Institute, University College. Mr. Edward Hindle, B.Sc. Lond., late demonstrator and research assistant at the Liverpool School of Tropical Medicine and instructor in parasitology in the University of California, has been appointed to investigate the morphology and treatment of protozoal blood parasites, especially spirochæta Duttoni and trypanosomiasis, at the London School of Tropical Medicine and in Uganda. Mr. Thomas Lewis, M.D. Lond., D.Sc. Wales, M.R.C.P. Lond., Fellow of University College, London, and assistant physician to the Seamen's Hospital, Greenwich, will continue important investigations on the mechanism of irregularities of the heart at University College Hospital Medical School. Mr. Gordon Clunes McKay Mathison, M.D. Melb., will enter upon a research at the Institute of Physiology at University College, London, in which he is assistant, upon (*a*) the nervous control of respiration; (*b*) the effect on respiration of changes in the chemical composition of the blood; (*c*) the mechanism of biliary secretion and its general effect in digestive processes. Mr. Otto May, M.B., B.C. Cantab., M.R.C.P. Lond., Scholar of St. John's College, Cambridge, and Research Scholar of the British Medical Association, late demonstrator of anatomy and of physiology at Cambridge and now physician to out-patients at the Evelina Hospital, will undertake a clinical and experimental research upon the lesions of peripheral nerves at University College. Mr. Edward Mellanby, M.A., M.B., B.S. Cantab., scholar and research student of Emmanuel College, Cambridge, at present demonstrator of physiology at St. Thomas's Hospital, will work at that school on the relation of the excretion of creatinin to morbid conditions of the liver. Mr. Frederick Parlett Fisher Ransom, M.D., C.M. Edin., late assistant to Professor von Behring and to Professor Hans Meyer in Halle and Marburg, will investigate the mode of action of caffeine, theobromine, and allied substances on the muscular and nervous systems at the Pharmacological Laboratory, Cambridge, and at King's College, London. Mr. Sidney Russ, D.Sc. Lond., Clothworkers' scholar of University College, London, and demonstrator of physics at the University of Manchester, will investigate the association of radio-activity with cancer from the physicist's side in connexion with Dr. W. S. Lazarus-Barlow's elaborate work on that subject, which he described last year in his Croonian lectures. Miss Ida Smedley, D.Sc. Lond., Bathurst student, Newnham College, Cambridge, and research student in chemistry of the Royal Institution, at present assistant lecturer in chemistry at Victoria University, Manchester, will conduct a research at the Lister Institute on the formation of fat in the organism. To this lady and to these gentlemen we offer our congratulations on the honour of being the first to participate in the most notable benefaction that has been bestowed upon medical research in this country. We shall await with interest the fruits of their several investigations.

LONDON COUNTY COUNCIL MEDICAL AFFAIRS.

Medical Treatment in Hampstead: An Experiment in School Clinics.

THE period for which the London County Council accepted the offer of the Hampstead Council of Social Welfare to provide medical treatment for school children in Hampstead having expired, the day schools subcommittee reported to the Education Committee on Feb. 23rd as to the permanent provision to be made for the children. The subcommittee passed no verdict on the experiment which had come to a conclusion, but stated that the medical practitioners of Hampstead had formed themselves into an association under the title of the Hampstead Public Medical Service, and were prepared to provide treatment for 400 children (the number likely to need it) suffering from affections of the eye, ear, nose, and throat, and from ringworm, at a cost of £155 per annum. The conditions agreed upon were that the medical men should provide and fit up a special department to be approved by the Council. Treatment would be arranged as follows: 10 eye cases once a fortnight, 6 ear, nose, and throat cases once a fortnight, 2 ringworm cases fortnightly—one clinical assistant being appointed in each department. Payment would be at the rate of £50 per annum per assistant, for each half day's service a week, together with a payment of 2*s.* per patient in respect of eye, ear, nose, and throat cases, and of 7*s.* in respect of ringworm cases. The subcommittee advised that this offer be accepted, and this was agreed to after some discussion.

Mr. SANDERS objected to two of the clauses in the suggested agreement: (*a*) "The hours of attendance must be made to suit the convenience of the Hampstead Public Medical Service"; and (*b*) "No grant shall entitle the London County Council to representation on the committee or to interference in any way with the work of the departments concerned." Mr. Sanders urged that the Council must not treat a body of professional men organised for business purposes in the same way that it would treat a public institution like a hospital. It was possible to make out a case for not demanding control of work done by the hospitals, but the fact that the Hampstead medical men described themselves as a "Public Medical Service" did not make them one. If a body of teachers organised themselves in a similar way for the purpose of carrying on teaching the Council would not make grants, at any rate, without strict supervision.

Dr. BEATON said that on general lines this proposal marked a distinct advance in the right direction, for it was virtually setting up a school clinic. If it was to be of value to the Council, however, there must be a measure of control.

After some discussion it was agreed to substitute for Clause (*a*) the words, "The hours of attendance must be arranged to suit the convenience of both parties," and the committee then considered the question of supervision.

Dr. BEATON thought that if the Council did not make any conditions as to inspection the medical officer would be free to visit the premises at any time.

The Rev. J. SCOTT LIDGETT, however, argued that unless the Council claimed the right of inspection, that right was not inherent in a private arrangement of this kind.

Mr. JAY (chairman of the subcommittee) said that each of the medical men taking part in the scheme had been approved by the Council's medical officer for education.

Mr. DAVIS thought inspection of the work of treatment was quite unnecessary.

The Rev. STEWART HEADLAM said there was no disgrace in being inspected and medical men must not mind it if they received grants of public money.

Mr. JAY deprecated the insertion of a clause in the agreement providing for inspection. These were men the Council could trust, and he had no doubt every facility would be given the Council's medical officer to see the work as it was being done. To put in a definite clause might cause irritation.

The Rev. J. SCOTT LIDGETT: It is not suggested in an unfriendly spirit, but only as a guarantee to the public. The spread of medical treatment on these lines without any supervision would be dangerous. Dr. Kerr ought to be allowed to keep in touch with the medical men carrying out the work.

Members on both sides of the chamber having spoken in support of this view, it was agreed to substitute for the words "the Council shall have no right of interference" the words "nothing in this agreement shall prevent the Council's representative from visiting premises when treatment is being given." On March 1st the scheme came before the Council and was approved as amended by the Education Committee.

Recovery of Cost of Medical Treatment.

As stated in THE LANCET of Feb. 19th, p. 525, a report presented to the Education Committee of the London County Council on the subject of the recovery from parents of the cost of medical treatment was withdrawn for further consideration. On Feb. 23rd the subject was again considered, the subcommittee presenting a scale based, not on the full cost to the Council, but showing the remissions which, as a general rule, would be allowed to parents unable to pay the full amount. The tentative consent of the Finance Committee had been obtained to this method of dealing with the matter. The remissions began at 1*s.* and 1*s.* 4*d.* to a parent having what the committee called a "standard family" and earning £1 a week, and decreased as the salaries increased, the size of the family also being taken into consideration.

Mr. BRAY criticised the charges as "extortionate," and an amendment was moved to reduce the charge for ringworm to a nominal sum of 1*d.* per attendance.

Mr. SANDERS said it was a rule in the public medical service that contagious diseases should be treated at the public cost.

Miss ADLER urged that it would be more economical from the Council's point of view to provide free treatment of ringworm in order that the children might be cured in the shortest possible time and so prevent the loss of Government grants.

Mr. JAY, chairman of the subcommittee, replied that the parents were exceedingly gratified at the speedy cures effected by the X ray treatment, and he was sure they would pay the proposed charges willingly.

The amendment was lost by 15 votes to seven, and the scale was then approved.

ADAMS *v.* POMEROY.

THE fund raised to reimburse Dr. Martha Adams in respect of her legal expenses, incurred as the result of the action Adams *v.* Pomeroy, is now closed. Dr. Adams's out-of-pocket expenses amounted to a sum of about £100, which was not covered by the taxed costs. It was felt that this charge should not be allowed to fall on the plaintiff, and with the coöperation of the *British Medical Journal* and THE LANCET an appeal was made to the profession. There was a generous response from individual members of the profession, and this has been supplemented by a grant from THE LANCET which now completes the required sum. On behalf of those responsible for the inauguration of this appeal the honorary secretary wishes to express recognition of the sympathy and help which have been shown in the matter.

Dr. L. Garrett Anderson gratefully acknowledges the following contributions which she has received since the publication of the last list of donations:—

	£	s.	d.		£	s.	d.
THE LANCET Relief Fund	20	0	0	Dr. Owen Berkeley-Hill...	2	2	0
Miss F. Davenport Hill ...	1	1	0	Already acknowledged ...	78	19	6
T. M. C.	1	0	0				
Sir Richard Douglas Powell	3	3	0	Total	£106	4	6

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 3rd, 1832.

Of the Cholera Asphyxia, called the Indian Cholera.[1]

Having stated, in *The Times* of the 21st June last, that I had repeatedly detected acid to be predominant in cholera morbus of these climates, I proceeded to infer that a peculiar morbific acid is the cause of all the frightful tortures and deaths that so frequently and speedily overtake the wretch who is attacked by this terrible disease; and I also concluded, that as I had found ʒj doses of the carbonate of soda, given as often as the sensations of the presence of acid were experienced, that is, two or three times an hour, or once in two or three hours, relieve the pains, remove the nausea, or it may be the sickness, accompanied by a copious eructation of an agreeable gas, and promote fecal evacuations that were in some instances to the sensation absolutely scalding, I ventured to recommend a trial of this medicine in the cholera asphyxia, having moreover reasoned myself into the conviction, from the information I have been able to obtain from various sources, that the same virus which produces the cholera asphyxia is only an aggravated power of that which produces typhus fever. (See Mr. Searle's remarks on the connexion between cholera and fever, and Dr. Holbrook's communications.) The various phenomena depend for their variety on the mental and bodily state of the attacked, especially on the state of the first passages of the alimentary canal, the intrinsic energy of the nervous powers, which differ immensely in different individuals, and is not so readily ascertained as many seem to imagine; so that some shall have only one or two symptoms of unusual *gastric irritation*, which disappear with a dose of rhubarb and magnesia; others, as a patient of my own the other day, shall have pains of the bowels and cramps of the limbs, with great debility; and so on in all the various grades till we come to the unfortunate, who seems as if suddenly poisoned, suddenly struck with the hand of death. Besides, the fact that the disease, if it does not speedily destroy, generally assumes the form of typhus fever, is another strong ground to regard the cause of the two diseases as identical, and the diseases themselves as partaking of this identity. I believe I may claim to be the first to have called the attention of the public to the curative powers of the carbonas sodæ in this class of diseases.*

---

* Dr. Whitelaw Ainslie, however, had advised the use of an *ant. acid*, the subcarbonate of magnesia, in a work published by him in 1825 on the Indian cholera; and as he was thirty years in India, and the President of a Committee appointed to inquire into the nature of the epidemic cholera that prevailed in Southern India in 1809, 1810, 1811, it must be evident he must possess much original and practical information, which indeed this work evinces; also a pamphlet (by the same author) very lately published for John Wilson, Princes Street, Soho. Dr. Ainslie has bestowed much thought and much research on the subject, and the work will, I think, repay the reader.

[1] Excerpt from article by Dr. Paul Slade Knight of London, "On the Use of Alkaline Salts in the Cure of Typhus Fever, Cholera Asphyxia, and other important Dsseases."

Hospital Sunday at Falmouth.—During 1909 the Falmouth Hospital Saturday and Sunday collection amounted to £136. After paying necessary expenses the balance will be given to the Falmouth Hospital and the Truro Infirmary.

Princess Alice Memorial Hospital, Eastbourne.—At the annual meeting of the governors of Princess Alice Memorial Hospital, Eastbourne, on Feb. 25th, the decision of the committee to increase the accommodation was ratified. Plans were adopted for the erection of a building adjoining the hospital to hold 16 beds at a cost not exceeding £3500. This additional accommodation, it is believed, will meet the requirements for 10 or 15 years. The scheme of the committee was not unanimously approved, those opposing contending that to add to the present building was throwing money away, preferring that a house should be acquired where cases could be treated until such time as it was necessary to build an entirely new hospital.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Aberdeen.—The population of this city at the middle of 1908 was estimated by the Registrar-General at 178,210, but Dr. Matthew Hay, the medical officer of health, thinks that the population at that time did not exceed 167,100. But the rates in his report are all calculated on the former estimate, a fact which means that the rates given are probably lower than the actual rates. With this reservation the birth-rate was 25·1, the marriage-rate 7·3, and the death-rate 14·5 per 1000 in each instance. With respect to the relation of the birth-rate to the marriage-rate it is shown in the report that the rapidly falling birth-rate is not due to a similar decline in the marriage-rate, since the average number of births to each marriage shows a steady fall since the ten years 1876–85. The infantile mortality for the year 1908 showed, as in so many other towns, a rise on that of 1907—i.e., it was 129 per 1000 births as against 125 in 1907. But this was certainly not due to any lack of effort on the part of the sanitary authority, since the health visitors specially appointed to deal with this work and also the voluntary health visitors were untiring in their efforts. But, as Dr. Hay observes, "the habits of mothers cannot be changed in a year," and we are very glad to see that as regards future mothers the Aberdeen School Board has instituted a class for young women with a lady doctor as lecturer. During the last three years diphtheria has tended to increase in Aberdeen, and in connexion with the admitted difficulty of controlling the spread of this disease Dr. Hay refers to a recent investigation in Philadelphia, in the schools of which fully 10 per cent. of all the children were found to be carriers of what was apparently the diphtheria bacillus, and this organism in a seventh of the cases in which it was found was virulent and capable of killing guinea-pigs. An analysis of the cases in Aberdeen in 1908 showed that more than half were among children at "school" age period—i.e., from 5 to 15 years of age, and that fully one-third were among children under 5 years of age. Since the former period is more than twice the length of the latter, it would seem that the prevalence was as great under 5 years as between 5 and 15, a fact which Dr. Hay regards as being against the view of a dominant school influence in production of the disease. With respect to the antitoxin treatment of diphtheria attention is drawn to a circumstance in which the city of Aberdeen by no means stands alone. Although the medical practitioners are supplied with antitoxin gratuitously and sterilised syringes are also furnished, it is but comparatively seldom that these facilities are taken advantage of, and in only one out of every eight cases was antitoxin asked for. With respect to the numerous cases removed to hospital it was found that in only a very few had antitoxin been administered previously, even although the majority of cases were not notified until the third or fourth day of the illness. Dr. Hay adds, and the medical practitioners of Aberdeen will do well to note the fact, that for several years antitoxin has been administered to many hundreds of the children in the City Hospital without a single bad result, and he advises that medical men should at once resort to its use in all suspicious cases of the disease, as he points out that the antitoxin will do no harm should the patient not be suffering from diphtheria. Dr. Hay also refers to a matter which is of considerable interest to the profession as a whole, and that is to the administration of antitoxin by the mouth instead of subcutaneously. This method has been found, he states, as the result of some recent investigations, to be too feeble to be of much value in a curative sense, although it is effective in a preventive sense. In order that absorption from the stomach may be promoted it is desirable that the subject should fast for four hours before taking the antitoxin and for two hours afterwards, and that he should drink half an hour prior to taking the antitoxin a glassful of a 1 per cent. solution of bicarbonate of soda, the taking of the serum being accompanied by five drops of saturated solution of salol and chloroform and six drops of laudanum. As a preventive dose of antitoxin 500 to 1000 units should be employed, and dried serum, which is cheaper than ordinary fluid serum and which keeps indefinitely, can be utilised for this oral administration. There has been, Dr. Hay observes, a marked reduction in the death-rate from pulmonary tuberculosis in Aberdeen during the last 30 years, and at the present time there are only two deaths from tuberculous disease for every five that formerly took place. Reduction has taken place in other Scotch towns than Aberdeen, but in none of those towns with a population of 25,000 and over was the death-rate in 1908 so low as in Aberdeen. This fact renders it, Dr. Hay remarks, less urgent to submit a proposal for the further control of the disease, although he is at present carrying out a special investigation as to the behaviour of the disease in Aberdeen. Comparison of Aberdeen is made with Edinburgh, where definite machinery has existed for carrying on a vigorous crusade against the disease, and Dr. Hay draws attention to the interesting fact that during the years in which this machinery has been in operation the death-rate from tuberculosis in Edinburgh has fallen, if anything, more slowly than in Aberdeen. Arrangements are, it appears, being made in Aberdeen for the admission of phthisical patients into the City Hospital. An appendix to the report deals with a special inquiry on infantile mortality in Aberdeen in 1908, and among the conclusions arrived at are the following. The excess of infantile mortality is confined to the infants of the working and poorer classes, and during 1907 and 1908 the infantile mortality in houses of one, two, or three rooms was more than twice as high as among infants in houses of five rooms and upwards. The death-rate among the bottle-fed infants is usually more than twice as high as that amongst breast-fed infants, a difference which is confined almost entirely to the children of the working and poorer classes, and amongst the infants of the well-to-do classes bottle-feeding is scarcely less favourable than breast-feeding. Consequently, it cannot be the cow's milk in itself which causes the difference. The sovereign remedy for the excessive mortality amongst the working classes is breast-feeding; and Dr. Hay concludes that if the mothers in Aberdeen will act upon the advice given to them by the health visitors and other ladies nearly the whole of the waste of infant life which is not due to sheer poverty should disappear within a few years.

Borough of Guildford.—In absence of the prevalence of infectious disease systematic inspection of the houses in the poorer parts of Guildford was made during 1909, and out of 641 houses inspected defects of one kind or another were found in 561, figures which afford a good illustration of the value of house-to-house inspection and of the prevalence of minor sanitary defects. The Guildford medical officer of health, Dr. R. W. C. Pierce, attaches great importance to the maintenance of pure air inside dwellings, but he insists that before it can be taken full advantage of the people must be well and properly fed and properly clothed, and provision must be made for the permanent ventilation of living-rooms. This is a thoroughly sound proposition, but the provision of proper food and clothing is a matter which has hitherto been largely regarded as somewhat outside the immediate scope of public health. As regards housing accommodation, the borough council some years ago provided 18 cottages, and the investment, for such it is, is still regarded as satisfactory. Last year there was a total profit of nearly £12, eight of the cottages being let at 7*s.* 6*d.* and ten at 6*s* 6*d.*, and all these were occupied throughout the year. The milk-supply of this town is procured almost entirely from beyond the borough limits, some coming from distant counties in the West of England, and Dr. Pierce observes that there is no veterinary inspection of the cows either in the borough or in the adjoining rural districts. He suggests that a systematic veterinary inspection of the milch cows within and without the borough limits should be undertaken. The fact that the river Wey, which runs through Guildford, is a tributary of the Thames is in itself a sufficient guarantee that any pollution entering it will be carefully scrutinised by the inspectors of the Thames Conservancy, and they have been recently directing their attention to certain foul surface water drains which have now been connected with the sewers. It is an unfortunate circumstance that much of the surface water of this nature is very rich in organisms of the coli group. Practically all the cases of scarlet fever and diphtheria occurring in the borough are removed to the isolation hospital, at which the "return" cases over many years work out at less than 3 per cent. Of the patients admitted during 1908, 11 sent in as suffering from scarlet fever and 4 as suffering from diphtheria proved after admission not to be suffering from these diseases; but it is not stated whether or not any of these patients contracted any disease through their visit to the hospital. For the accommodation of advanced cases of pulmonary tuberculosis two open-air shelters have recently been erected in the workhouse grounds, but the earlier cases are sent by the guardians to a sanatorium. At the time of the Midwives Act coming into force the county council made arrangements with the local authorities whereby each of their medical officers of health should act as a local inspector, and Dr. Pierce reports that the arrangements worked satisfactorily. But the county council has now appointed the superintendent of the County Nursing Association to act as inspector for the whole of Surrey, an arrangement which Dr. Pierce does not regard as a beneficial one, owing to the greater delay which must ensue in dealing with cases of puerperal fever; and there is likely, he thinks, to be less response on the part of the midwives to the advice of a non-medical lay inspector than to that of the medical officer of health. The infantile mortality in the district was only 54·5 per 1000 births.

Egham Urban District.—Dr. G. Trew Cattell in discussing the water-supply of this district draws attention to the fact that the water of the Western Suburban Water Company, which supplies part of the district, has of late shown marked signs of inefficient filtration, and in his view the defect should be speedily remedied in order to avoid menace to the public health and detriment to the prosperity of the neighbourhood in its residential aspect. Reform is certainly called for, since as parts of the district are supplied with water from shallow wells it is somewhat difficult to close such wells unless there is a thoroughly satisfactory water-supply to offer. This district has hitherto been without isolation accommodation owing, it appears, to a want of unanimity amongst the representatives of the constituent authorities of the local joint hospital board. Fortunately, however, a public-spirited resident, Baron Schroeder, has given a valuable site for a hospital which is now in course of erection. The need for this institution may be inferred from the fact that during 1909 there were 60 cases of scarlet fever and 23 cases of diphtheria in the district.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Borough of Guildford.—In making his second annual report as school medical officer Dr. R. W. C. Pierce is able to state that, mainly owing to the existence of the county hospital, the majority of the serious defects discovered on inspection have already been, or will shortly be, remedied. It was found that parents who had on inquiry failed to procure treatment for their children gave as an excuse the fact that they had been unable to obtain the necessary letters of recommendation for the hospital, and in this connexion Dr. Pierce suggests that it might be well to adopt the practice now in vogue in the county area of referring cases when medical treatment has not been obtained to the school managers. Inquiries were made at each school in the district as to holding classes in the open air, and the teachers have been advised to hold such classes whenever practicable. It seems, however, that only a few of the schools have suitable sheds for the purpose of these classes, such sheds as there are becoming far too hot and "stuffy" in the summer months. No school nurse has yet been appointed in this district, and consequently not so much progress as regards the remedying of verminous conditions has been made as could be wished. Dr. Pierce speaks highly of the tar paving which has been laid down in some of the playgrounds, and, in his opinion, provision of this nature as well as of suitable and sufficient mats at the school entrances does a very great deal to maintain the floors of the schools in a cleanly condition. As regards these floors, there has been a report from one of the schools to the effect that frequent washing of wood block floors has proved very detrimental to such floors, and this has led to the managers of another school rescinding a previous resolution that the floors should be washed six times yearly in place of three. Dr. Pierce thinks that in the instance referred to there must have been careless soaking of the floors with water, and in any case he pronounces that the health of the children must be considered before the lives of the floors.

County Borough of Stockport.—Mr. H. E. Corbin and Dr. A. G. Caldwell have recently issued an interim report for the period Jan. 1st to July 31st, 1909, and as a result of the inspection of 3920 children 15 per cent. were found with dirty heads, 20 per cent. were mouth-breathers, 29 per cent. had eye diseases or defective vision, while 125 children were discharged from school attendance owing to certain disqualifying affections. 65 had ringworm or some skin disease. There were 18 with discharging ears, 5 with enlarged cervical glands, and 1 with tubercle. It is satisfactory to note that in this busy commercial town not more than 1 per cent. of the children were, in the opinion of the examiners, suffering from under-feeding, but 149 cases of rickets, due to improper feeding, were detected. About 10 per cent. of the children had insufficient or defective foot gear, and 15 per cent. showed no signs of vaccination. A considerable amount of treatment was procured by the parents, and inquiries showed that nearly all the dirty heads had been cleansed and were being kept clean, a fact which in itself almost justifies medical inspection.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8056 births and 4702 deaths were registered during the week ending Feb. 26th. The annual rate of mortality in these towns, which had been equal to 17·0, 16·6, and 15·8 per 1000 in the three preceding weeks, further declined to 14·7 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 15·6 per 1000, and the mean rate in London during the same period was also equal to 15·6. The lowest reported annual rates of mortality in the 76 towns last week were 6·9 in Hornsey, 7·0 in Walthamstow, 7·2 in Willesden, and 7·3 in East Ham, all being metropolitan suburban districts; the rates in the other towns ranged upwards, however, to 21·0 in Hanley, 21·5 in Huddersfield, 24·2 in Oldham, and 26·2 in Burnley. In London the recorded death-rate last week did not exceed 14·8 per 1000. The 4702 deaths registered in the 76 towns last week showed a further decline of 346 from the numbers in recent weeks, and included 266 which were referred to the principal epidemic diseases, against numbers declining from 361 to 327 in the four preceding weeks; of these 266 deaths, 101 resulted from whooping-cough, 49 from measles, 36 from diarrhœa, 34 from diphtheria, 32 from scarlet fever, and 13 from "fever" (principally enteric), but not one from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases did not exceed 0·8 per 1000, against 1·0 in each of the two previous weeks. No death from any of these epidemic diseases was registered last week in Bolton, Willesden, Tottenham, Southampton, or in 13 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·3 in Hastings, 2·6 in Swansea, 3·0 in Hanley, and 3·9 in Burnley. The fatal cases of whooping-cough in the 76 towns, which had been 157, 162, and 135 in the three preceding weeks, declined to 101 last week; but caused annual death-rates equal to 1·3 in West Hartlepool and in Sunderland, and 1·7 in Plymouth. The 49 deaths from measles showed a decline of 22 from the number in the previous week; the highest annual rates from this disease last week were 1·5 in Hastings, 2·1 in Swansea, and 2·9 in Burnley. The deaths attributed to diarrhœa, which had been 45 and 35 in the two previous weeks, were 36 last week. The 34 deaths referred to diphtheria showed a decline of 13 from the number in the preceding week, and were fewer than in any previous week of this year; they included 12 in London and its suburban districts, 3 in Liverpool, and 2 each in Portsmouth, Birmingham, and Huddersfield. The fatal cases of scarlet fever, which had been 31 and 22 in the two preceding weeks, rose again last week to 32, of which 4 occurred in Liverpool, 4 in Manchester and Salford, 3 in Birmingham and King's Norton, and 2 in Coventry. The 13 deaths referred to "fever" showed a decline of 4 from the number in the previous week; 2 fatal cases of enteric fever were recorded in Leeds last week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily declined in the 19 preceding weeks from 2819 to 1784, had further fallen to 1765 on Saturday last; 193 new cases of this disease were admitted to these hospitals during last week, against 212 and 215 in the two preceding weeks. The Metropolitan Asylums Hospitals contained but one case of small-pox on Saturday last. Of the 1386 deaths registered in London last week, 348 were referred to pneumonia and other diseases of the respiratory system, against 425 and 395 in the two preceding weeks; these 348 deaths were 64 below the corrected average number in the corresponding week of the five years 1905-09. The causes of 35, or 0·7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, Bristol, West Ham, Bradford, Nottingham, Salford, and in 50 other smaller towns; the 35 uncertified causes of death in the 76 towns last week included 8 in Liverpool, and 3 each in Birmingham, Manchester, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 867 births and 588 deaths were registered during the week ending Feb. 26th. The annual rate of mortality in these towns, which had been equal to 20·5, 17·0, and 17·7 in the three preceding weeks, declined to 16·2 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 17·9 per 1000, and exceeded by 2·3 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 12·8 and 14·7 in Paisley and Dundee, to 20·4 in Leith and 24·1 in Greenock. The 588 deaths from all causes in the eight towns last week showed a decline of 55 from the number returned in the previous week, and included 79 which were referred to the principal epidemic diseases, against 100, 92, and 69 in the three preceding weeks. These 79 deaths were equal to an annual rate of 2·2 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·8 per 1000. These 79 deaths in the Scotch towns last week included 40 from measles, 9 from diarrhœa, 8 from scarlet fever, 8 from diphtheria, 8 from whooping-cough, and 6 from "fever," but not one from small-pox. The fatal cases of measles, which had been 55 and 37 in the two preceding weeks, rose again to 40 last week, of which 29 occurred in Glasgow, 5 in Edinburgh, and 3 both in Leith and in Greenock. The 9 deaths attributed to diarrhœa were fewer than in any previous week of this year; they included 4 in Glasgow and 2 in Paisley. The 8 fatal cases of scarlet fever showed some increase, and included 6 in Glasgow and 2 in Edinburgh. Seven of the 8 deaths from diphtheria, and 6 of the 8 fatal cases of whooping-cough occurred in Glasgow. Of the 6 deaths referred to "fever," 4 were certified as enteric and 2 as cerebro-spinal meningitis; 4 were returned in Glasgow and 2 (both cases of enteric) in Greenock. The deaths in the eight towns referred to diseases of the respiratory system, which had been 110 and 135 in the two previous weeks, declined to 97 last week, and were 69 below the number returned in the corresponding week of last year. The causes of 14, or 2·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 606 births and 503 deaths were registered during the week ending Feb. 26th. The mean annual rate of mortality in these towns, which had been equal to 25·0, 26·0, and 22·8 per 1000 in the three preceding weeks, was again 22·8 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these Irish towns averaged 22·4 per 1000, whereas the mean rate during the same period did not exceed 15·6 in the 76 largest English towns and 17·9 in the eight principal Scotch towns. The annual death-rate last week was equal to 28·0 in Dublin, 18·7 in Belfast, 23·3 in Cork, 10·8 in Londonderry, 21·9 in Limerick, and 17·5 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 24·4 per 1000. The 503 deaths from all causes in the 22 town districts last week corresponded with the number in the previous week, and included 28 which were referred to the principal epidemic diseases, against 32 in each of the two previous weeks; these 28 deaths were equal to an annual rate of 1·3 per 1000; in the 76 English towns the mean rate last week from the same diseases did not exceed 0·8 per 1000, while in the eight Scotch towns it was equal to 2·2. The 28 deaths from these diseases in the Irish towns last week included 17 from whooping-cough, 3 from diphtheria, 3 from diarrhœa, 3 from "fever," and 2 from scarlet fever, but not one from measles or from small-pox. The fatal cases of whooping-cough, which had been 25, 19, and 20 in the three preceding weeks, declined to 17 last week, of which 14 occurred in Belfast and 2 in Limerick. The 2 fatal cases of scarlet fever included 1 each in Dublin and Belfast; and 1 death from enteric fever was returned both in Dublin and in Cork. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 185 and 130 in the two preceding weeks, rose again last week to 146. The causes of 15, or 3·0 per cent., of the deaths registered in the Irish towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent., and in the eight principal Scotch towns it was equal to 2·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: G. H. Foott to the *Albemarle*, on recommissioning, and J. Moore to the *Shannon*, on recommissioning. Staff-Surgeons: P. L. Crosbie to Queensferry Sick Quarters, and J. Macdonald to the *Vivid*, additional, for disposal; N. H. Harris to the *Shannon*, on recommissioning; D. W. Hewitt to the *Emerald*; N. H. Mummery to the *Hawke*, and to the *Encounter*, on recommissioning; E. R. Grazebrook to the *Hawke*, for voyage home on the *Encounter's* recommissioning; J. D. S. Milln to the *Encounter*, on recommissioning; and M. A. Penfold to the *Duke of Edinburgh*, on recommissioning. Surgeon H. A. Browning to the *Hawke*, for voyage home on the *Encounter's* recommissioning. Surgeon J. McA. Holmes to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel H. S. McGill, from Poona, has been appointed to command the station hospital, Secunderabad, and Lieutenant-Colonel W. C. Beevor, C.M.G., C.B., from Dalhousie, has been appointed to command the station hospital, Bangalore. Major T. McCulloch, from Lebong, has been transferred for duty to Burma. Lieutenant-Colonel W. W. Pike, D.S.O., from Darjeeling, has been transferred to the home establishment. Major J. E. Carter, Captain F. C. Lambert, and Captain S. E. Lewis, on return from South Africa, are posted to the Eastern, Southern, and Eastern Commands respectively. Major W. D. Erskine, from Egypt, has been posted to the Northern Command, and Captain P. Farrant, from Jamaica, has been posted to the Southern Command. Captain E. McDonnell and Captain W. L. Bennett have left for Bermuda. Captain R. F. Ellery has been appointed to the command of the station hospital, Benares, vacated by Major J. B. Anderson. Captain W. B. Fry and Captain J. Powell have been selected for service with the Egyptian army. Major A. J. Chambers, Captain N. J. C. Rutherford, Captain O. W. A. Elsner, Captain H. B. Fawcus, and Captain G. Carroll have embarked for a tour of duty in South Africa. Captain J. G. Churton has been appointed specialist in advanced operative surgery to the First (Peshawar), Division and Major M. Swabey has been appointed specialist in midwifery and diseases of women and children to the Fifth (Mhow) Division.

Captain John B. Cautley retires, receiving a gratuity (dated March 2nd, 1910).

The undermentioned Lieutenants to be Captains (dated Jan. 30th, 1910): Gerald H. Stevenson, John H. Spencer, William H. Forsyth, Archibald C. Amy, Alfred H. Heslop, Wright Mitchell, James A. B. Sim, Edward J. Elliot, Edward Gibbon, Robert W. D. Leslie, Ernest B. Lathbury, Cecil Scaife, Daniel M. Corbett, Michael J. Lochrin, Ernest D. Caddell, Benjamin Johnson, William E. C. Lunn, John R. Foster, William W. Boyce, Duncan Coutts, Arthur M. Benett, George P. A. Bracken, James A. Bennett, Whiteford J. E. Bell, Charles W. Bowle, Hector L. Howell, William F. M. Loughnan, Thomas W. Browne, William I. Thompson, Carlisle Kelly, Dennis T. MacCarthy, Ernest C. Phelan, John J. O'Keefe, Edward J. Kavanagh, and Arthur H. Jacob.

Lieutenant Stephen Field, from the Seconded List, is restored to the establishment (dated Jan. 29th, 1910). Lieutenant Malcolm Leckie is seconded for service with the Egyptian Army (dated Feb. 11th, 1910).

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. F. A. Harris, Inspector-General of Civil Hospitals, and Lieutenant-Colonel C. Mactaggart, Inspector-General of Prisons, have been appointed official members of the United Provinces Legislative Council. Lieutenant-Colonel F. J. Drury has been confirmed as Principal of the Calcutta Medical College. Lieutenant-Colonel J. A. Cunningham, on completion of special duty at Rawalpindi, has been appointed Civil Surgeon, Lahore, relieving Lieutenant-Colonel D. T. Lane, who has been posted as Civil Surgeon and Superintendent of the District Jail, Sialkote. Lieutenant-Colonel G. W. P. Dennys has been appointed Administrative Medical Officer of the North-west Provinces. Major N. R. J. Rainier, Civil Surgeon, Chindwara, has been transferred to the Hoshangabad District. Captain F. N. White has been temporarily posted to the Central Provinces. Captain H. B. Drake, Deputy Assay Master, reverts to military duty. Captain F. E. Wilson has been appointed health officer, Peshawar. Captain A. E. J. Lister has been appointed surgeon to His Excellency the Commander-in-Chief in India. Captain H. S. Matson has been appointed a specialist in the prevention of disease and placed in charge of the brigade laboratory, Kohat.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation):—George Henderson Stevenson (dated Jan. 20th, 1910); and Sidney John Steward (dated Jan. 28th, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd London General Hospital: Major Sidney P. Phillips to be Lieutenant-Colonel (dated Dec. 5th, 1909). Captain Sidney H. C. Martin to be Major (dated Dec. 5th, 1909). Sir Victor Alexander Haden Horsley to be Captain, whose services will be available on mobilisation (dated Feb. 13th, 1910).

DEATHS IN THE SERVICES.

Surgeon-Major-General G. L. Hinde, C.B., A.M.D., D.S.O. He entered the service as assistant surgeon in 1855, became surgeon in 1868, surgeon-major in 1873, deputy surgeon-general in 1885, and surgeon-major-general in 1892, in which year he retired. He served in the Crimea from July, 1855, including the siege and fall of Sebastopol (medal with clasp and Turkish medal). He also served in the Boer War in 1881, and in the Soudan campaign in 1884–85 (mentioned in despatches, C.B., medal with clasp, and Khedive's star).

THE BRITISH RED CROSS SOCIETY.

At a recent meeting of the Glamorgan branch of the Red Cross Society held in the City Hall, Cardiff, under the auspices of the Countess of Plymouth as President and Earl Plymouth as treasurer, Mr. J. Lynn Thomas, the branch secretary, in the course of an interesting address, explained the part that Cardiff would take on mobilisation in forming a general hospital of 520 beds as well as convalescent homes at Bassaleg, Porthcawl, Aberystwith, Llandrindod Wells, Llanwrtyd, and other centres. Diagrams were displayed representing the scheme that the Glamorgan branch would follow in the event of an engagement being fought locally, and the speaker hoped that the branch would be in a financial position to put forward an efficient ambulance corps of its own.

In connexion with the proposed City of London Branch of the Red Cross Society, of which the Lady Mayoress has been selected as president, a meeting will be held at the Mansion House on March 10th at 4 P.M., when Sir Frederick Treves, Bart., G.C.V.O., will deliver an address.

At Marylebone a meeting of the local branch of the Red Cross Society was held at its hall in Regent-street on Feb. 23rd. This is the first borough branch in London to furnish complete detachments for voluntary aid under the new Red Cross scheme of the Territorial Army, the first units being furnished by the Polytechnic complete in every detail, including a detachment formed by ladies, under the direction of Dr. May Thorne. Interesting addresses were delivered by Colonel Cantlie, Mr. Stanley Quicke, and by the Commandant, Dr. May Thorne.

At the quarterly meeting of the County Association of the Yorkshire (West Riding) Territorial Association, held at York on Feb. 7th under the presidency of the Earl of Harewood, the organisation committee reported on the arrangements made for the coöperation of the Red Cross Society and the general mobilisation committee with reference to the provision of general hospitals in the event of mobilisation for war. The secretary stated that everything was complete as regards the provision of hospitals at Sheffield in which place the University buildings could be used within 48 hours from receiving warning. At Leeds, however, arrangements were not so forward, but they were progressing satisfactorily.

Under the chairmanship of Lieutenant-Colonel K. P. Simpson, J.P., a meeting was held on Feb. 22nd at Petworth for the purpose of initiating a branch of the Red Cross Society for the district. Colonel Luttman Johnson, D.S.O., explained the aims and objects of the society.

THE SANITARY CONDITION OF OSBORNE COLLEGE.

In the House of Commons on Feb. 28th Lord C. Beresford questioned the First Lord of the Admiralty with regard to the sickness among naval cadets at Osborne and also as to the sanitary condition of the building. Supplementary questions were also asked by other Members of Parliament. Mr. McKenna in his replies said that the nature of the illness was epidemic influenza. 244 cadets were affected, and there had been one fatal case of pneumonia and peritonitis.

THE ISSUE OF POINTED BULLETS.

Mr. Haldane, replying to Mr. Wedgwood in the House of Commons on Feb. 28th, said that the experiments with regard to pointed bullets had so far been successful, and that an extended trial by the troops would shortly be made.

NAVAL MEDICAL DINNER.

The Naval Medical Dinner will take place in June, and a notice giving details will be issued later.

Correspondence.

"Audi alteram partem."

THE FLOODS IN PARIS: A REASSURANCE.

To the Editor of THE LANCET.

SIR,—Much has already been written upon this subject, chiefly in the way of lurid description or of Cassandra-like prophecies of trouble to come. As typhoid fever is the special dread of many, may I point out the comparatively small mortality in Paris from that disease in recent years—a fact that is surely encouraging in view of the rumours of burst drains and contaminated water-supply. (According to official information, by the way, only one sewer, that in the rue Richepanse, has burst in the whole of Paris.) The deaths from typhoid fever in Paris amounted in 1905 to 240, in 1906 to 290, in 1907 to 267, in 1908 to 224, and in 1909 to 259.

While the present flood has beaten all records both in the height to which the Seine has risen and in the material destruction it has caused, it is well known that the danger level has several times been reached in the past 30 years. It has seemed to me that careful study of the health records of Paris on these occasions would throw light on the consequences to be expected from the present state of affairs. As such information is not easily obtained, I beg to call the attention of your readers to the conclusions of a valuable article in a recent number of the *Presse Médicale* (Feb. 12th, 1910), by Dr. Jacques Bertillon, Chef des Travaux de la Statistique Municipale de la Ville de Paris, entitled "Les Crues de la Seine n'ont Aucune Influence sur la Fréquence de la Fièvre Typhoide."

Dr. Bertillon points out that while the highest point touched by the Seine in its recent rise is 8 metres 62 at the Bridge of Austerlitz, the hydrometric authorities of Paris consider a height of 6 m. 14 as "disastrous." In the last 50 years, a period of exact statistical compilation of mortality returns, that level has been reached or passed three times. Dr. Bertillon gives the deaths from typhoid fever before, during, and after the rise of the Seine upon each occasion in those parts of Paris that line the river bank, as well as in the rest of the city. The floods of December, 1882, and January, 1883 (6 m. 24 at the Bridge of Austerlitz) are particularly instructive. The statistics of 1882–83 are also much more detailed than in earlier years, and the mortality rates are obtainable week by week in the various quarters of Paris. Not only was typhoid fever ten times more frequent then than now (the average total mortality per annum of the five years 1880–84 being 2311 as compared with 256, that of 1905–09), but the summer and autumn months of 1882 witnessed an exceptionally heavy epidemic, the total annual mortality from typhoid being 3214. Now, if the floods of the Seine had any effect on the spread of typhoid fever in Paris it would surely have been in evidence upon this occasion, for they came at a time when the epidemic was subsiding, and they lasted no fewer than 13 weeks. The epidemic was at its height in September-October, 1882, the greatest weekly mortality being Oct. 6th–12th, namely, 247, and it gradually subsided through November and December with a respective weekly maximum mortality in these months of 114 and 79, through January and February (64 and 40) to March and April, when the weekly returns varied from 21 to 34. Not only, therefore, it is clear, did the floods fail to increase the epidemic, but they apparently had no influence whatever upon its gradual disappearance, which occurred as regularly in the low-lying parts of the city close to the river as elsewhere. No epidemic occurred during the whole of the year 1883, the total mortality from typhoid being, indeed, lower than during any of the preceding three years.

In view, Sir, of these facts, we are certainly justified in concluding that precedent goes to show that the present floods will not be followed by any outbreak of epidemic disease. May we not even expect, from the sanitary improvements and various precautions now undertaken, that the health of Paris will be even better than before?

I am, Sir, yours faithfully,

Paris, Feb. 24th, 1910. A. A. WARDEN.

⁂ We are glad to publish this interesting letter, which confirms much that has been written in our columns by our Special Sanitary Commissioner and our Special Correspondents.—ED. L.

SOUR MILK.

To the Editor of THE LANCET.

SIR,—The recent illness of Lady Bancroft, which has been attributed to the use of sour milk, has produced a number of letters in our daily press, the majority of which show, unfortunately, a lamentable ignorance of the scientific principles underlying the preparation and properties of this article. It seems to be assumed by most of those who write on this subject that the possession of a pure cultivation of a certain organism is all that is necessary, while the fact is that proper sterilisation of the milk before inoculation, the perfect cleanliness of all the vessels used, and the careful protection of the milk after inoculation and during the period of incubation, are of equal value to the purity of the culture employed, and that if undesirable effects should result from the sour milk it is as likely to be caused by the neglect of one or other of these precautions as to do with the cultivation employed or the treatment itself. In reading the letters which have appeared in the press lately one cannot but be struck by the ideas that are held by certain of the writers, that one or other of the special preparations or tablets is supposed to contain the true and only organism which can be used for this purpose. Such a statement is, to say the least, erroneous, even if it does not bear another interpretation, and it is necessary to point out that the peculiar organism which is present in Bulgarian and Eastern soured milks, and to which Professor Metchnikoff has directed attention, belongs to a class of organisms any one of which is probably as effective as another. During the past two years large quantities of genuine Bulgarian sour milk have been brought into England, and it is open to any bacteriologist who has the necessary skill to isolate the desired organism, and at the present time there are several commercial cultures and also soured milks prepared by one or two of the well-known dairy companies which are perfectly reliable and trustworthy in every way. The public has unfortunately been led to believe that Professor Metchnikoff has stated that one organism and one only, which is to be found in a certain preparation now on the market, is the only one which is of any value, but it may be pointed out that though Professor Metchnikoff may have stated (as he has done) that this particular organism is a good one, it is also perfectly true that there are many on the market to-day equally as good. It seems to have been forgotten by many of those who prepare both commercial cultures and also soured milks themselves that in Eastern soured milks this peculiar lactic acid organism is always accompanied by a lactic-acid-producing streptococcus, and it seems therefore desirable, since it is the use of these Eastern soured milks which has given the impetus to this particular therapeutic treatment, that both these organisms should be present in preparations supplied to the public in order that they may have the benefits arising from a fermentation as similar as possible to that which takes place in the native article.

In conclusion, it may be well to direct the attention of those who wish to try this sour-milk treatment to the fact that they should assure themselves beforehand that they are fit subjects for it, as it is not everyone who is able to digest milk itself, and they should therefore consult a medical man before starting the treatment, as otherwise undesirable effects may result (which would be attributed to the sour milk itself) and tend to bring a valuable therapeutic agent into disrepute. From a bacteriological point of view it is difficult to conceive that sour milk *per se* would cause ill effects, as the acid fermentation which takes place protects the milk from other and undesirable changes which in the ordinary way might occur. I am, Sir, yours faithfully,

R. TANNER HEWLETT.

King's College, London, W.C., March 1st, 1910.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—The discussion on the use of Clamps in Gastro-jejunostomy by your correspondents in THE LANCET has been useful in eliciting various opinions as to the supposed advantages and disadvantages of these instruments. Having tried both methods somewhat extensively, I have come to the conclusion that the use of sufficiently long and supple clamps, properly applied, does materially assist the surgeon in bringing about an accurate and rapid suturing of the coats of the applied viscera.

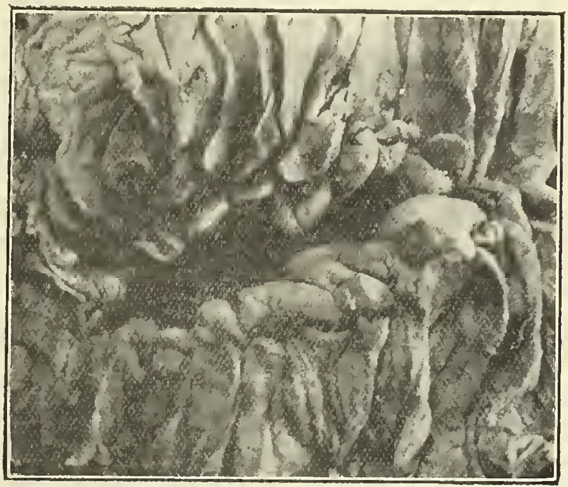
Though, as has been pointed out, the gastric and jejunal contents may be in most cases sterile, yet they are irritating fluids to raw surfaces, and the repeated necessity of sponging away this secretion and the accompanying blood prolongs the operation, especially when skilled assistance is not available. The disadvantages which have been brought forward are mainly two in number.

First, it has been suggested that the coats of the stomach and intestines may be injured by the pressure of the instrument. This, I think, will not occur if the blades are sufficiently long to allow of the necessary compression taking place at some distance from the dangerous joint angle; and if they are lightly applied, with just sufficient force to pad together, and not to cut through, the delicate mucous coat, as a ligature tightly applied cuts through the inner coat of an artery.

Secondly, as regards hæmorrhage. If the clamps are applied so firmly as to prevent all bleeding during the suturing, and are only removed after the operation is completed, then there is no doubt a real danger that serious hæmorrhage may occur undetected after their removal. Fortunately, there is a simple way of preventing such a disaster. If after the viscera are both opened and the inner or mucous thread has been placed on the posterior lip of the stoma, the clamps are, as a routine procedure, temporarily relaxed sufficiently to allow any divided vessels of any size to bleed, then any such bleeding artery or vein can be readily ligatured in the submucosa on the anterior lip, or under run with a separate suture on the posterior lip.

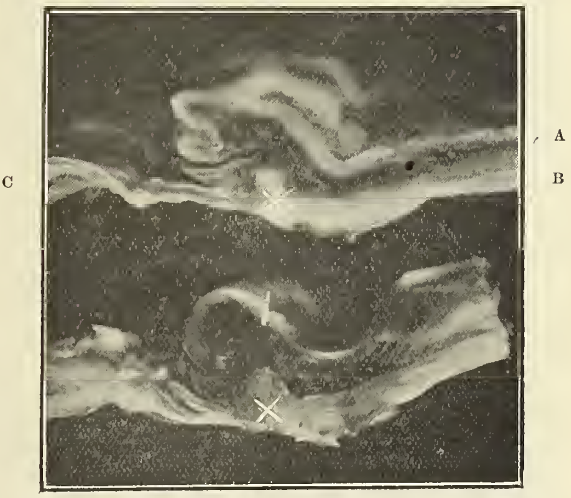
May I add one word concerning what seems to me to be the right disposition and relation of the mucous and sero-muscular coats of the applied viscera at the anastomotic opening. There can, I think, be no doubt that a too free removal of supposed redundant mucous membrane, together with a too deep application of the inner or so-called hæmostatic suture, may result in a condition of the parts in which the inverted and applied sero-muscular coats are uncovered or inefficiently covered by mucous membrane. Primary union under these conditions is not possible and a cicatrix enveloping the ring-like opening results. It was in order to avoid this difficulty that for a long time I avoided the use of clamps, refrained from cutting away any mucous membrane, and only included the mucous coat in the inner suture, seeking thus to provide a supple and sliding mucous covering at the edge of the anastomotic opening. It soon, however, became apparent that,

FIG. 1.



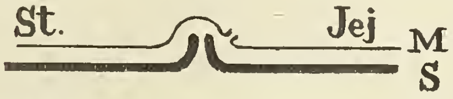
Gastro-jejunostomy opening from jejunal side.

FIG. 2.



Section through stoma. A, Mucous coat of stomach. B, Sero-muscular coat. C, Jejunum. ×, Inverted sero-muscular coats.

FIG. 3.



Section through stoma after gastro-enterostomy. St., Stomach. Jej., Jejunum. M., Mucous coat. S., Sero-muscular coat.

provided a sufficient area of both stomach and intestine are brought through the clamps, no difficulty is experienced in thus suturing the mucous coats well over the sero-muscular ring, even when clamps are used, and if rather more of the mucous membrane of the stomach is included in each stitch then the latter tends to roll over the junction towards the intestinal side, and thus shields and protects the edge of the stoma. This is seen in the accompanying illustrations of a gastro-jejunostomy opening, seen in section, and from the jejunal side, from a patient in whom death occurred from other causes three days after operation.

I am, Sir, yours faithfully,

Leicester, Feb. 19th, 1910. C. J. BOND.

To the Editor of THE LANCET.

SIR,—*Clamps or no clamps* is the question raised by Mr. Sinclair White, and, as usual in medicine, it cannot be decided by the profession, as individual bias belongs to both aspects of the question. For some years I performed anastomosis without clamps, and for other years I used them; after my visit to the Mayo brothers at Rochester, Minn., U.S.A., three and a half years ago, I adopted Roosvelt's three-bladed clamps with rubber on, and now I have discarded it in favour of a three-bladed instrument, which is weaker and used without any rubber.

I cannot recall a case where I have regretted the use of clamps, nor a case where I have regretted the non-use of clamps. The clamp I use does not occlude the blood-vessels. The bleeding is usually a little more profuse from venous congestion than when an anastomosis is performed without them. In the early days, when I performed gastro-enterostomy *en Y* I used to crush the intestine according to the method of Doyen of Paris and Roux of Lausanne; such coarse treatment of intestine did not give rise to unusual depression of pulse as some of your correspondents mention as having occurred during the application of clamps. I think that traction upon intestine and unnecessary rough handling of the solar plexus, rather than compression of intestine, is the cause of such reaction upon the circulatory system. A continuous suture with adequate tension kept up during its application and involving only short sections of intestinal wall should, I think in all ordinary cases, stop post-operative hæmorrhages, and in my opinion clamps are useful in the rapid performance of gastro-enterostomy where assistants are not well trained.

Personally, I have given up the bloodless method of gastro-enterostomy which has been so brilliantly successful in the hands of the Mayo brothers.

I am, Sir, yours faithfully,

Cardiff, Feb. 22nd, 1910. J. LYNN THOMAS.

INVALIDITY INSURANCE AND THE GENERAL PRACTITIONER.

To the Editor of THE LANCET.

SIR,—Among the numerous evils that at the present day threaten the struggling general practitioner, invalidity insurance must not be lost sight of, for it might be as oppressive and damaging as any. That what might be a very serious additional burden on our already overweighted profession is not unlikely must be admitted when certain pronouncements of the Government are considered. To some, such a forecast may appear too pessimistic, and I am not prepared to gainsay that some form of compulsory insurance might have its advantages in compelling certain sections of the community to contribute towards their own necessities, and that under certain conditions the medical profession might be a gainer thereby. But as it is most probable that the late Government had the German system chiefly in mind when indicating their proposed reform, the outlook for the medical profession of this country does not appear very encouraging.

The present generation of practitioners has grown up under a system which, if it has its defects, is in many respects more worthy of our profession than most of the schemes that threaten to displace it. It has hitherto been an independent profession, but must soon lose that position if schemes of nationalisation should succeed in gaining any considerable ascendancy. For many generations it has had the support of nearly the whole of the community. Already hospital abuse has made considerable inroads, and now the recent report of the Poor-law Commission threatens to deprive it of that large class of the public technically known as "poor." In addition to all this, we are now faced with invalidity insurance in the near future, and it might be instructive to take a glance at what this may not unlikely bring with it. Invalidity insurance, as met with in the German Empire, means a compulsory insurance of all wage-earners with an income below a certain standard. Employers are required to deduct a portion from the wages of their employees; they are themselves obliged to contribute another portion, and certain contributions are made by the State. Out of funds collected in this manner the insured are found medical attendance and subsistence during illness and necessary hospital and sanatorium treatment in particular cases.

What effect this invalidity insurance has had on the profession in Germany I do not know. It is possible the medical profession there has benefited by it. But in the latter case it would be no safe deduction to assume that a similar result would follow in this country. It all depends on what was the condition of the German medical profession in the time antecedent to this national insurance. What would be the probable effect of such an insurance on general practice in the case of the great majority of practitioners in this country? I believe there are few who do not in a great measure rely on the private fees paid by a considerable majority of those members of the community that would certainly be included in this form of insurance. Whether these would be content under such circumstances to suffer regular deductions from their earnings for medical insurance, and employ their private doctors just the same, I do not know. I leave it to the opinion of my brethren. Personally, I think it most unlikely. It is quite possible that by consenting to the imposed conditions many of the private doctors of the insured would be able to continue to attend their former patients; but it would be strictly on a club system, and it would be absurd to imagine they would be likely to get anything like the same remuneration for their work as had previously been the case. One result is obvious. There *must* be an enormous increase in contract practice. Again, a large number of practitioners—I might almost say a majority—cannot do without clubs at the present time, although they justly complain of their club remuneration. Invalidity insurance, if it did not increase the rate of the present club payment, would necessarily make a profound difference in the present club system. Directly it became fairly established, practitioners would speedily lose their present clubs, as such, although they might have an opportunity of retaining a portion of their members by assisting in the working of the scheme. Their total number of club members would probably be greater than at present by having enrolled among them many of their former private patients. Such an outlook does not seem to me very attractive to the average practitioner. Nay, if the choice were between this and the nationalisation of medicine, it might be somewhat difficult to choose. Of two evils, we are told to choose the less, but which would be the less?

Of one thing I cannot help feeling convinced: that for the existing practitioners, and those seeking to follow after them, the present condition of things with all its evils, is better, and offers far greater advantages for every one of us, than any improvement likely to arise from invalidity insurance, or the nationalisation of medicine. On the other hand, it might possibly be urged, How about the public? The foregoing might be true with regard to the profession, but it might be otherwise with the public. The public might be a gainer though the doctor were a loser. I cannot think so. For the welfare of the public, in my opinion, the following conditions are all important: 1. The medical profession must be independent. Under no system of nationalisation can this be the case. 2. It must afford a decent subsistence to its members, and at least raise them above actual poverty. This condition at the present time is not altogether satisfactorily complied with, but it would be no remedy to change a large number of the present private patients of doctors into club patients. 3. Free competition among all practitioners, restrained only by proper ethical rules, is vitally necessary for the welfare of the public; and although it may be said in some cases to protect imposture and ignorance, on the whole it is the best incentive to good work; and by encouraging to the utmost individual enterprise it largely tends to promote and foster the well-being of the community.

I am, Sir, yours faithfully,
MAJOR GREENWOOD,
Hon. Sec. Poor-law Medical Officers' Association of England and Wales.
Copthall-avenue, E.C., Feb. 26th, 1910.

UNIVERSAL SERVICE PETITION.

To the Editor of THE LANCET.

SIR,—Members of our profession being closely in touch with the aspirations of the individual, as contrasted with the wishes expressed by the crowd, will have realised that a wave of national self-consciousness is passing over the country. To-day men are realising more fully than they have done for a generation their duty towards the nation and the Empire. They have become somewhat tired and ashamed of estimating security by the quota of *Dreadnoughts*, and they desire to take upon their own shoulders a proper share of the Imperial burden. This sentiment has during the past eight weeks taken corporate form. A body of citizens, several members of which belong to our profession, have organised a petition for presentation to His Majesty the King, the wording of which purports to bring official discussion of efficient national defence at once upon the *tapis* of practical politics.

The purpose of this petition may be summarised in the following sentences: Recent events make it evident that defence of these islands must be organised now. It is not advisable tacitly to await the time when Parliament shall consider itself free to devote itself solely to the discussion of defence. Time will be saved if a decided answer is given by the people to the simple question, "Do you desire universal service for home defence?" This answer, if it is to be in any degree unanimous, must be dissociated from all party questions, and can therefore be obtained only if the means of giving it is arranged by citizens unassociated with party politics. No misunderstanding will arise if a petition is organised by the citizens for themselves, and if it is presented by the citizens to the head of the State. Opinions differ widely as to the amount of training and length of service which will be of value in a military sense and possible without dislocation of trade. Unanimity on these points cannot be arrived at, and they must be settled by Parliament in consultation with military and commercial experts before universal service becomes law. The matter will never be discussed by Parliament until the people have signified their readiness to serve.

The "Universal Service Petition" has been organised by private citizens, uninfluenced by party politics or by any school of military thought, in order to give the individual an opportunity of answering the plain question, "Do you desire that every man should be trained to bear arms and that he should be rendered liable to serve in defence of his country?" The words "service" and "defence" are used here as they are understood by the man in the street, and do not necessarily connote service in time of peace or outside the country. For the military experts the words "service" and "defence" may have a special meaning, but the man who signs the "Universal Service Petition" merely signifies his wish that every man should be armed for his country's defence and be taught to use his arms effectively. He will see to it that his representative in Parliament knows his exact wish before a Universal Service Bill becomes law. Without doubt, the majority of the people are ready to bear arms; the minority should reflect that our shores are no longer invulnerable and have to be guarded by an immense fleet, which is therefore unable to act on the high seas to protect the trade routes and the outlying parts of the Empire. Universal service, in which men of every class take their share, will restore national cohesion. A soldier thinks first of the welfare of the nation and the Empire; the interests of his class and of his person take a second place. Universal service improves the physique and morale of a nation, and by checking "Jingo" outbursts makes for peace. If the headquarters of the Empire are weak the whole structure may readily crumble. The colonies are adopting manhood armed service. We can scarcely do less. In the face of an actual armed menace we should all be clamouring for arms. An armed mob is worse than useless, and, opposed to trained troops, a nation hastily armed is a nation committing suicide. Let us, therefore, demand arms now and learn to use them effectively. This demand is the meaning and purpose of the "Universal Service Petition."

The circulation of the petition papers requires organisation, but the "Universal Service Petition" is in no sense a permanent body, and it is hoped that the work will be accomplished by voluntary effort in a period to be estimated in weeks. The work is supported by numerous members of the existing patriotic organisations, and it has to-day received the official blessing of the National Service League, of which Lord Roberts is the president. In each parish and village the doctor is the man who is in touch with every individual. He is therefore the man to initiate a movement springing from a popular desire, and it is hoped that a very large number of medical men will communicate with the secretary of the Universal Service Petition, 109, Victoria-street, London, S.W., who will furnish information and a scheme for the circulation of the petition papers.

I am, Sir, yours faithfully,
Victoria-street, S.W., Feb. 19th, 1910. ERNEST WAGGETT.

THE CONTROL OF SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—A leading article with this title in THE LANCET of Feb. 19th last, based on the paper on the Control of Scarlet Fever, read by Dr. F. G. Crookshank before the Epidemiological Section of the Royal Society of Medicine on Jan. 28th, and published in THE LANCET of Feb. 19th, rightly lays stress on the importance of the control of infectious diseases in isolation hospitals and invites the observations and views of other medical superintendents of fever hospitals.

Between the years 1901 and 1908 the writer was the medical superintendent of a fever hospital which had to serve the needs of a resident population which increased from 29,000 to 55,000 during that period. It may well be realised that during that interval, before enlargement of the hospital to meet its growing needs could be secured, times of anxiety were experienced when it was impossible to rigorously reserve separate pavilions and wards for separate diseases. The results of administration experienced under these conditions are briefly crystallised in the following quotations from a paper on Scarlet Fever and Diphtheria from the Public Health Point of View, published in the special number of the *Practitioner* on Scarlet Fever and Diphtheria (January, 1909:—

> A very important point in the administration of a fever hospital, if it is going to prove a really preventive measure instead of a possible danger, is the strict limitation of the numbers admitted. (The Local Government Board standard of 2000 cubic feet for each patient should be upheld as a minimum.)
>
> Should the cubic space be reduced complications are sure to arise. In a common ward, each patient is, to a certain extent, a source of possible detriment to the others. ...... Other points of internal administration are also of importance in determining whether a fever hospital is of real use or the reverse; particularly in regard to the supervision and instruction of the nurses with reference to their duties.
>
> A point to be constantly urged, until the nurses almost automatically act on the idea, *is that each patient should be looked upon as possibly harbouring some form of infection which might be transferred to another.* This applies to all cases on admission until proved bacteriologically free of diphtheria organisms, and streptococci or other infective bacteria; and especially to all cases with aural or nasal discharge.
>
> This idea involves not only separate articles of linen, food, crockery, and plate, but also which is more important still, that the nurse should carefully soak her hands in a suitable disinfectant solution, after attending to *each* patient *before proceeding with the next*, even in a ward labelled for only one recognised zymotic disease, say scarlet fever.
>
> When properly administered, a fever hospital can only work for good, but under bad management, or insufficient control, it might easily be a source of evil. There is much to be said for glass partitions between beds, but I am satisfied that the main point is to have each patient dealt with, as if he or she might infect or receive infection from another, even in a common ward. (Practitioner, vol. lxxii., No. 1, January, 1909, p. 164.)

By the practice of such principles it is possible to completely eradicate that bugbear known as post-scarlatinal diphtheria, which by systematic swabbing of every scarlet fever patient on admission was found really to be accounted for by the presence of Klebs-Löffler bacilli in the throats of 2 to 4 per cent. of the scarlet fever cases *on admission*. For want of other accommodation these cases had to be admitted to the scarlet fever wards, but the precautions mentioned above invariably prevented any spread or the occurrence of so-called post-scarlatinal diphtheria among the other patients. Before the *régime* introduced at the end of 1901 similar cases were, as a matter of course, always admitted to the scarlet fever block, since the question of the presence of diphtheria bacilli in the throats of cases of scarlet fever on admission prior to 1901 was never even thought of in connexion with the administration of most hospitals, much less systematically sought for by bacteriological examination of throat swabbings. Prior to the inauguration of this scientific control of the new admissions post-scarlatinal diphtheria frequently occurred, as it did also during the interim which elapsed before laboratory details were complete under the new *régime*.

There can be no doubt that too much money has been spent in many places on very elaborate fever hospital buildings where the money would have been better spent in securing the full-time services of an expert fever hospital medical superintendent with bacteriological knowledge, experience, and equipment, who would so have instructed his nurses as to secure enviable results in a hospital of a more modest design than many municipal hospitals in existence. I advocated the use of glass partitions in wards in a paper on "Fever Nursing" in *The Hospital* in 1901, but riper opinion is outlined in the last sentence quoted above from the later paper in 1909.

I am, Sir, yours faithfully,

Norwich, Feb. 19th, 1910. J. T. C. Nash.

TUMOURS OF BILATERAL ORIGIN.

To the Editor of The Lancet.

Sir,—In reply to your annotation on my writing *re* bilateral tumours in The Lancet of Feb. 19th, p. 515, I would like to offer a few comments.

In the first place, let me remark that truth unsearched for seldom comes to light, and that facts often appear incredible only because we are ill informed. Even in the learned professions most people nowadays think very little and very seldom; yet all have strong beliefs, opinions, &c., which are determined for them mainly by the bias of the moment, which is often hardly distinguishable from the folly of the moment. The sense of organic continuity which would often suffice to correct these divagations is only too often lacking. Medicine, which is neither an exact science nor a perfect art, has for this reason always been specially prone to this kind of infirmity. Hence Celsus long ago remarked: "It is a good thing to be free from the bias of an education exclusively professional."

The present unsatisfactory condition of medical knowledge is mainly due to impediments of this kind, for faulty bias prevents pathologists and practitioners from assimilating the enormous array of new facts, data, and general conclusions which are now available for progress but unutilised. Owing to the frequency of such lapses the history of medicine teems with might-have-beens. If the best results are to be attained the profession must coöperate and sympathise with its pioneers; for the greatest discoveries fail to develop and fructify when the spirit of the age is apathetic, ignorant, bigoted, "opaque of nature and of soul," money-grubbing, or otherwise out of joint. Moreover, it cannot be too strongly insisted that the science which investigates the facts and laws of disease is something quite different from the arts applied to cure the same, and from the fads and fancies of the latter it must be completely emancipated.

It is to the crosslights derived from the neighbouring sciences, especially from the biological sciences, that we must look for the advancement of medical science rather than to clinical experience. Above all, it is to the biological sciences that we must look for true methods of research rather than to clinical experience, which of itself inevitably tends to empiricism, stagnation, and retrogression. For instance, biologists having shown that life is the continual adjustment of internal arrangements to external arrangements, it follows that disease, which is but an unusual manifestation of life, must be similarly conditioned. Strange to relate, this cardinal law of pathology, which is of universal application, finds hardly any recognition in the writings of modern pathologists. Hence the whole of pathogenesis needs to be rewritten from this standpoint; for the conditions of existence constitute the chief factor in the causation of disease, whatever may be the nature of the spark which precipitates the explosion. The first attempt to apply this method to the investigation of disease is embodied in my recently published book on the Natural History of Cancer, which has thus introduced a new note into pathology.

Now, in the matter of tumour pathogenesis, professional bias has taken the form of a blind, unreasonable, and invincible prejudice in favour of the microbic origin of tumours, which will not tolerate a single suggestion in the contrary sense. The violence and fury of this fanaticism has lately been brought home to me by the stream of abuse which its votaries have poured on my book, because I have declined to believe in their fetich; and this although in my book I have given far more attention to their theories, facts, and experiments than they intrinsically merit, out of deference to their being in what may be called the order of the day.

I fancy some dim echo of this miserable bias must quite unconsciously have affected your correspondent, who has so politely criticised my recent writing and belauded it with manifold dubitations. With regard to the bilateral origin of malignant tumours he says: "There is always a possible objection that the growth on one side appearing first has given rise to the growth which appeared later on the opposite side." Just so; but, as far as I could determine, all cases of this kind have been rigorously excluded from my list. For instance, in Cohnheim's case of bilateral rhabdomyosarcoma of each kidney, the appearances were such that it seems to me unreasonable to doubt the independent origin of each tumour; and this is typical of the cases comprised in my list. But, even supposing that error has occasionally crept in, the number, variety, and authenticity of the instances of the bilateral outbreak of malignant disease there cited is too considerable to be thus explained away, even in the absence of collateral evidence pointing in the same direction, of which, however, there is an abundant store on hand, although, for considerations of brevity, I have not drawn upon it.

Then, concerning the bilaterality of fibromas of nerves, your correspondent says: "We fail to see much force in this example." But surely this multiplicity—when dissemination can be excluded, as it can in these cases—is a remarkable and very striking peculiarity, considering the solitariness of most tumours; and it is just such occurrences that prove tumour formation to be "something more than a solitary local aberration." Moreover, in this affection it has been repeatedly shown that the multiple tumour formation takes place in certain spots where the development of the neurilemma is imperfect, owing to antenatal developmental disturbance; and it is just in these localities that malignant disease is apt to supervene. I submit that such indications, which are by no means rare, are not without a certain significance for the pathogenesis of tumours; and, in nearly all cancers, the impress of the prenatal stamp can be found when it is thoroughly looked for.

I am, Sir, yours faithfully,

Feb. 19th, 1910. W. Roger Williams.

THE STANDARDISATION OF AXIAL NOTATIONS.

To the Editor of The Lancet.

Sir,—Dr. W. Ettles in his friendly criticism of my method of the axial notation of cylindrical lenses in The Lancet of Feb. 26th, p. 602, has overlooked the main point. The question involved is not that of deciding upon or endorsing a "best" method, but of establishing a standard which is known to ophthalmic surgeons and opticians throughout the world. The fact that the Optical Society has adopted the protractor as the basis of its method does not explain why the horizontal has always been made the basal line from which the axes of cylindrical lenses have been delineated. But as between the compass and the protractor, which is the better, more universally known instrument? The answer must be—the compass. The compass, therefore, is undeniably the best instrument upon which to base a standard. The so-called "standard" of the axial notation of cylindrical lenses in this country is not a "standard" recognised by foreign ophthalmic surgeons and opticians. Let us suppose, for example, that a prescription for cylindrical lenses has to be cabled to America. It would be of little purpose sending a message such as the following: R.E. + 3 cyl. axis 30°, L.E.

+ 3 cyl. axis 115°, even if the additional information were conveyed, "British optical standard." But no confusion could arise were the message to be: R.E. + 2 cyl. axis 45° N.E., L.E. + 2 cyl. axis 45° N.W. (mariner's compass), and the same would be true wherever the cable were sent.

I have by this compass method merely indicated the two upper quadrants as N.E. and N.W. But if it were thought that opticians would regard this as insufficiently precise, the remedy is easy by following more closely the direction points upon the mariner's compass. Indeed, going a step further, the ophthalmic surgeon might learn to "box the compass" and prescribe accordingly. He would then have the satisfaction of knowing that his prescription could not be misunderstood by any optician throughout the world. I doubt whether there is any other method at present in use for which the same result could be claimed. It would be interesting to hear some views upon this subject from members of the Optical Society.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 28th, 1910. PERCY DUNN.

To the Editor of THE LANCET.

SIR,—The "Compass" Trial Frame described in your issue of Feb. 19th would, I fear, instead of leaving "no room for confusion" only tend to make "confusion worse confounded" eventually. There would, of course, be no difficulty whatever in reading a prescription with that copy of THE LANCET open before the reader, but as he may not have this, or a similar chart, to guide him, it is quite possible that an outside optician, even with the assistance of a compass, would be puzzled to know whether his prescribed – 2 D. Cyl. Ax. 15° N.E. referred to an axis 15° East of North or 15° North of East. Also, there is no reason whatever why a compass notation should not equally well start from the South, or from the East, or from the West. Many practitioners would doubtless prefer one starting from some other part of the compass.

Then our ophthalmic specialists might learn to "box the compass," and, to prevent misunderstandings, we might eventually have our prescriptions rendered thus:—

D	S
– 1·5 D. sph.	– 1·75 D. sph.
⊂⊃ 2·5 D. Cyl.	⊂⊃ – 3·75 D. Cyl.
3·75° E.S.E. of S.E. by E.	7·5° S.W. by S. of W.S.W.

Personally, I prefer numbering these axes 150° in either case, as they would be shown by the method recommended by the International Ophthalmological Congress. As Mr. Dunn acknowledges, "it is a workable method," and surely it is not now impossible to expect universal agreement on such a simple matter. The only difficulty, to my mind, is the natural dislike of anyone to give up a system he now makes use of, because it is perfectly satisfactory to himself, and the adoption of any fresh system involves some little personal trouble until one becomes more familiar with the method.

I have often thought that a "clock hour" trial frame would have been the best of all, each minute of the frame representing six degrees of our present frame, the intermediate degrees being represented by decimals or by seconds, thus:—

By the international method.		By a clock hour method.
30°	could be termed as wished either	10′ or 40′
45°	,, ,, ,,	7·5′ ,, 37·5′
60°	,, ,, ,,	5′ ,, 35′
90°	,, ,, ,,	0′ ,, 30′
120°	,, ,, ,,	55′ ,, 25′

A "clock hour" trial frame would answer equally well for either eye and would fulfil all the requirements of a "standard" as mentioned by Mr. Dunn.

I do not think, however, there is any need to bring out a "clock hour" system, a compass system, or any fresh system. I hope the international system will be given a fair trial, because those who decline to conform to a system authorised by a congress of such influence as that which met at Naples will probably decline to conform to any system but their own special favourite one.

I am, Sir, yours faithfully,

Feb. 24th, 1910. JAMES P. WALKER, M.D. Durh., D.P.H.

THE POOR-LAW MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—May I point out to Dr. Alan Randle that in most services complaints are only listened to by the authorities when made through one's superior officer. As a matter of fact, an assistant medical officer has little, if anything, to do with the guardians, except when the medical superintendent is away. At Lewisham I rarely saw a guardian, and no occasion for speaking to one ever arose. In a well-organised infirmary the work is not exacting and the opportunities for clinical study are unrivalled. The pay might well be increased, but I can assure Dr. Randle he is well off compared with the majority of those in general practice.

I am, Sir, yours faithfully,

G. F. JONES, M.B., B.S. Lond.,

Formerly Assistant Medical Officer, Lewisham Infirmary.

Blackpool, Feb. 28th, 1910.

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

To the Editor of THE LANCET.

SIR,—In your issue of Dec. 18th, 1909, you give the particulars concerning these Fellowships. The last clause reads as follows: "Fellows are required to devote the *whole of their time to this authorised research*" (italics are mine). The result of the election has now been announced and under the name of each successful candidate is given the *appointment* or *appointments* that he holds. Are we to understand that each candidate will retire from these appointments? If not a most regrettable error has been made by the Advisory Board.

Space will not permit, neither is it necessary, to mention the posts held by each candidate; but taking a few examples selected at random we find that one of the Beit Fellows is a physician to the out-patients at two hospitals at a considerable distance apart, and does his research work at another centre, therefore a large amount of his time is wasted in travelling, also he may have some private practice; another is medical registrar at a London hospital and physician to the out-patients at one of the children's hospitals; another is demonstrator of physiology in one of the medical schools.

There is no reason to object to these or the other appointments, *per se*, because, as is known by experience, the best original work does not come from the paid investigator who does nothing else, but from the man with other work on his hands. What everyone wants to know is why draw up an elaborate list of regulations, however absurd some of them may be, and disregard the most important of all at the first opportunity?

Many men with a sound pathological training, who are now holding posts as demonstrators of pathology, could have been applicants for the Beit Fellowships but for the clause above alluded to. It is for this reason that I have referred to what must appear to all to be a serious hindrance to any scientific advancements which are likely to ensue from this fund.

I am, Sir, yours faithfully,

March 1st, 1910. X.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University Colston Society: Annual Dinner.

THIS dinner, postponed from Founder's Day, Jan. 14th, on account of the general election, was held on Feb. 17th. The ex-Lord Mayor, Mr. Edward Robinson, who presided, spoke of the work done by the society, which at similar occasions in previous years had been the University College Colston Society. During the last year £477 had been collected, and the society had since its foundation raised over £5000 for the University. It had, moreover, kept the University idea before the public and done useful educational work. The Bishop of Bristol following, proposed the health of the guest of the evening, Sir William Ramsay, who replied with an admirable speech. He told various anecdotes of his Bristol experiences in 1880 to 1887, when he was Professor of Chemistry and Principal of University College, and gave some very sound advice with regard to university administration. One of his points was that elections to professorial chairs should be largely left to the faculty in which the vacancy occurs, who should appoint a selection committee to make inquiry by letter and to find out what candidates would be likely to offer themselves. The information thus gathered should be sent to the Senate in the form of a reasoned report. He also pleaded for proper payment of professors and lecturers, a plea that is not out of place in Bristol, and especially in relation to the faculty of medicine. Should a professor be chosen for teaching ability, on account of a capacity for organisation, or because of his aptness for research? Sir William Ramsay said that it was rare to find all three forms of ability in one man, and considered that the greatest weight should be attached to enthusiasm for research He expressed a general disapproval of scholarships, considering that much of the money thus spent might be saved for other purposes if students were able to apply for financial help (to be principally given in the form of loans) by submitting their circumstances to private but impartial inquiry, instead of entering for competitive examinations. Other speakers were the Right Hon. Henry Hobhouse, who alluded to the proposed establishment of aeroplane manufacture in Bristol, and suggested the foundation of a chair of aeronautics; the Lord Mayor and the Sheriff, who replied on behalf of the city; the President of the Bristol Chamber of Commerce, who proposed "The University," and expatiated on the importance of higher education in relation to modern commerce; and the Vice-Chancellor, Sir Isambard Owen, who acknowledged the munificence of the gifts by which the University had benefited hitherto, and "asked for more." The in-coming President, Mr. J. H. Howell, was then conducted to the chair.

Bristol Royal Infirmary.

The annual meeting of the governors of the Bristol Royal Infirmary was held on Feb. 22nd under the presidency of Sir George White. The financial statement showed that during 1909 the receipts were £19,291, and that an unfavourable balance of £2495 remained at the close of the year. The total deficit of the institution is now £3532. The medical report stated that during the year the numbers of in-patients were 3819 and of out-patients 50,195, against 3869 and 49,998 respectively in 1908. The cost of each occupied bed is £59. The chairman stated that the scheme for building new wards, casualty department, and operating rooms opposite the infirmary is now being proceeded with. It will be connected with the old building by subways, and it will be so constructed that in the future, as funds permit, further blocks may be added.

The Medical Inspection of Children in Devonshire.

Mr. G. Adkins, the medical officer of health of Devon, in an interesting address delivered at the annual meeting of the Devonshire Nursing Association held at Exeter on Feb. 22nd, stated that during 1909 the school medical officers of Devon inspected 20,000 children in the 540 schools of the county. Of these 12,000 required treatment. The largest percentage of these were due to pediculosis; these were about 20 per cent. (on analysis this shows that the percentage among boys was 4 per cent., and among the girls 40 per cent., being of course a question of long and short hair). 15 per cent. of the children had defective vision. Adenoids and disease of tonsils 12 per cent. Teeth, 10 per cent. were defective (about 80 or 90 per cent. had disease of the teeth, but only those cases were included as defective when the teeth were causing harm either by indigestion or blood poisoning). 5 per cent. of the children had ear trouble, and tuberculosis worked out at only 0·2 per cent. Mr. Adkins added that he felt sure that if medical inspection was supplemented by judicious treatment, Devon, which last year had 75 per cent. of boys rejected for the navy, would soon see such conditions disappear.

Exeter Sanatorium.

The annual report of the medical officers of the Exeter Sanatorium, which was presented at the last meeting of the Exeter city council, states that during 1909 361 cases were treated, including 34 remaining over from 1908; 184 of these patients came from the county of Devon and 177 from the city of Exeter. 9 patients died from diphtheria, 5 from scarlet fever, and 2 from enteric fever. The report adds that during the last three months of the year the accommodation of the institution was severely taxed in consequence of the outbreak of enteric fever, and also refers to the difficulty of isolating cases in which scarlet fever and diphtheria were running concurrently.

Royal Devon and Exeter Hospital.

The annual meeting of the subscribers to the Royal Devon and Exeter Hospital was held on Feb. 24th. The medical report stated that during 1909 1585 in-patients were admitted, against 1509 in 1908. The average daily number of in-patients was 159, an increase of 2 on the previous year; the average stay of each was 36 days, against 33 in 1908; and the average cost of each occupied bed was £55 18*s.* 11*d.* The out-patients numbered 5500, as compared with 5583 in the preceding year. The financial statement showed that the income amounted to £8595, while the expenditure was £9719, leaving an unfavourable balance of £1124. The total deficit of the institution at the close of 1909 was £2082. The committee states that the Ockenden Convalescent Home at Torquay, which has been acquired through the generosity of Miss Erle, is a great boon to the patients.

St. John Ambulance.

The annual meeting of the Bristol corps was held in the large hall of the University on Feb. 10th, the Lord Mayor being in the chair. The yearly report showed a membership of 353, an increase of 59 since last year. The number of accidents attended was 1166; removals made were 1422; 152 fires were attended, and 2905 cases not included under the above headings, making a total of 5645 cases. A nursing division has been introduced and the corps has come into the possession of a portable cottage hospital. The total receipts for the year were £1178 12*s.* 6*d*, which, with last year's favourable balance of £151 14*s.* 5*d.*, exceeded the total expenditure by £222 5*s.* 6*d.* The Lord Mayor, the Sheriff, Dr. C. A. Hayman, and Sir George White also spoke.

Care of the Feeble-Minded.

On Feb. 23rd a meeting was held at the Bristol Council House, presided over by Alderman Cook, chairman of the Bristol Education Committee. Mrs Hume Pinsent, a member of the Royal Commission on the Care and Control of the Feeble-Minded, gave a very interesting address, and Dr. J. Michell Clarke proposed a motion calling for legislation on the lines recommended in the report of the Royal Commission.

March 1st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Prevalence of Anthrax.

THE prevalence of anthrax was discussed at a meeting of the Cheshire Chamber of Agriculture on Feb. 21st at Crewe, and there was a consensus of opinion as to the seriousness of the position, both for farmers and the public.

The Risks of Post-mortems.

At a recent meeting of the Manchester Infirmary Board a legacy was received from the estate of the late Mr. G. W. Smith, the object to which it was to be allocated being somewhat unusual. The amount was a few shillings less than £2340, the income from which was to be devoted, at the discretion of the medical board, to the assistance of any member of the surgical or medical staff of the hospital suffering illness through injuries sustained in the course of post-mortem examinations or operations. A donation was also received from Mr. George Spregelberg to endow a bed for the treatment of cancer patients.

Milk.

The council of the Lancashire Farmers' Association met at Preston on Saturday last and passed a resolution that every tin of condensed milk made from machine-skimmed milk should have printed on it in bold type, "Unfit for infants and invalids." No one will dispute the broad accuracy of this statement, but the chairman went rather too far in saying that skimmed milk "contained *no* nourishment," and that "everything possible should be done to prevent it being sold to persons ignorant of its bad qualities." Skimmed milk has its uses.

Houses and Slums.

Wherever we look in our towns in this district, and, unhappily, the same may no doubt be said of many other districts, we see the terrible effects of overcrowding, dirt, and destitution. An inquest was held a few days ago at Rochdale on a child, aged 2 years, when it was stated that the father had lost during the last month his wife and two other children. The coroner spoke strongly on the case, and said that in his opinion the child had died owing to the insanitary condition of the house, and Dr. W. J. Kerr said the death was indirectly due to the conditions under which the child had lived. The jury added a rider to this effect. At Oldham about the same time, some instances of remarkable overcrowding came under the notice of the sanitary and building committee. In one house 11 persons lived—two families and a lodger. In another there were nine persons, and each house had only one bedroom and no back door. In some parts of Manchester things are no better. Within a few minutes' journey from the town hall there is a small square with broken flag pavement, allowing pools of watery filth to stand, and on one side a solitary sanitary convenience for the four dwellings in the square. These four houses have four or five rooms, each room occupied by a family. In one room on the ground floor, that was once flagged, the plaster was falling from the ceiling. There were a rough table, a part of a chair, and a bedstead with clothes on it that "made the flesh creep," says my information. This "furnished room" had two or three cheap pictures, too dirty for their subjects to be distinguished, and over the doorway was nailed the greeting, "A Joyous New Year." The weekly rent was 5*s.* 3*d.* Up a narrow dark staircase there was a small landing, with a room on each side, also "furnished." One had three brick walls and on the fourth side a barred wooden partition. A man, his wife, and three children dwelt in this room, for which the rent was 5*s.* 10*d.* An old couple lived in the other, a rather smaller room, for which they paid 5*s.* 3*d.* per week. The woman was thin and pale, and the man looked as if death were not far off. Consider the sanitary and moral dangers of such places!

March 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Ayr County Hospital.

THE annual report of Ayr County Hospital just issued discloses a much more satisfactory state of affairs than existed a few years previously. In the first place, more than a year ago there was a reorganisation of the consulting staff, and the new arrangement has been found to work extremely well. In addition, it will be recollected that two years ago, owing to lack of funds, the directors had no option but to close two of the wards. At that time an appeal was issued and an attempt made to secure a larger income for the hospital. It is satisfactory to know that that appeal has been so far satisfactory that the wards which were closed are now to be reopened. The directors have also decided to spend £1000 on a new heating system. The total ordinary income for the year amounted £2966, an increase of £285 over the previous year. The ordinary expenditure exceeded this sum by £469. On the other hand, the extraordinary income consisted of legacies amounting to £2411. In addition to these legacies the directors received during the year £1400 towards the endowment fund. During the year the number treated in hospital was 703 and at the dispensary 1312.

The Mixing of Babies in Hospital.

A case of mistaken identity regarding two children sent into the middle ward of Lanark Fever Hospital came up for discussion last week in the ward district committee meeting. The incident occurred when the hospital was exceptionally busy. Two children were sent into a fever ward on the same day within a few minutes of each other. One of the children, certified by the family medical attendant to be suffering from scarlet fever, was found not to be suffering from fever at all, and it was while removing this child to an isolation ward that the nurse lifted the wrong name-card. The father came up and took the wrong child home without noticing the mistake. On their arriving home, however, the mother thought that something must have happened to her own baby, and, spurning the changeling, she hastened to the hospital, where she was greatly relieved to find her child still in existence and doing well.

Marine Biological Station at Millport.

The general committee reports that the facilities for study and research at Millport have been well maintained throughout the year. The steam yacht *Mermaid* was not put into commission during the year, no funds having been available for manning and working her. There was, however, no lack of material for the station, the superintendent having been able to get what he required by means of the new sailing-boat purchased early in the year. The financial year closes with a deficit of £48, as compared with a deficit of £117 at the close of the previous year. A number of learned societies and other bodies help to support the association by contributions to the funds, as they recognise that the association does a good work in providing an opportunity for those interested in biological work to prosecute their studies.

Legacies to Perth and Dundee Royal Infirmaries.

At a meeting of the directors of the Dundee Royal Infirmary held on Feb. 24th intimation was made of a donation of £3000 to the general funds. This handsome sum has been allocated to the institution by the trustees on the estate of the late Mr. Chas. Anderson of Fettykil. A similar sum has been donated by the trustees to Perth Infirmary.

Aberdeen Royal Hospital for Sick Children: Annual Report.

The annual report of the Aberdeen Royal Hospital for Sick Children states that during the past year 2518 cases have been treated—734 as in-patients and 1790 as out-patients. The average stay of each in-patient was 37·29 days. 52 patients were sent during the year to the Zidda Convalescent Home, Culter. The ordinary expenditure for the 12 months was £3096 12*s.* 1½*d.*, being an annual average expenditure per bed occupied of £41 5*s.* 11¾*d.* The ordinary income amounted to £1895 3*s.* 3½*d.*, or £1201 8*s.* 10*d.* less than the ordinary expenditure.

Aberdeen Deaf and Dumb Society.

The annual meeting of the Aberdeen Deaf and Dumb Benevolent Society was held in the institute, Aberdeen, on Feb. 24th. The secretary intimated that a new institution was now in the course of erection. It would contain in addition to a committee-room, a chapel for the Sunday services, a reading-room with books and periodicals, a large hall for lectures and social meetings, a room for sewing and other classes, two bathrooms, and on the top floor a billiard room. A sum of £500 has been given by the Crichton trustees and a similar sum by the Clark's trustees, so that the new building will be erected free of debt.

March 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Temperance Movement in Ireland.

THE vigour of the temperance movement throughout Ireland forms one of the most prominent features of Irish life at present. The annual meeting in connexion with the Father Mathew Hall, Dublin, which was held last week, was large and represented all classes of the community. The report for the year 1909 was read, and the important fact that the Irish national holiday was utilised to hold a temperance banquet in the Mansion House was recalled with great enthusiasm. The united action of the Catholic hierarchy of the Western Province gave very effective results in the same year, which have continued to increase ever since. A notable event, too, was the temperance demonstration held in Armagh under the presidency of the Catholic Primate, Cardinal Logue, at which more than 20,000 persons were present. The endeavours of the leaders are at present largely directed towards employment in labour. A register of unemployed members is kept, and it is argued that employers can best serve themselves, as well as help the temperance cause, by giving a preference to total abstainers, "men whose physical and mental energies have not been impaired by alcohol." The enlargement of the premises of the Father Mathew Hall has resulted in an overdraft of £548 at the National Bank, but it is hoped that the present year will liquidate that small liability. One of the speakers observed that "there was no manufacturer in this country who would not undertake to add 30 per cent. to his wages bill if he could get rid of 30 per cent. of the consumption of whisky among his workers."

St. Patrick's Nurses' Home, Dublin.

The annual meeting of the St. Patrick's Home "for supplying trained nurses to the sick poor in their own homes" (affiliated with the Queen Victoria Jubilee Institute) was held last week in the Royal College of Physicians, Dublin. The chair was occupied by the Protestant Archbishop of Dublin, though the work is not limited by any sectarian considerations. The staff consists wholly of Queen's nurses and of candidates for admission to that institute, while the rules strictly forbid any meddling with the religious opinions of patients or their families. That a person is sick and poor is the only qualification for receiving the attention of the nurses. When Her late Majesty Queen Victoria had to decide what to do with the £70,000 that had been subscribed as a Jubilee offering she decided that the best use she could make of it was to maintain trained nurses to nurse the sick poor of the kingdom. The question of how to start the work in Ireland was then raised, and when inquiries were made it was found that the St. Patrick's Home had been doing for years in Dublin exactly the kind of work which Her Majesty had contemplated. The report for 1909 showed that 2300 cases had been attended during the year and that 4500 visits were paid by the nurses. Sir Charles Cameron proposed the adoption of the report, which was seconded by Mr. A. J. Horne, President of the Royal College of Physicians, and carried unanimously.

The Royal Commission on Sewage Disposal at Belfast.

With reference to the disposal of the sewage of Belfast the Royal Commission on Sewage Disposal has made to the city council the following suggestions :—

> 1. That the whole sewage of the city should be brought to one outfall at the northern side of the river, and that no discharge should take place on the south of the River Lagan.
>
> 2. That not less than three times the dry weather flow should be passed through the sedimentation tanks under the conditions laid down by the Local Government Board in their letter of April 27th, 1909.
>
> 3. That the existing wooden chute is inefficient, and that a properly constructed culvert or culverts should be provided capable of delivering the effluent through the sedimentation tanks during the first three and a half hours of the ebb tide at a point near to the outlet of the existing chute.
>
> 4. That as far as practicable storm outflows should be limited in the sense recommended in paragraph 294 of the fifth report of the Commission.
>
> In the opinion of the Commission the corporation should carry out the above recommendations at the earliest possible date.

The Commission, in its communication to the authorities, suggests as desirable a conference with the Belfast Harbour Commissioners with a view to the carrying out of a scheme of reclamation of the county Down shore.

The Maternity Hospital, Belfast.

The medical report presented by Sir John Byers at the annual meeting on Feb. 24th showed that in the number of both intern (580) and extern (575) patients the past year constituted a record in the work done. The mortality was 0·19 per cent.

The Ulster Medical Society.

At a meeting of the Ulster Medical Society on Feb. 24th in the Medical Institute, Belfast, Dr. J. S. Darling read notes of two cases of Coxa Vara. Mr. Andrew Fullerton read a paper on Tubercular Kidney, with full details of 23 cases. For the information of those present he had prepared a carefully tabulated list of all the cases, giving complete information, among other points, as to the cystoscopic appearances and information obtained by the ureteral catheter. An interesting discussion followed, in which Sir John Byers, Dr. A. Dempsey, Dr. Darling, and Dr. Howard Stevenson took part.

Nurses for the Sick Poor.

The annual meeting of the Belfast Society for Providing Nurses for the Sick Poor was held on Feb. 25th, when it was reported that the total number of cases nursed during the past year had been 1521, an increase of 135 over the previous year. A new departure has been made in the nursing of the children of two of the large public schools.

Obituary: George A. Waring, L.R.C.P. & S. Irel.

The death has occurred in tragic circumstances of Mr. George A. Waring of Lisburn, county Antrim. It would appear that he left Lisburn on Saturday, Feb. 19th, to pay a visit to some property which he owned in the country near Glenavy. He was last seen alive on that day between 2 and 3 P.M. at a house where he had called. Later his cap, neckerchief, and empty field-glass were found on the opposite side of a small river, with a plank footbridge, swollen by the recent heavy rain. Here there is a bank 15 feet deep to the water edge and there were marks on the slope as if a body had rolled down. About a mile from this spot the deceased's body was found later, but neither his watch nor great coat was recovered. At the inquest the jury returned a verdict of "Accidental drowning," and expressed their deep sympathy for his widow, family, and relatives. Mr. Waring was only 46 years of age. He obtained the L.R.C.P. & S. Irel. in 1888. He was the youngest son of Mr. Lucas Waring, solicitor and land agent, of Lisburn. Succeeding to ample means, he was not obliged to practise. Great sympathy is felt for his widow and three daughters.

Ballymena Union Infirmary.

At a meeting of the Ballymena board of guardians held on Feb. 26th a letter was read containing a report by the Local Government Board medical inspector, Dr. E. C. Bigger. It would appear that the medical officer of the infirmary attributed the occurrence of erysipelas to defects in the sanitary state of the place. After condemning the defects in the building, Dr. Bigger wrote that, having regard to its age and its defects, the guardians would be well advised to waste no more time in trying to improve it, but would be wiser to proceed to erect a new infirmary on modern lines on a better site in their own grounds. The report has been referred to a committee.

March 2nd.

PARIS.

(From our own Correspondent.)

Professional Etiquette and the Medical Work of the Education Department.

The general council of the district medical societies has expressed strong disapproval of a circular recently issued by the Ministry of Public Instruction relative to the health of the pupils in elementary schools, especially as regards the care of their teeth. The council takes the view that this circular is an encroachment on the rights of family practitioners, and a deputation has been sent to the Ministry of Public Instruction to protest against it. This deputation reminded the Minister that it is the duty of the State to see that the sanitary condition of the schools is above reproach and to protect the pupils entrusted to its care against any danger of infectious disease, but that as regards the health of individual pupils the State is authorised only to deal with cases of acute illness of which the parents are not yet cognisant, and has no authority whatever to make inquiries as to constitutional diseases which the pupils may suffer from. This is a matter for the parents only, especially when the children belong to well-to-do and intelligent middle-class families who ought to have the control of their children in their own hands. The medical profession would not allow the work of family practitioners to be called in question by a medical man appointed by the school managers, and yet this irregular state of matters is explicitly arranged for in the above-mentioned circular in reference to the care of the teeth. A protest was made against the introduction of a medical history sheet on which would be entered all the constitutional defects of the pupils. It was said that in practice this information would become disclosed, the rule of professional secrecy would be broken every day, and the reputation of families would suffer. The ministerial circular, moreover, contains advice on the hygiene of the mouth, together with the names of pharmaceutical preparations to be used and the doses of them, a system which is to some extent an illegal practice of medicine, and in any case tends to establish official methods of treatment in comparison with which the public would regard other methods of treatment as inadequate and unsatisfactory.

A New Antityphoid Vaccine.

At a meeting of the Academy of Sciences held on Feb. 14th Dr. Vincent, professor in the military hospital of Val de Grâce, made a communication relative to the immunisation of the human subject against typhoid fever by means of a new antityphoid vaccine. He said that the vaccines or antigens which had shown themselves the most active in his experiments were : (1) living bacilli ; (2) bacilli killed by a temperature from 53° to 55° C. ; and (3) the autolysate at 37° C. of a 24-hours culture of bacilli grown on agar-agar. The autolysate was centrifuged and sterilised by means of ether. Whatever vaccine might be employed three inoculations were necessary to ensure immunity. The most active "living vaccine" could not be recommended for use on the human subject, notwithstanding the results obtained by Castellani, because it might prove to be dangerous. The "dead vaccine" (Pfeiffer and Kolle, Wright, and Leishman) has shown itself very protective in the case of animals and has yielded favourable results in the case of German and English soldiers in the colonies. It often, however, causes very disagreeable symptoms, such as sharp local pain, œdema with lymphangitis, and pyrexia, which have hitherto prevented an extensive use of it. Vaccine III., suggested by Dr. Vincent, showed in his experiments a high protective power. Containing extracts of living bacilli which were in possession of their normal biological properties, not attenuated by heat, this vaccine exhibits some of the qualities of the most active of these substances—namely, the "living vaccine," but without any of its accompanying disadvantages, such as sharp pain and pyrexia. In animals it invariably produced lasting immunity. Moreover, in consequence of their comparatively mild action the products of autolysis, unlike some other substances of the same class, did not produce the negative phase which was so dangerous during the prevalence of an epidemic, because the vaccinated individual remained for one or two weeks hypersensitive to infection by Eberth's bacillus. Dr. Vincent, therefore, concludes that the best method for the antityphoid vaccination of patients consists in the injection of "autolysants" of living bacilli.

After the Floods.

It is more than a month since the Seine ceased to overflow its banks, and now the river rises and falls only a few centimetres daily, according to the amount of the rainfall. But for some time there has been no water in the streets of Paris, except for a few centimetres in one or two roadways of the low-lying quarters of Passy and Bercy. Only suburban districts, and chiefly Alfortville, are still in any distress. The telephonic and electric services have been restored for some time, and even the Metropolitan Railway has resumed over a considerable part of its course its usual service of trains. The only unfavourable tidings of the health of Paris emanate from the foreign journals. In these quarters there have been exaggerations which, after exciting in the first place a vast movement of charitable sympathy that touched us all deeply, now threaten, if they should continue so far to outstrip the truth, to do as much harm to the city of Paris as the floods themselves have caused. Many of these foreign newspapers make out that Paris is still submerged in the river and ravaged by epidemics. Some of the Riviera hotels, in their anxiety to keep their customers for a longer time, have the impudence to hang up notices announcing that trains are not certain of arriving in Paris. As to the sanitary state of the city, not only have all the predicted epidemics failed to appear, but the statistics published each week, as is customary by the Municipal Bureau of Health, show that both the disease- and death-rates are actually below what they have been for corresponding periods in preceding years. This is not as paradoxical as it seems, for it shows that the public have been taking full advantage of the advice which has been given them for the preservation of their health and have thought more about sanitary matters in general than has been their wont.

March 1st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Ferment Treatment for Tuberculosis.

AT a recent meeting of the Gesellschaft der Aerzte Dr. Schiller read a paper on the Treatment of Tuberculous Lesions of the Soft Tissues by Means of Ferments. Tuberculous pus is very poor in ferment bodies, since it contains a very small number of polynuclear leucocytes, which are the ferment carriers. Dr. Schiller has evolved the following method of treatment. He punctures the abscess, removes the pus by aspiration, and then injects a 1 per cent. sterile solution of trypsin into the abscess cavity. The trypsin digests the albuminous bodies and allows of the immigration of leucocytes. Dr. Schiller has treated a large number of cases in this way, performing the aspirations and injections daily. Altogether from three to four injections were sufficient to bring about a cure in many instances. Under the influence of the injections the pus changes its character and consistency, granulations appear, and the secretion diminishes. The treatment gives rise to very little discomfort; it is not more painful than any other injection method, especially the one used mostly on the continent (iodoform-glycerine emulsion). Fever may appear at the commencement of the treatment, but it is generally of no importance. Besides tuberculous abscesses, serous inflammations, sero-synovitis of the knee, hydrocele, and bursitis have been treated by this method, which, however, failed to give good results in cases of tuberculous joints.

A New Radium Spring in Joachimsthal: Sale of Radium Salt.

During a search by the Government for radio-active waters in Joachimsthal a new and very powerful spring has been discovered, which gives off a quantity of 15 litres (30 pints) per second, has a temperature of 19° C., and is said to be the most powerful natural radio-active water in the world; its voltage has been stated to be 24,000, but exact scientific figures are as yet lacking. The quantity of water will be sufficient to enable the existing bathing establishment to give another 150 baths daily, altogether making possible about 500 baths per day. The bathing is now under the control of a public officer of health, and the efforts of the medical profession have averted the danger of this important health resort coming under the influence of unscrupulous speculators. Whilst last year the arrangements for bathing in the radio-active waters were rather primitive, this year first-class accommodation for patients has been supplied by the corporation, and health-seekers can enjoy their benefit all the year round. The valuable products obtained from the pitchblende of Joachimsthal are also controlled by the Government, which has taken the sale of radium into its own hands. The substance will appear in three different qualities (or strengths): 10 per cent., 25 per cent., and 50 per cent. radium-barium-chloride. It is sold in small round metal capsules, the floor of which consists of lead. This has a small square depression in which the radium is deposited. A sheet of mica closes this depression on the outside, so that it can be covered by another plate of lead. It is thus possible to use the salt for exposures without opening the capsule. An official hall-mark, as a proof of the genuineness and correctness of percentage and weight, will be impressed on the brass capsules. The price per milligramme (1-60th of a grain) has been fixed at 400 kronen (about £16 16*s*., or £1005 a grain).

Health Statistics of Labouring Classes in Vienna.

For several years the "Arbeiter Kranken-Kasse" (Working Men's Friendly Society and Sick Club) has issued regular reports on the health of its members, which are a very useful means of judging the average health conditions of the working classes of this city. On Jan. 1st, 1909, the number of the members of this sick club was 320,000, or 16 per cent. of the total population of Vienna. The report No. 1 gives the figures for December, 1909. There were 9092 members on the sick list unable to earn their regular living. The majority were suffering from diseases of the respiratory and circulatory systems; tuberculous affections of the lungs and larynx accounted for 800, other affections of these organs for 1346, tonsillitis for 450, pneumonia for 42, rheumatism for 805, and cardiovascular affections for 510 cases. Affections of the alimentary canal were somewhat fewer than usual, their number being 626. A remarkable drop was noticed in accidents during work, perhaps owing to the three holidays which were celebrated in December. The number was 1638, against 1969 in November. The number of deaths during the last month of 1909 was 274, of which tuberculosis claimed 40 per cent., neoplasmata 5 per cent., whilst 2 per cent. were due to accidents and 4 per cent. to suicide. The report No. 2 for the whole year 1909 is still more interesting. There were altogether 115,530 persons on the sick-list as unable to earn their regular income. The numbers are distributed for each quarter of the year, showing a constant fall in the rate of morbidity—36·0, 29·0, 22·0, and 13·0 per cent. respectively. The most important disease is still tuberculosis, which alone claimed 9·5 per cent. (or 11,163) of the patients, whilst other respiratory organic diseases caused another 13·0 per cent. of all the cases. 20,257 accidents, or 17·5 per cent. of all notifications of disease, were observed in this one year. The number of deaths in 1909 amounted to 3382 (out of 320,000 members). Here, too, a constant fall is evident if the quarters of the year are considered separately, January–March showing 944 deaths, and October–December only 734. 44·0 per cent. of all deaths were due to tuberculosis, 12·0 per cent. to cardio-vascular disorders, and 3·0 per cent. to accidents. The figures show that tuberculosis is the worst danger and that the movement for erecting sanatoriums for consumptives is a perfectly business-like means to reduce the appalling expenditure due to mortality and also morbidity from this source.

Feb. 28th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Echinococcus Disease in Canada.

BEFORE the Section on Surgery of the first meeting of the Medical Associations of the Pacific Northwest, held at Seattle, Washington Territory, U.S.A., in July last, Dr. Robert E. McKechnie (Vancouver) read a paper on this subject, particularly confining himself to the incidence of the disease in British Columbia. In order to incorporate in his paper statistics from all over Canada Dr. McKechnie addressed letters to the leading hospitals of the Dominion. From the superintendent of the Toronto General Hospital it was learned that there had not been a case of echinococcus in the records of that institution. The Royal Victoria Hospital, Montreal, reported two cases in the last 15 years. Winnipeg did not send any statistics to Dr. McKechnie, although he learned later that they reported about 160 cases, 100 occurring in the service of the Winnipeg General Hospital. In America the largest personal list of cases reported was that of Dr. Alexander Hugh Ferguson of Chicago, but before going to Chicago Dr. Ferguson was a practitioner in Winnipeg, and on the shores of Lake Manitoba there is an Icelandic settlement from which practically all the cases have been drawn. Dr. McKechnie wrote to all the practitioners in British Columbia for reports of cases. New Westminster reported 1 case, Victoria 4 cases, and Vancouver furnished 7 cases. Of the 12 cases recorded in British Columbia 6 were male and 6 female. Five were from the British Isles, 4 from Iceland, 1 from Finland, 1 from Eastern Canada, and the origin of one not stated. The ages varied from 20 to 55. Eight of the cases had the liver as the seat of the disease. One gave a duration of 34 years. At the annual meeting of the Canadian Medical Association held in Winnipeg last August Dr. B. J. Brandson, attending surgeon to the out-patient department of the Winnipeg General Hospital, read a paper on the same subject and reported 100 cases diagnosed during life and one case found post mortem which had occurred in the service of this hospital. Of these 100 cases 96 were born in Iceland, 2 in England, 1 in Russia, and 1 in the province of Ontario, Canada, shortly after the arrival of its parents in that province. This was the only case of a native-born Canadian treated in the Winnipeg General Hospital. The longest time elapsing before arrival in this country and admission to the hospital was 25 years. Of the 100 52 were males and 48 females, although most Icelandic observers have noted the incidence of the disease to be more in females. The youngest patient in this series was five years old and the oldest 67 years of age, whilst more than half of them were between the ages of 20 and 40 years. 80 suffered from hydatids of the liver alone. Of the total number 70 were discharged cured or improved, 18 died, 4 were discharged unimproved or incurable, and 8 for various reasons were not treated. Ten years ago before the Toronto Clinical Society the late Dr. George A. Peters of Toronto reported a case of hydatid of the pancreas upon which he had operated for Dr. McKinnon of Guelph, Ontario. This young man was of Spanish origin, attending the Agricultural College at Guelph, from the Argentine Republic, South America.

Typhoid Fever in Montreal.

Montreal is recovering from an extended outbreak of typhoid fever, due to the disgraceful character of its drinking water. So intense did the situation become, the hospitals being all taxed beyond their capacity, that it became necessary to call upon the city council to establish and maintain a temporary emergency hospital. This the council refused to do and the matter was taken up by the citizens, who were materially aided by Lord Strathcona's immediate contribution by cable of $25,000, and promise of $100,000 if a fund for a purer water-supply were started by the citizens. Dr. J. J. Guerin in the recent municipal elections ran for the office of mayor and was elected by a large majority; and another prominent member of the profession, Dr. E. P. Lachapelle, was elected a member of the new Board of Control.

Violent Deaths in Montreal during 1909.

Some 800 cases of violent and sudden death occurred in Montreal during the year 1909. This number is larger than in recent years, but the majority of the cases were due to natural causes. There were no direct cases of murder during the year, but there were some half-dozen cases in which a verdict of manslaughter was returned. The suicides numbered seven. Street-car and railway accidents claimed the greater number of victims, there having been over 100 deaths caused by trains about the city and by the electric cars. Deaths by electrocution and by drowning were also high, reaching 60. Only three deaths occurred in factories, whilst fires caused the loss of 20 lives, and asphyxiation by gas five.

A New Social Medical Society in Toronto.

Dr. G. Stirling Ryerson, who took a prominent part in organising a new social society in Toronto amongst the medical fraternity, has been elected its first president, with Dr. H. J. Hamilton as secretary and Dr. E. E. King as treasurer. The society is limited to 60 members, who must have been at least ten years in practice, and was started with the object, as the president stated in his address at the first meeting on Jan. 14th, of providing for a more extended measure of social intercourse amongst its members. The society, which is called the Æsculapian Society, will meet during the winter months six times a year, and the proceedings are mainly of a social character. At the first meeting the Hon. Justice Riddell delivered an address on the relation of law to medicine, and at the meeting in February Dr. Rupert Mitchell, now of Toronto, who was with the Shackleton expedition, will be the speaker.

Toronto General Hospital.

The annual meeting of the Toronto General Hospital was held early in February, when it was reported that during the last hospital year there were treated in the institution 5104 patients, 4522 of them having been admitted during the year. There were 302 births in the maternity wards. Of the 5104 patients, 4146 came from Toronto and 16 from the United States, the balance from other places in Ontario and Canada. The average stay per adult patient was 23½ days, giving a total of 110,905 patient days. The expenditure in maintenance was $151,971.61, giving a daily average cost per adult patient of $1.3702. The total revenue from endowment income account was $34,828.58. The total assets now amount to $1,108,098.49, and there were liabilities outstanding of $30,362 68. The report of the pathologist showed that the number of surgical specimens examined was double that of the previous year, and that in 296 deaths in the institution post-mortem examinations were held on 118. An increase of 482 patients was reported over the previous year. In the extern midwifery department 94 patients were treated by students registered at the hospital without any mortality. In the new nervous wards 74 patients were treated, of whom 49 were discharged, 16 having recovered, 30 improved, and 3 unimproved. Progress has been made towards the erection of the new hospital to the extent that the ground has all been cleared of the buildings upon the site, and the work of erection is to commence early in the spring.

The Conservation of Human Health.

Several months ago the Dominion Government appointed a special commission on the Conservation of the Resources of Canada, with the Hon. Clifford Sifton, M.P., as chairman thereof. One of the sections of this commission will be known as the Public Health Section, of which section Mr. E. B. Osler (brother of Professor Osler), will be chairman. They will proceed to evolve a plan whereby the health of Canadians may be preserved and will probably direct their attention to the special subject of tuberculosis. In the past the Government has done a great deal in the way of prevention of disease amongst animals, but outside of making an annual grant of about $5,000 to the Canadian Association for the Prevention of Tuberculosis nothing of very great moment has been done towards conserving human health. It is expected in medical quarters that this section on public health will pave the way towards a department of public health for the Dominion.

Ontario Medical Council.

The Ontario Medical Council is approaching the Ontario Legislature now in session, looking for an amendment to the Ontario Medical Act in the direction of giving to the Council disciplinary powers over medical men guilty of conduct disgraceful in a professional respect at once on satisfactory evidence instead of at present waiting until the annual meeting of council, which is generally held in July of each year. At a recent special meeting of Council two names were ordered to be removed from the Register, and it is felt that the Council could deal wisely with these cases immediately, and thus save the uncalled-for criticism it from time to time receives in the public press for not acting in advance of even the criminal courts.

Deaths of Prominent Physicians in Canada.

Death has been busy amongst the prominent physicians of Canada early in 1910, including two well-known veterans of the schools. Dr. James H. Richardson (Toronto) died on Jan. 15th, at the age of 86 years. Of him a separate obituary notice is sent (see p. 688).

Dr. Arthur A. Browne, after a year's serious illness, died at the end of January in Montreal. He was one of the best known practitioners of medicine in that city, and was looked upon as the dean of the medical profession of Montreal. The late Dr. Browne was born in the province of Quebec in 1847, and was graduated in arts and medicine from McGill University in 1872. He then went abroad for some years and studied at Dublin and Vienna. On his return to Montreal he joined the staff of McGill's medical faculty as a professor of clinical medicine, but a rapidly increasing practice caused him to give up teaching medicine.

Dr. Uzziel Ogden (Toronto) died in January, aged 82 years. He began his medical studies in Toronto in a room over a driving shed, with but one lecturer, and saw that medical school develop to one of the greatest on this continent, with a Medical Faculty of over 60 professors and lecturers and a medical student roll of from 500 to 600. He, too, was an early pupil of Dr. Rolph. He successively held the chairs of physiology, materia medica and therapeutics in the University of Toronto, but ended as professor of obstetrics and gynæcology for the last 17 years of his teaching life. He was one of the forerunners in Canadian medical journalism, and was for a time associated with Dr. Rolph and Dr. Fulton in the conduct of *The Canada Lancet*, the oldest medical journal in Canada. He was the founder, and for many years the editor, of the *Canadian Journal of Medical Science*, now the *Canadian Practitioner and Review*.

Toronto, Feb. 5th.

PELLAGRA INVESTIGATION COMMITTEE.—The officers of this Committee have now been selected as follows: Chairman, Sir T. Lauder Brunton; vice-chairman, Dr. F. M. Sandwith; honorary secretary and treasurer, Mr. J. Cantlie; advisory subcommittee, Mr. E. E. Austen, Professor E. C. Bayly, Sir William Leishman, Dr. J. M. H. MacLeod, Sir Patrick Manson, Sir John McFadyean, Dr. F. W. Mott, and Professor Ronald Ross. The field-workers will be Dr. Louis W. Sambon, of the London School of Tropical Medicine, whose work is well known on the subject, and Captain J. E. Siler, with Mr. Arthur Dawson-Amoruso and Mr. G. C. C. Baldini as assistants. Captain Siler is a distinguished American officer who has worked and written on the subject of pellagra in the United States, and has been studying tropical medicine lately at the London School. Mr. Baldini, a medical student at St. Bartholomew's Hospital and a native of Italy, will help with his knowledge of the language and localities when the field-workers start their labours in a pellagrous area in Italy; and Mr. Dawson-Amoruso, also an Italian scholar, is an expert microscopist. The Standing Commission for the Investigation of Pellagra in Bergamo has promised the inquiry every assistance, which starts, therefore, under favourable auspices.

Obituary.

JOHN W. TAYLOR, M.D. BRUX., F.R.C.S. ENG., M.SC. BIRM.,

PROFESSOR OF GYNÆCOLOGY IN THE UNIVERSITY OF BIRMINGHAM.

WITH much regret we record the death of Dr. John W. Taylor, professor of gynæcology in the University of Birmingham, which occurred at his residence, 22, Newhall-street, Birmingham, on Feb. 27th, after a prolonged illness from heart disease and its attendant complications.

Dr. Taylor was born at Melksham, Wiltshire, in 1851, his father being the Rev. James Taylor, a Suffolk clergyman. He received his early education at Kingswood School, later becoming a student at Charing Cross Hospital, where he worked with much diligence. He duly became assistant demonstrator of anatomy at the hospital and then held resident appointments both on the medical and surgical sides. In the year 1877 he took the degree of M.D. Brussels, and in the same year he obtained the F.R.C.S. Eng., migrating from London to Birmingham in 1878. In Birmingham he commenced practice as medical officer to the Provident Dispensary at Camp Hill, entering also into private practice in the same locality. But the professional aims which he had set before him were not fulfilled in the duties of such a career, and he early resolved to forsake private work for gynæcology, in which he believed that his training and abilities could find a wider scope. He began by securing in 1884 an appointment as honorary surgeon to the Birmingham and Midland Hospital for Women, and henceforth devoted his full powers to his special subject, this post affording him ample opportunities of studying. In a short time he became assistant to Mr. Lawson Tait. Though differing widely in many ways of temperament and character from that remarkable man, there is no doubt that the association with Tait, the contact with his genius and originality, and the chances afforded by association in his vast surgical practice had an important influence upon Dr. Taylor. When Tait died in June, 1899, he held the post of professor of gynæcology at Queen's College, Birmingham, and here Dr. Taylor succeeded him; and when the University of Birmingham was opened in the year 1900 Dr. Taylor became the first professor of the same subject therein. He was President of the Midland Medical Society 1897–98, and Vice-President of the Obstetrical Society of London in 1904. He was also consulting surgeon to the Wolverhampton Hospital for Women, and consulting gynæcological surgeon to the Birmingham and Midland Skin and Lock Hospital.

For 25 years Dr. Taylor maintained an active interest in the Midland Hospital for Women and did valuable work upon the staff, not only scientifically but in administration and detail. It was, therefore, with great regret that his colleagues learned that owing to failing health he felt compelled, while still in the prime of life, to resign his appointment. Finding from the same cause that he was unable to continue his lectures at the University, he also resigned his professorship a month ago in the hope that with more time and care he might obtain some degree of restoration of health. Unfortunately, this expectation was not realised, for with alternations of improvement and relapse he gradually lost ground and died as above stated.

Dr. Taylor made many valuable contributions to the literature of gynæcology. Jointly with Dr. Frederick Edge he translated and edited Duhrssen's "Manuals of Gynæcological and Obstetric Practice." In 1898 he delivered the Ingleby Lectures on Extra-uterine Pregnancy, which were published in full in THE LANCET, and in the following year he issued his work upon the same subject entitled, "On Extra-uterine Pregnancy: a Clinical and Operative Study." This work at once disclosed him to the whole medical profession as a leading authority upon the subject, and its teaching everywhere met with high approval. He also contributed the article on Disorder and Diseases of Pregnancy to Quain's "Dictionary of Medicine" (1902 edition), and wrote many articles on allied subjects in the *British Journal of Gynæcology* and in the *Birmingham Medical Review*, as well as in THE LANCET and the *British Medical Journal*. On his election as President of the British Gynæcological Society in 1904 he gave his inaugural address on the Diminishing Birth-rate, a subject in which he was much interested. Dr. Taylor's literary attainments were, moreover, not confined to professional matters. In 1906 he published a work of considerable interest, "The Coming of the Saints," to which he gave a supplementary title, "Imaginations and Studies in Early Church History and Tradition." In this book, tracing the journeyings of the various saints, he describes their advent in a clear and charming style of writing, with excellent illustrations selected after close personal study. Much time, indeed, was spent in diligent preparation of materials for this work. For years Dr. Taylor spent his annual holiday in visiting the scenes which he later depicted in his narrative, and in collating and verifying the information obtained. The resulting work displays his enthusiasm, literary capacity, and erudition.

Dr. Taylor was a man of high ideals and principles. When he had made up his mind upon any particular subject it was difficult to get him to alter it, but this firmness of conviction engendered confidence among his patients and his friends. They recognised that his assurance must be well founded, and that it was the result of ripe experience and mature deliberation. He did not bring these qualities to bear upon any of the problems of public life, for he took no part in the political or municipal conflicts of the city. He was an ardent Churchman of the modern type, strict in his observances as interpreted by modern thinkers. In Church matters and those affecting social progress he was always ready to help. He married the daughter of the late Dr. Buxton, a London practitioner, and leaves behind him a widow and five children.

His interment took place at Northfield Church on Wednesday last and was attended by a number of professional brethren and personal friends who assembled to pay a tribute to his high character and his many claims upon their esteem and regard.

JAMES HENRY RICHARDSON, M.B. KING'S COLLEGE, TORONTO, M.R.C.S. ENG., M.D. TORONTO UNIVERSITY,

LATE PROFESSOR OF ANATOMY IN THE UNIVERSITY OF TORONTO.

Dr. James Henry Richardson, the oldest medical man in Toronto, who is said to have chosen the maple leaf as the national emblem of Canada, died at midnight on Saturday, Jan. 15th, at St. Joseph-street, Toronto. The sad event was not unexpected, as he had been in failing health for more than a year. A patriotic Canadian, Dr. Richardson had many claims upon the respect and esteem, not only of the medical profession of Toronto, but of the citizens generally. The history of medicine in that city, where he spent 83 years of his long life, is to a considerable extent bound up in his career. He was born in 1823 at Presqu' Ile, in Northumberland County, Ontario, but three years subsequently his father, the late Bishop Richardson of the Reformed Episcopal Church, settled in Toronto. He commenced his medical studies with the well-known Dr. John Rolph, who was then living in exile at Rochester, New York, on account of his participation in the Canadian rebellion of 1837. In 1844 he went to London and completed his medical course at Guy's Hospital, taking the diploma of M.R.C.S. Eng. When in London he witnessed the first demonstration of the use of ether, while he was the first Canadian to receive the Membership of the Royal College of Surgeons of England. In 1847 he began practice in Toronto, and in 1848 graduated as M.B. of King's College in that city. In 1850 he was admitted M.D. of the University of Toronto, and in the same year he accepted the chair of Anatomy, in succession to Dr. Henry Sullivan, in the then newly-constituted department of medicine of the University of Toronto. Dr. Richardson held this position until the medical department of the University was abolished in 1853, and when the medical faculty was reorganised he was again appointed Professor of Anatomy. Upon the reconstitution of the medical faculty of the University in 1902 he retired. He was therefore a teacher of anatomy for a period of about 50 years. He was greatly liked and respected by the students and in 1903 a large number of his old pupils presented his portrait to the University.

In 1858 he was appointed surgeon to the Toronto Gaol, which post he likewise held for about 50 years, retiring in 1909. Dr. Richardson was a member of the first staff of Toronto General Hospital, which was founded in 1854, and he was the last survivor of the original body. He was at one time President of the Ontario Medical Council and a member of the Upper Canada College Council. He was for many years connected with the militia, and was given a medal for active service during the Fenian raid He was Surgeon-Major of the 10th Royal Grenadiers and surgeon in the old Merchants' Company, which was subsequently merged in the Queen's Own Rifles. In his earlier days, and when in the prime of life, he was considered to be one of the best rifle shots in Canada and was the winner of many trophies. His favourite amusement was fishing; it was said of him that he had fished in every stream from Cape Breton to Port Hope. Dr. Richardson was a man of goodly presence, courteous and genial in manner, and together with literary gifts of a high order was possessed of a keen sense of humour. Some few years ago he wrote an amusing sketch of a method of medical treatment in vogue in the early "thirties," when the now beautiful city of Toronto was known as "muddy little York." This treatment was termed "Thompsonism" and derived its name from its originator, and Dr. Richardson made excellent fun of its absurdities.

Dr. Richardson's wife died in 1907 and seven children survive him. The funeral took place on Tuesday, Jan. 17th, on which day, as a mark of respect to the memory of the deceased, no lectures were delivered in the medical faculty of the University.

ARTHUR WILLIAM WHEATLY, M.B. DURH., M.R.C.S. ENG., L.S.A.

WE regret to announce the death, on Feb. 13th, of Dr. Arthur William Wheatly of South Kensington, at the age of 54 years. Dr. Wheatly was a St. Bartholomew's man, and at the hospital as a student he was known from the first as industrious and painstaking. In 1880 he obtained the gold medal for materia medica of the Apothecaries' Hall and other honours from the teaching and examining bodies. A career which began so well developed into that of a trustworthy and skilful practitioner. He took pains to qualify himself in various special departments—as, for instance, in orthopædic work, public health, and in ophthalmology. He was specially attracted by the latter, and having been appointed assistant surgeon at the Western Ophthalmic Hospital he ultimately became senior surgeon and at the time of his death was consulting surgeon. But his friends always regarded him as a most reliable general practitioner. Soon after settling in Kensington some 25 years ago he succeeded to the practice of Dr. James Lattey, who held him in very high esteem. He was successful in diagnosis, and had also a full knowledge of drugs and was cautious in their use. He had a high sense of what was due to his professional brethren, who always found him courteous and helpful. He had been in failing health for a long time, but at the end only took to his bed for about a month before his death.

AUGUSTIN LE ROSSIGNOL, M.D. ABERD., M.R.C.S. ENG., L.R.C.P. LOND.

Dr. le Rossignol, one of the oldest practitioners in Jersey, died on Feb. 18th, after a very short illness. He was born in Jersey in 1842, and received his medical education at the London Hospital and the University of Aberdeen. He became M.R.C.S. in 1866, L.R.C.P. in 1867, and graduated as M.B., C.M. at Aberdeen in 1867, and M.D. the following year. After serving as assistant resident medical officer at the London Hospital he commenced practice in his native island and soon attained a prominent position in professional and public life. One of the original members of the Jersey Medical Society, he was for many years its secretary and afterwards its President. He was also an original member of the Société Jersiaise and took much interest in its work, especially in the prehistoric archæology of the island. For many years he was one of the honorary medical officers of the Jersey Dispensary, and was later appointed consulting surgeon to the institution. He also served for many years in the Militia of the island, and was for a long time Medical Inspector-General. In 1903 he was elected a jurat of the Royal Courts, and he devoted much of his time to the public duties which that position involved. Not long ago he retired from practice, but he continued in the active performance of his public work up to the time of his death. As late as Feb. 15th he attended a meeting of the States, though he had not been well for some days. On the following day he was found to be very seriously ill, suffering from influenza and broncho-pneumonia, and he died on the fourth afternoon of his illness. He was a man of sound judgment, of upright character, with mental abilities of a high order—qualities which made their mark on his professional and public work. His loss will be deeply felt by his professional brethren, by his colleagues on the bench and in the States, and by a wide circle of patients and friends. All knew his goodness of heart and his sterling qualities, and very many have cause to remember gratefully his professional skill and his devoted kindness.

Medical News.

Society of Apothecaries of London.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—N. L. Clarke (Sections I. and II.), Cambridge and London Hospital; A. Cordon (Section I.), Birmingham; A. H. C. Dawes (Sections I. and II.), Westminster Hospital; H. P. Jelley, Edinburgh; O. R. Kelly (Sections I. and II.), Westminster Hospital; J. G. Morgan (Sections I. and II.), London Hospital; R. Rowlands (Section I.), Glasgow and Westminster Hospital; H. S. Tumber (Section I.), Sheffield; A. Whitby (Section II.), Dublin; and G. F. Wilson (Section I.), London Hospital.

Medicine.—N. L. Clarke (Sections I and II.), Cambridge and London Hospital; H. P. Jelley, Edinburgh; J. G. Morgan (Section II.), London Hospital; J. K. Nariman (Section I.), Bombay and St. Mary's Hospital; E. Newhouse (Sections I. and II.), Leeds; L. M. Potter (Section I.), Geneva and Royal Free Hospital; A. H. Rich, (Section I.), University College Hospital; H. T. Roberts (Section I.), St. Mary's Hospital; and H. S. Tumber (Sections I. and II.), Sheffield.

Forensic Medicine.—N. L. Clarke, Cambridge and London Hospital; R. Eyton-Jones, Liverpool; H. P. Jelley, Edinburgh; L. M. Potter, Geneva and Royal Free Hospital; and W. H. Watson, Guy's Hospital.

Midwifery—N. L. Clarke, Cambridge and London Hospital; J. B. Holmes, Manchester; and O. R. Kelly, Westminster Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—N. L. Clarke, A. H. C. Dawes, O. R. Kelly, J. G. Morgan, and A. Whitby.

Foreign University Intelligence.—*Pisa:* Dr. Gian Giacomo Perrando of Catania has been appointed Professor of Forensic Medicine in succession to Dr. M. B. Sadun, resigned.

Lister Institute of Preventive Medicine.—The following appointments have recently been made by the governing body:—Mr. H. R. Dean, M.A., M.B., B.C. Oxon., M.R.C.P. Lond., and Mr. G. H. Macalister, M.A., M.D. Cantab., D.P.H., assistant bacteriologists to the institute; Mr. H. McLean, M.A., M.D., Ch.B. Aberd., senior assistant in the Biochemical Department; Mr. Ashley Cooper, B.Sc., Jenner Memorial research student; Mr. Roland V. Norris, M.Sc., Grocers' Company research student; and Mr. S. G. Paine, F.I.C., research student in the Chemical Department.

The Manufacture of Meat Extract.—An interesting reception was given at the model Oxo factory in Southwark on Feb. 23rd by the Right Hon. Sir Henry E. Roscoe and the directors of the Lemco and Oxo Company. Amongst a distinguished gathering of eminent scientists were Sir William Crookes, Sir Edward Thorpe, Sir W. Tilden, Professor Raphael Meldola, Dr. Hugo Muller, Dr. J. Emerson Reynolds, Dr. S. W. J. Smith, Dr. J. T. Hewitt, Dr. J. C. Cain, Dr. W. R. Cooper, M.A., Mr. Arthur W. Crossley, Mr. Martin Onslow Forster, Mr. C. E. Groves, Mr. Charles A. Keane, Mr. A. J. Greenaway, and many others. Sir Henry Roscoe, assisted by Mr. Robert L. Gunther (vice-chairman of the company) and Mr. Maurice Glyn (a director), conducted the guests through the factory. The process of blending the nourishing fibrine of beef with the stimulating extract of beef to make Oxo was fully explained, as also were the processes connected with the manufacture of Lemco and of nursing Oxo, a hospital form of Oxo containing peptone of beef, and largely used for invalid dietary. The scientific, hygienic, and sanitary arrangements caused favourable comment from all those who appreciate the true value of such an organisation. Sir William Crookes, in proposing a vote of thanks to Sir Henry Roscoe and the directors, said that he had examined the different processes with profound interest, and he was pleased to see the important part which chemistry played in the scientific organisation of this huge concern, not only in the laboratories here in London, where every batch of concentrated beef sent from the Argentine factories was carefully analysed and tested, but also on a much larger scale in the South American factories themselves. Sir William Tilden, in seconding the resolution, expressed the hearty concurrence of himself and his fellow scientists in all that Sir William Crookes had said.

A New Convalescent Home in Cornwall.—The "William Henry Williams Convalescent Home," which is to be established at Liskeard, will be opened in June. The institution will provide accommodation for about 25 patients.

University of Oxford.—In congregation holden on Feb. 15th the degree of Bachelor of Medicine and Surgery was conferred on George Harold Cross, Balliol College, and Henry Pratt Newsholme, Balliol College. The statute relating to the examination in preventive medicine has been amended by Convocation so as to allow of the examination being held twice a year, in Michaelmas and in Easter or Trinity terms.

London School of Clinical Medicine.—A dinner of the staff and students of the London School of Clinical Medicine (Post-Graduate) will be held, under the presidency of Sir James Crichton-Browne, at Princes' Restaurant, Piccadilly, on Tuesday, March 15th. The occasion is of special interest, as this is the first session in which the naval surgeons have been seconded for study at the school. The Director-General of the Navy and the President of the Royal Society, Sir Archibald Geikie, will be guests of the school upon this occasion.

Sussex County Hospital, Brighton.—The announcement was made at the annual meeting of the governors of the Sussex County Hospital at Brighton, on Feb. 24th, that in order to complete the endowment of the pathological institute founded by Mrs. Stephen Ralli that lady intended to settle on it a further capital sum of £5000 in addition to what she had already given. It was explained that the money was not available for the general purposes of the hospital, but was for the upkeep of the laboratory and its staff, and the hospital committee joined with the lady in the hope that it might be the means of advancing medical science in the alleviation of human suffering.

Medical Sickness and Accident Society.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Feb. 18th. There were present: Dr. F. de Havilland Hall (in the chair), Dr. M. G. Biggs, Dr. J. Pickett, Dr. W. A. Dingle, Mr. J. Brindley James, Dr. H. A. Sansom, Dr. F. C. Martley, Dr. Frederick S. Palmer, Dr. W. Knowsley Sibley, Dr. F. J. Allan, Mr. J. F. Colyer, Dr. J. W. Hunt, Mr. H. P. Symonds, Mr. Edward Bartlett, and Dr. J. B. Ball. The accounts presented showed that the business of the society during the month of January had been satisfactory. The claims, as is usual at this time of the year, have been somewhat numerous, but for the most part of a light nature and of short duration, so that the total sum disbursed by the society in respect of them has not exceeded the amount expected and provided for in the table of contributions. There are some signs of an epidemic of influenza, but so far the claims under this heading have not been numerous. Prospectuses and all particulars can be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

The Rochdale Lunacy Case.—At a specially convened and thoroughly representative meeting of the Rochdale and District Medical Society held at the Wellington Hotel, Rochdale, on Feb. 24th, the following resolutions were unanimously adopted:—

1. That this meeting, after hearing Dr. Harris's statement of his position as to the charges made against him by the plaintiff in the recent lunacy case, and having carefully considered the evidence, documentary and other, produced in support of such statement, unanimously and unhesitatingly declares its conviction of the unfounded nature of the charges made, and the absolute innocence of Dr. Harris with regard to them.
2. That the members of this society wish to offer to Dr. Harris their profound sympathy in the undeserved trouble brought upon him by no action of his, and to express their regret that owing to legal technicalities he is unable to make public (by reopening the trial) the real facts of the case.
3. That copies of the foregoing resolutions be forwarded to the lay and medical press.

The following are the names of the members of the society present:—James Melvin (President), W. J. Hodgson, Arthur Jefferson, H. Harris, J. A. Menzies, G. Kincaid Pitcairn,

William Stanwell, W. Hirst Bateman, D. Richmond, J. A. Ashcroft, S. T. Lord, A. Wallace, J. G. Standing, H. H. Hitchon, F. W. Hartley, E. Sugden, George W. Malim, A. B. McMaster, W. E. Jameson, John Rodley, M. J. Mahony, E. Baldwin, E. Harvie Cox, F. W. Mackichan, Hector M. Calder, R. Burdett Sellers, Lewis Anderson, A. Dickson, W. P. Grant, W. J. Kerr, W. Pinck, and J. Cuthbertson Walker (secretary).

The Health of Barnstaple.—Mr. J. R. Harper, the medical officer of health of Barnstaple, states that during 1909 the birth-rate was 21·57. The death-rate was 12·92 per 1000, being the lowest recorded for the borough. Infant mortality was 70·51, the lowest on record for Barnstaple; the average for the town for the last ten years was 129·01. The zymotic death-rate was 0·13 per 1000 living, the lowest recorded for the town.

Presentations to Medical Men.—Dr. W. S. Anderson of Chapel-en-le-Frith, Derbyshire, who has unfortunately been obliged by failing health to relinquish his practice, has received a useful and substantial presentation upon his retirement. He went to that town in 1877 and has devoted his whole energies to the practice of his profession ever since, holding the posts of public vaccinator, district medical officer, and medical officer to the workhouse of the Chapel-en-le-Frith Union. The presentation took the form of a cheque and an illuminated address which contained the following words: "Your patients and friends, amongst whom you have laboured for over thirty-two years, wish to place on record their deep appreciation of the great skill, untiring devotion, and loving sympathy you have at all times shown, and as some slight recognition we respectfully ask your acceptance of this address and the accompanying cheque." The cheque was drawn for £320. The presentation was made privately by a deputation, Dr. Anderson being unable to leave his room.—As a proof of their regard for the resident medical officer, the patients of the Forster Green Consumption Hospital, Fortbreda, Belfast, have presented to Mr. Robert May, M.D., Ch.B. Glasg., an oak-framed barometer, a solid silver cigarette box, a case of afternoon tea knives, and a pipe. Dr. May is leaving Ireland to take up a practice in Scotland. —At the recent distribution of medals and certificates to members of the Great Western Railway employees, Chippenham (Wilts) branch of the St. John Ambulance Association, the mayor presented Mr. James R. Briscoe, B.A. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., on behalf of the members, with a framed photograph of the class as a mark of appreciation for his services as honorary instructor.

Donations and Bequests.—Under the will of the late Mr. John T. Paton, the Royal Infirmary, Edinburgh, the Royal Infirmary, Glasgow, and the Clackmannan County Hospital, Alloa, will receive £1000 each.—The treasurer of Guy's Hospital has received a donation of £1000 from Mr. R. Nivison.—By the will of the late Mr. Samuel Haldane, the Hull Royal Infirmary will receive £5000; the Hull and Sculcoates Dispensary, £1000; the Hull Victoria Hospital for Sick Children, £500; the Hull and East Riding Convalescent Home, Withernsea, £300; the Hull Blind Institution, £100; and the Hull, East Yorks, and Lincolnshire Institution for the Deaf and Dumb, £100.—By the will of the late Mrs. Jane Hannah Thomson, the Royal Hospital for Incurables, Putney, and the Earlswood Asylum for Idiots will each receive £1000, and the Tunbridge Wells General Hospital £500.—By the will of the late Mr. G. H. Swonnell the Bolingbroke Hospital will receive £500, and the Norwood Cottage Hospital and the Croydon General Hospital £250 each. Under the same will about £25,000 will go to King Edward's Hospital Fund for London.—The late Miss Emma Brandreth has by will bequeathed £1000 to King Edward's Hospital Fund for London; £500 to the Royal London Ophthalmic Hospital; and £250 each to Guy's Hospital, Middlesex Hospital, Royal Asylum for Deaf and Dumb, Old Kent-road and Margate; East London Hospital for Children, Shadwell; Poplar Hospital for Accidents, Royal Sea Bathing Hospital, Margate; Cheyne Hospital for Sick and Incurable Children, Royal Dental Hospital, London; London Fever Hospital, New Hospital for Women, Euston; St. Peter's Hospital for Stone, Metropolitan Convalescent Institution, Royal Free Hospital, Gray's Inn-road, and Bolingbroke Hospital, Wandsworth. The residue of her property, amounting to about £29,000, she left for distribution amongst such hospitals or institutions, including those mentioned, as her executors may consider most deserving or most in need of help.—Under the will of the late Mr. Edward Elsey the Nottingham General Hospital will receive a legacy of £1000.

The Association of Medical Officers of Health.—On March 2nd a meeting was held at the Holborn Restaurant for the purpose of forming a permanent organisation in the interests of those medical officers of health who do not devote their whole time to the duties of their primary office. Dr. F. G. Crookshank presided. The report of the acting secretaries of a recently formed provisional committee having been received, it was decided to transfer the assets and liabilities of the provisional committee to the new "Association of Medical Officers of Health." Draft rules were subsequently drawn up and the following officers were elected:—Chairman: Dr. F. G. Crookshank. Honorary secretary: Dr. D. Belilios. Honorary treasurer: Mr. E. Gibbs-Smith. The annual subscription to the society is the nominal sum of 5*s*.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The New Parliament.

In the new Parliament the controversies over which the General Election was fought are obscuring all other issues. When a House of Commons meets for the first time there are usually Members anxious to bring forward by Bill or motion subjects which lie outside the sphere of party conflict. In the newly elected House of Commons it is otherwise. The Government at a very early stage indicated that their desire was to deal only with finance and with the relation of the two branches of the Legislature. No mention was made of legislation on such an important subject as the reform of the Poor-law. It is generally agreed that whatever contingencies may arise in the uncertain Parliamentary situation this year, there will be little time for the House of Commons to devote itself to anything except what the Government of the day may bring forward.

Nurses Registration Bill.

Mr. Munro Ferguson on Tuesday, March 1st, presented a Bill in the House of Commons "to regulate the qualifications of trained nurses and to provide for their registration." The Bill was read a first time as a matter of course. The honourable Member in presenting this measure is acting in conjunction with Lord Ampthill and others who brought this subject forward in the last Session of Parliament. The Bill is receiving wide support amongst all parties in the House.

Tropical Diseases Research Fund.

The report of the Advisory Committee for the Tropical Diseases Research Fund for the year 1909 has been presented to Parliament as a Blue-book. From it, it appears that the revenue at the disposal of the committee was £3470, and the grants which it made amounted to £3333 6*s*. 8*d*. These were distributed as follows: London School of Tropical Medicine, £1383 6*s*. 8*d*.; Liverpool School of Tropical Medicine, £1000; the University of London, £750; and the University of Cambridge, £200. The report notes that various colonial and protectorate Governments have readily responded to the request to continue their contributions for a period of five years, and the Imperial Government and the Government of India have also undertaken to renew their grants for a similar period. The committee expresses in the most emphatic manner its opinion that the work which has been done and is being done at the expense of the fund is of the highest value, and it would be a calamity if the teaching and researches were to be restricted by any shortage in the contributions. The report makes special allusion to the work being carried out to combat sleeping sickness and malaria.

Dogs (Protection) Bill.

Sir Frederick Banbury has introduced a Bill in the House of Commons "to prohibit experiments on dogs." It is backed by Sir Francis Channing.

The International Congress of Medicine.

Dr. F. W. Pavy, LL.D., F.R.S., the principal delegate of His Majesty's Government to the International Congress of Medicine held in Budapest last year, has made a report which has been presented to both Houses of Parliament. In his report Dr. Pavy mentions the arrangement that the next Congress, which will meet in 1913, is to be located in London.

The International Office of Public Health.

The Foreign Office has circulated in its Treaty Series of papers the correspondence intimating the accession of Bulgaria to the international agreement of Dec. 9th, 1907, respecting the creation of an International Office of Public Health.

Society of Apothecaries of London Bill.

A private Bill has been introduced in the House of Commons by the

Society of Apothecaries of London. A motion against its second reading has been put on the notice paper by Mr. MOONEY.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 23RD.

The Reform of the Irish Poor-law.

Captain CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the intention of the Government in regard to the reform of the Poor-law in Ireland.—Mr. BIRRELL replied: The question of the reform of the Irish Poor-law is under consideration in connexion with similar reforms for the rest of the United Kingdom. A Bill on the lines of the recommendations of the Royal Commission and of the Viceregal Commission is in course of preparation, but in present circumstances I cannot say anything as to its introduction.

The Heating and Cleansing of National Schools in Ireland.

Captain CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether it was the intention of the Government to deal this Session with the problem of the heating and cleansing of national schools in Ireland.—Mr. BIRRELL answered: I regret that I am not in a position to make a definite pronouncement upon this subject. I fully recognise that the existing state of things in regard to the heating and cleansing of national schools is far from satisfactory, and I am not without hope that it may be found possible, without undue delay, to arrive at a solution of the problem that will commend itself to all the parties concerned.

THURSDAY, FEB. 24TH.

Milk Legislation.

Captain FABER asked the President of the Local Government Board whether any further power to deal with the milk-supply was to be given by private legislation to any local authority.—Mr. BURNS replied: I am not prepared to make any general statement on this subject at the present time.

The Transport of the Royal Army Medical Corps (Territorial).

Sir SAMUEL SCOTT asked the Secretary of State for War why the harness had not yet been re-issued to the transport of the Royal Army Medical Corps of the Territorial Army.—Mr. HALDANE answered: I am only aware of one instance in which the instructions given on Nov. 12th last in regard to the re-issue of the harness have not been complied with, and inquiries are being made into the circumstances of the case. Perhaps the honourable and gallant Member would be good enough to let me know the particular case or cases to which he refers.

The Royal Commission on Vivisection.

Sir JAMES YOXALL asked the Home Secretary whether he could state on what date the report of the Royal Commission on Vivisection would be made public.—Mr. CHURCHILL wrote in reply: I am informed by the secretary to the Commission that it is impossible, owing to the change of chairman and to the fresh points which have arisen, to state definitely at what date the report is likely to be presented.

MONDAY, FEB. 28TH.

The Lunacy Act, 1890.

Mr. PICKERSGILL asked the Secretary of State for the Home Department whether his attention had been called to the action of Fowler *v.* Grant, tried at the Manchester Assizes last week, in which it appeared that a person now admitted to have been perfectly sane was committed to a lunatic asylum, and there treated as a lunatic for upwards of a year, and especially to the observations of Mr. Justice Walton that a man or woman, not a pauper, might be taken to the workhouse, shut up in an imbecile ward, and then declared to be a lunatic and placed in a lunatic asylum without any public inquiry, any hearing before a magistrate, or any notice of what was going on; and whether he would consider the advisability of making inquiry, by means of a select committee or otherwise, into the working of the Lunacy Act, 1890.—Mr. CHURCHILL replied: I am making inquiries about this matter which I heard of for the first time from my honourable friend's question. I will let him know the result.

Illness amongst Naval Cadets.

Lord CHARLES BERESFORD asked the First Lord of the Admiralty what was the nature of the illness amongst the naval cadets at Osborne College; how many were affected; whether any cases were fatal; whether any trace of the origin of the illness had been discovered; and whether the buildings were hastily erected against the advice of the civil engineering and medical authorities of the Admiralty, who recommended a larger expenditure of money in order to erect more suitable structures.—Mr. MCKENNA answered: The nature of the illness was epidemic influenza, and 244 were affected. The disease is epidemic throughout the country, and has been introduced into the College in the usual way. One case proved fatal from pneumonia and peritonitis. There is no foundation for any of the suggestions contained in the last part of the noble lord's question. In any event the Board of Admiralty in 1908 took full responsibility for the course pursued, and it would be irregular to refer to the advice of individual officials in the Admiralty.

Mr. DOUGLAS HALL: How many epidemics have broken out since the College was opened, and is it a fact that a large number of cadets are constantly absent from duty owing to illness?—Mr. MCKENNA: No. I think it would be desirable to give notice of any question involving figures. I could not undertake to carry in my head the precise numbers.

TUESDAY, MARCH 1ST.

The Administration of the Poor-law.

Mr. STAVELEY-HILL asked the President of the Local Government Board whether he proposed to make any changes in the administration of the Poor-law as a result of the recommendations of the Royal Commission on the Poor-laws.—Mr. BURNS replied: Some administrative action has already been taken in accordance with the recommendations of the Royal Commission and other measures are in contemplation.

The Importation of Chinese Pork.

Mr. FELL asked the President of the Local Government Board whether the whole of the cargo of Chinese pork which was landed at the London Docks in July had been now inspected; and, if so, how many carcasses were condemned by the inspectors and how many had been passed for consumption.—Mr. BURNS answered: I understand that the whole of the cargo in question has been inspected and that the total number of carcasses landed and inspected was 4643. Of these, 391, or 8·4 per cent., were condemned by the inspectors, and the remaining 4252 were passed as fit for consumption.

Mr. FELL also asked the right honourable gentleman whether he had received notice of the arrival in the Thames of any further shipments of Chinese pork.—Mr. BURNS replied: I have received a copy of a report made to the Port of London Sanitary Authority by their medical officer of health, stating that two cargoes of pigs from China had arrived in the port in January last. On preliminary inspection it was found that the pork did not comply with the requirements of the Public Health (Foreign Meat) Regulations, and a notice was therefore served under the regulations by the medical officer of health forbidding removal of the meat for any purpose other than exportation. In answer to another question the right honourable gentleman said: I have not received any formal notice of the arrival of Chinese pork in the port of Liverpool. In the event of such an occurrence the matter would be dealt with at the port of Liverpool by the Customs officers and the medical officer of health, whose action in regard to such a consignment would be governed by the requirements of the Foreign Meat Regulations. These regulations apply to all ports in England and Wales.

Diphtheria in Holderness Villages.

Mr. SNOWDEN asked the President of the Local Government Board whether he was aware that an outbreak of diphtheria had occurred in the villages of Patrington and Keyingham, in the area of the Patrington district council, Holderness, Yorks; that on Feb. 19th the medical officer reported 43 cases; that this was due to the insanitary condition of the villages, to which the medical officer and others had been calling the attention of the council for 10 years; and that recently an inspection of the drains at Keyingham was made, when it was found that there was accumulated sewage to the depth of 3 feet, 2 feet wide, and 200 yards in length; and would he cause an inspector to be sent down to inquire and report.—Mr. BURNS said in reply: I am aware of this outbreak, and have already sent an inspector to the district. He visited the villages last week, and a preliminary report received from him is now under consideration.

The Notification of Births Act.

Mr. VIVIAN asked the President of the Local Government Board how many local authorities had adopted the Notification of Births Act, and what diminution in the infant death-rate, under one year, had taken place.—Mr. BURNS wrote in reply: The Act is now in force in 195 areas of local government—namely, (1) the whole of the administrative county of London, comprising the City of London and the 28 metropolitan boroughs; (2) 46 county boroughs; (3) 46 non-county boroughs; (4) 57 urban districts; (5) 17 rural districts. In the case of 4 non-county boroughs, 7 urban districts, and 16 rural districts the Act is in force by virtue of its adoption by the Worcestershire county council. After giving a list of the various areas which have adopted the Act the right honourable gentleman proceeded: The death-rates of infants during the first year of life published by the Registrar-General for England and Wales show that the figures for the years 1907, 1908, and 1909 were lower than in any previous year recorded, being 118, 120, and 109 respectively per 1000 births. The lowest corresponding figure in any previous year was 128 in 1905.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BAKER, M. W., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

BOWRING, H., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

BURRELL, L. S. T., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

CHAMPNEYS, F. H., M.D. Oxon., F.R.C.P. Lond., has been re-elected Representative of the Royal College of Physicians of London on the Central Midwives Board.

COX, R., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

DELLSCHAFT, M. E., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

DOUGLAS, CARSTAIRS C., M.D. Edin., F.R.S.E., has been appointed Extern Examiner in Medical Jurisprudence and Hygiene in the National University of Ireland.

FINZEL, HARRY, B.S., M.D. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Dental Anæsthetist to the Bristol Royal Infirmary.

GOLDING-BIRD, C. H., M.B., F.R.C.S. Eng., has been re-elected Representative of the Royal College of Surgeons of England on the Central Midwives Board.

Graham-Jones, J. L., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

Grieves, James Percy, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Portishead (Somerset) District Council.

Hoffmann, G., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Hopwood, J. S., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Johnson, W. B., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at St. Thomas's Hospital.

Lauderdale, E. M., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital,

Linnell, J. E., M.B., B.C. Cantab., D.P.H. Lond., has been appointed Medical Officer of Health to the Sheringham Urban District Council.

Maybury, B. C., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Meakin, L., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Morcom, A. F., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Newsholme, H. P., M.B., B.Ch. Oxon., B.Sc. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

Parkinson, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Perry, L. B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Pratt, Eldon, M.D. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Whitehaven and West Cumberland Infirmary.

Pridham, F. C., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

Scott, S. Gilbert, M.R.C.S., L.R.C.P., has been appointed Medical Officer in Charge of the X Ray Department at the London Hospital.

Seymour, E. A., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

Smith, Kenneth Rawlings, M.D., B.S. Lond., M.R.C.S., L.S.A., has been appointed Medical Officer of Health of the Borough of Totnes (Devon).

Stanley, J. B., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Burton-on-Trent Infirmary.

Topley, W. W. C., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

Wainwright, G. B., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Ashton-under-Lyne Union.—Assistant Medical Officer. Salary £130 per annum.

Birmingham, Queen's Hospital.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Bradford Children's Hospital.—House Surgeon. Salary £100.

Bromley, Borough of.—Temporary School Medical Officer (female). Salary at rate of £20 per calendar month.

Cardiff, University College of South Wales and Monmouthshire.—Professor of Pathology and Bacteriology. Salary £450 per annum. Also Lecturer in Histology and Embryology. Salary £200 per annum.

Carlisle, Cumberland Infirmary.—Resident Medical Officer. Salary at rate of £80 per annum, with board, lodging, and washing.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Physician. Salary 40 guineas per annum. Also House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

City of London Lying-in Hospital, City-road, E.C.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board and residence.

Great Northern Central Hospital, Holloway, N.—Senior House Surgeon, two Junior House Surgeons, Senior House Physician, and Junior House Physician, in each case for six months. Salary of senior officers at rate of £45 per annum and of junior officers £35 per annum, with board, lodging, and washing.

Huddersfield Infirmary.—Senior Assistant House Surgeon. Also Junior House Surgeon. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

Hull, Royal Infirmary.—House Physician, unmarried. Salary £100 per annum, with board and apartments.

Kingston, Parish of, Jamaica.—Health Officer. Salary £350.

Leeds Tuberculosis Association Sanatorium, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

Liverpool Infirmary for Children.—Resident House Surgeon. Salary at rate of £60 a year, with board and lodging.

Liverpool, Royal Southern Hospital.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

Macclesfield General Infirmary.—Junior House Surgeon. Salary £60 per annum, with board and residence.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried. Salary for first six months £40, for second six months £50.

Manchester, County Asylum, Prestwich.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

Margate, Royal Sea Bathing Hospital.—Resident Surgeon. Salary at rate of £80 per annum, with board and residence.

Middlesex Hospital, W.—Medical Registrar.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

National Hospital for Diseases of the Heart, Soho-square, W.—Honorary Assistant Physician.

New Hospital for Women.—Medical Officer to take charge of the Mechano-Therapeutic Department; also Clinical Assistant; also Senior Assistants (females).

Norwich, Jenny Lind Infirmary for Children, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, apartments, and laundry.

Norwich, Norfolk Education Committee.—Assistant Medical Officer. Salary £250 per annum.

Nottingham General Hospital.—Honorary Physician.

Prince of Wales's General Hospital, Tottenham, N.—Clinical Assistant.

Queen's Hospital for Children, Hackney-road. Bethnal Green, E.—Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing. Also Pathologist and Registrar. Salary £200 per annum. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Surgeon in Charge of Out-patient Department for the Ear, Nose, and Throat.

Reeth Union and Rural District Council, Yorkshire.—Medical Officer and Medical Officer of Health. Salary £95 per annum.

Royal Free Hospital, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

Royal Hospital for Diseases of the Chest, City-road, E.C.—Honorary Dental Surgeon.

Royal Institute of Public Health.—Junior Demonstrator of Bacteriology and Comparative Pathology. Salary £100 per annum.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

Salford Royal Hospital.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £60 and £50 per annum respectively, with board and residence.

Salford Union Infirmary, Hope, Pendleton.—Two Resident Medical Officers. Salary £120 per annum, with apartments, attendance, and rations. Also Medical Superintendent. Salary £350 per annum.

Sheffield Royal Infirmary.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.

Shrewsbury, Salop Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Secretary. Salary at rate of £150 per annum.

Stafford, Staffordshire General Infirmary.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

Surgical Aid Society, Salisbury-square, Fleet-street, E.C.—Surgeon.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £100 per annum, with board, lodging, and laundry.

Winchester, Royal Hampshire County Hospital.—House Physician.

Wisbech, North Cambridgeshire Hospital.—Resident Medical Officer. Salary £150 per annum, with unfurnished house.

Births, Marriages, and Deaths.

BIRTHS.

Clarke.—On Feb. 12th, at Carlton House, Quex-road, West Hampstead, N.W., the wife of Colin Clarke, F R.C.S., R.A.M.C., of a daughter.

Gayner.—On Feb. 22nd, at Redhill, Surrey, the wife of Francis Gayner, M.A., M B., B.C. Cantab., of a son.

Turner.—On Feb. 27th, at 17, Harley-street, W., the wife of William Turner, M.S., F.R.C.S., of a son (Douglas Hamilton).

DEATHS.

Clark.—On Feb. 24th, at Lichfield, James Clark (only son of John Clark), M.D. Univ. Aberdeen, L.R.C.S.E., F.R.C.S.E., aged 75. Friends please accept this (the only) intimation.

Le Rossignol.—On Feb. 18th, at Cæsarea-place, St. Saviour's-road, Jersey, Augustin Le Rossignol, M.D., C.M., Jurat of the Royal Court of Jersey, in his 68th year.

Spence.—At St. Ninians, Burntisland, on Feb. 24th, Robert Spence, M.B., C.M., aged 62 years.

Taylor.—On Feb. 26th, at Newhall-street, Birmingham, John W. Taylor, F.R.C.S., M.Sc., late Senior Surgeon to the Birmingham and Midland Hospital for Women, and Professor of Gynæcology in the University of Birmingham.

In Memoriam.

Wakley.—On March 5th, 1909, at 16, Hyde Park-gate, S.W., Thomas Wakley, L.R.C.P. Lond., only son of the late Thomas Henry Wakley, F.R.C.S. Eng., and grandson of the late Thomas Wakley, M.P., aged 57 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE APPEAL OF "DR." BODIE DISMISSED.

A little over three months ago the person known as "Dr. Bodie" was sued in the King's Bench Division for the return of £1000 which the plaintiff, a young man named Irving, alleged to have been obtained from him by fraudulent misrepresentation. The trial before Mr. Justice Darling attracted universal attention so recently that it is not necessary to recapitulate in detail the promise by the defendant that he would instruct the plaintiff in his business, and the representations made with regard to the stage entertainment given by him, to its alleged scientific character, and to his elaborate pretence of scientific attainments. The jury found that the defendant by false and fraudulent representations induced the plaintiff to enter into the agreement; that the defendant broke the agreement to teach the plaintiff in the terms of the agreement; and that the £1000 should be returned. The appeal has not taken long in reaching the Lords Justices, and was recently concluded. It was upon the grounds that the judge misdirected the jury, that the verdict was against the weight of evidence, and that the damages were excessive. The court which heard it, consisting of the Master of the Rolls, and Lords Justices Moulton and Buckley, listened to the arguments of the appellant's counsel with a certain amount of interruption and comment and did not call upon counsel for the defendant to reply, dismissing the appeal with costs and with forcible expressions of opinion upon the methods of the plaintiff, and particularly upon his use of bogus medical titles and so-called diplomas. The Master of the Rolls, in giving judgment, said that "he had never read a summing-up more clear, more directly addressed to the real points, and more free from objection on every possible ground than that of Mr. Justice Darling. What was the confessed, the avowed fact? That the defendant before the agreement was signed, for the purpose of getting it signed and obtaining the money, showed plaintiff some documents, so-called diplomas, one of which described defendant as a doctor of medicine, something or other of surgery, and a doctor of philosophy. One was in consideration of his having passed a satisfactory examination and attended a course of instruction, which he confessed he had never done. Other documents had reference to his classical acquirements. He told the plaintiff that he was a duly qualified doctor. A more gross lie his lordship could not imagine....... The plaintiff's allegation was proved to the hilt. The fact that the defendant did not teach the plaintiff anything was final proof of the fact that he was an ignorant unscrupulous quack at the time he obtained this money. It would be waste of words to say much more." Lords Justices Moulton and Buckley concurred, commenting on the hopelessness of the appeal and expressing surprise that it should have been attempted.

WANTED—TREATMENT FOR HEADACHE.

To the Editor of The Lancet.

Sir,—This type of headache is not infrequently met with in hard-working people of neurasthenic tendencies, and is due, apparently, to some abnormal condition of the blood. At any rate, it may often be relieved by calcium acetate gr. x. t.i.d., given half an hour before meals, and I would advise "Cambria" to try this.

I am, Sir, yours faithfully,
Wimpole-street, W., Feb. 26th, 1910. Ernest Young.

To the Editor of The Lancet.

Sir,—The headaches present on awakening in "Cambria's" patient (The Lancet, Feb. 26th, p. 619) are in all probability "hyperpyræmic" (Food Factor in Disease, vol. i., p. 227, *et seq.*). Such are due to the marked fall in the rate of combustion which always sets in during sleep (Op. cit., vol. i., p. 96, Fig. 2), and to the consequent carbonaceous accumulation in the blood. The treatment is simple and nearly always successful. For the morning headache, the last meal of the day should be a small one: it should contain no sugar, and but little starch or fat. It should be taken rather early in the evening; and between it and bedtime the patient should take some physical exercise, say, a brisk walk. Further, nothing should be taken before retiring, except water, preferably hot. For headaches during the day avoid sleep for at least three hours after food.

I am, Sir, yours faithfully,
Beckenham Park, Kent, Feb. 28th, 1910. Francis Hare.

THE FOLKLORE OF MENSTRUATION.

To the Editor of The Lancet.

Sir,—You had a recent note in your valuable journal regarding the reputed influence of menstruating women upon surrounding objects. It may be of interest to some of your readers to recall a passage from a black-letter book, the "Secretes of Don Alexis," which was until lately in my possession. Quoting from memory, the heading of the paragraph ran: "To kill lice and other venomous insects that do marre the gardens."—"Let a woman that hath her flowres walk two or three times up and down the alleys, and straightway the venomous beastes shall fall doune dedde."

This quotation, being from memory, is perhaps not literally accurate, but anyone wishing to obtain the exact passage will find the book in the library of the Medical Society of London. I may add that I picked up this interesting book in a small town in Westmoreland. The bookseller from whom I obtained it said that it had been for many generations in a family of yeomen. Some of the passages had been crossed out with heavy ink lines, and among them was that quoted above, for reasons that are more or less apparent.

My copy once belonged to one Franciscus Looker, a physician, who had annotated the book throughout in a quaint mediæval handwriting. In not a few of the grotesque, and sometimes repulsive, remedies it is interesting to trace the beginnings of our modern scientific therapeusis, more especially, perhaps, in the region of organotherapy.

I am, Sir, yours faithfully,
Welbeck-street, W., Feb. 25th, 1910. David Walsh.

THE INTER-HOSPITAL RUGBY CUP-TIES.

Second Round.

Guy's Hospital v. *University College Hospital.*

University have this season a useful side, stronger fore and aft than they have had since N. C. Fletcher was a power in the pack. The English international had a way of dominating a side and a game. The football of his hospital is associated with his name, and those who can call to mind a great fight between University and London in an early round of the competition some years ago will not readily forget the part played by Fletcher. London owed their escape that day to another English international forward, C. T. Scott. The memory of these great forwards and their work that day must have come forcibly home to University men in this game. University were well together in the first round. Smith, an eleventh-hour find, proved more than useful at half. Much was expected of Twining. The side was greatly heartened by the narrow margin by which Guy's had knocked out Charing Cross, and so University came to this game with every confidence in their ability to put up a great fight. But they found Guy's in a very different mood. The Kent men were in no mind for another fright. Jones was back in the side, and the Welshman has no faith in easies and breathers. Guy's meant business, so one saw a great side on its mettle, and the result was disastrous to University ambitions. For 20 minutes there was every prospect of a stern struggle. The University forwards worked with a will. Smith and Twining played their part well. Then the fierce energy of the lighter pack died away and the ball was always amongst the Guy's backs. The work of these men must have greatly heartened their forwards. The muddy ball did not seem to worry them. The handling was well done. And gradually University lost heart. The faultless precision of the movements was indeed admirable. The final score, 43 points to nil, in no way flattered the winners. The game was unfortunately marred by an accident to F. B. Smith, one of the University halves, who late in the second half slipped and broke his leg. He had done all that one man could to turn the tide. Guy's only scored once more after he left the field.

Guy's.—G. E. C. Lacey (back), L. B. Stringer, J. P. Jones, H. Lee, A. L. Stokes (three-quarters), C. H. Medlock and L. G. Saner (halves), G. R. Hind, A. H. Crook, C. S. L. Roberts, W. S. Stranach, W. E. Williams, R. S. Kennedy, A. V. Moberley, and H. Gibb (forwards).

University College Hospital.—C. E. A. Goddard (back), L. S. Kempthorne, E. W. Twining, R. E. Martin, and E. B. Jardine (three-quarters), D. O. Twining and F. B. Smith (halves), A. R. N. MacGillycuddy (captain), W. G. Beauchamp, M. H. Barton, G. W. R. Rudkin, G. F. Garraway, G. O. Hempson, B. N. Norman, and J. Winterbotham (forwards).

EXPLOSIVE COUGH MIXTURES.

To the Editor of The Lancet.

Sir,—In order to investigate the problem by "Practitioner" it will be necessary for him to give the preparations of the drugs he mentions that constitute the "cough mixture," as it is most probable that some ingredient of the menstrua will cause the decomposition.

I am, Sir, yours faithfully,
Terenure, Dublin, Feb. 26th, 1910. Ninian M. Falkiner.

LONGEVITY AT BRIGHTON.

Attention is again called to cases of remarkable longevity at Brighton by the fact that on Feb. 28th Mrs. Sarah Sinden attained the 100th anniversary of her birthday. She has been for many years an inmate of the workhouse infirmary, and in the next bed reposes Mrs. Frances Norman, who became a centenarian on Nov. 5th last. Mrs. Sinden is wonderfully bright, quick in hearing, and enjoys excellent health. She attributes her long life to hard work and speaks with pride of her large family—11 in number. Both Mrs. Sinden and Mrs. Norman are natives of Brighton. The town has other centenarians, including the oldest gardener, Mr. Jeremiah Simmons, who will be 102 in a few weeks' time. It has also in its midst the oldest barrister, the oldest solicitor, the oldest actor, the oldest acting alderman, and the oldest native Indian. Can any town of like size match this record?

M.D. in general practice and about to furnish a consulting-room 13 feet square will welcome any suggestions as to the most suitable kind of furniture, wood, desk, couch, and floor covering. Is there any form of gas lamp at a moderate price which can also be used for ophthalmoscopic and laryngoscopic examination?

M.D.—We are aware that the association in question has a commercial side, but there seems to be no doubt that it does good work in educating the general public.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Walter G. Spencer, Jonathan Hutchinson): at 5.30 P.M.

Papers:

Mr. Somerville Hastings: Rupture of the Tunica Vaginalis in Hydroceles.

Dr. W. Soltau Fenwick: The Clinical Significance of Gastric Hypersecretion and its Connexion with Latent Disease of the Appendix.

Mr. H. Paterson: Appendicular Gastralgia, or the Appendix as a Cause of Gastric Symptoms.

WEDNESDAY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—Septimus Sunderland, F. A. de T. Mouillot): at 5.30 P.M.

Discussion:

On Arthritis Deformans (will be opened by Dr. Llewelyn Jones, Bath).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—William J. Gow, G. F. Blacker): at 7.45 P.M.

Specimens:

Dr. F. J. McCann: (1) Sarcoma of Cervix Removed by Abdominal Colpo-hysterectomy; (2) Abdominal Pregnancy.

Demonstration with epidiascope:

Mr. T. Carwardine: Microscopical Appearances in Tubal Pregnancy.

Short Communication:

Dr. Russell Andrews: Carcinoma of the Cervix of a Prolapsed Uterus with Contact Carcinoma of the Vulva.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: H. D. Rolleston, Albert Carless): at 8 P.M.

Clinical Cases.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. J. S. R. Russell: The Cerebellum and its Affections (Lettsomian Lecture).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—8.30 P.M., Staff-Surgeon H. C. Adams, R.N.: Treatment of Syphilis by Intramuscular Injection of Metallic Mercury. Notes on Mercurial Creams, &c.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Short Papers by Dr. J. H. Sequeira, Dr. Ettles, and Dr. T. Thompson.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Card Exhibits by Dr. T. H. Butler and others. Mr. M. L. Hepburn: Xerosis of the Conjunctiva and Night Blindness. Mr. R. R. Somes: A Contribution to the Bacteriology of Panophthalmitis.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, Russell-square, W.C.

FRIDAY.—5 P.M., Dr. T. W. Naylor-Barlow: Disinfectants.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Dr. J. S. Bolton: A Contribution to the Localisation of Cerebral Function, based on the Clinico-Pathological Study of Mental Disease. (Goulstonian Lecture.)

THURSDAY.—5 P.M., Prof. W. Osler: Angina Pectoris. (Lumleian Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. R. H. Paramore: The Evolution of the Pelvic Floor in Non-Mammalian Vertebrates and Pronograde Mammals. (Hunterian Lecture.)

WEDNESDAY AND FRIDAY.—5 P.M., Prof. C. Bolton: The Pathology of Gastric Ulcer.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. McCann: The Treatment of Puerperal Infection.

TUESDAY.—4 P.M., Sir William Gowers: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw (Liverpool): The Treatment of Pulmonary Tuberculosis by Bovine Tuberculin—Results of Treatment.

WEDNESDAY.—4 P.M., Mr. M. White: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. G. L. Cheatle: Cancer of the Tongue.

THURSDAY.—4 P.M., Mr. Jackson Clarke: Clinique (Surgical). 5.15 P.M., Lecture—Dr. A. P. Luff: The Treatment of Some of the Forms of Chronic Rheumatism.

FRIDAY.—4 P.M., Dr. J. D. Grant: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Dunn: Some Clinical Facts in the Study of Ophthalmic Disease.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Nose, Throat, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Tonsillitis, Quinsy, Diphtheria, and Treatment.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. G. Stewart: Compression Paraplegia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. Howell Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Dr. A. J. Whiting: Colitis and Pericolitis.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. G. B. Price: The Clinical Features of Some Unusual Abdominal Tumours.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. W. Turner: Stricture.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Prof. R. T. Hewlett: The Wassermann Reaction.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

ROYAL FREE HOSPITAL.

WEDNESDAY.—4 P.M., The Earl of Sandwich presides at the Annual Court of Governors.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Acute Encephalitis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Apraxia and Agnosia.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

THURSDAY.—4.30 P.M., Clinical Lecture:—Dr. W. Wingrave: A Summary of Recent Pathological Experience in the Practice of the Hospital.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. S. Edwards: Prolapse and Procidentia.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Fungus Diseases of Hair (continued): III., Favus; IV., Leptothrix.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 2nd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 24	29·58	S.W.	0·03	74	48	38	42	42	Raining
,, 25	29·32	S.W.	0·31	85	51	42	46	47	Overcast
,, 26	29·20	W.	0·21	77	49	40	41	42	Cloudy
,, 27	29·58	W.	0·03	80	44	38	37	40	Cloudy
,, 28	29·77	S.W.	...	51	47	37	40	41	Raining
Mar. 1	30·02	S.W.	0·13	83	48	36	37	37	Fine
,, 2	30·14	S.W.	...	93	52	37	43	44	Overcast

Communications, Letters, &c., have been received from—

A.—Dr. E. L. Ash, Lond.; Dr. R. Ackerley, Llandrindod Wells; Anglo-American Pharmaceutical Co., Croydon; Aymard Patent Milk Sterilizer Co., Ipswich; Ashton-under-Lyne Union, Clerk to the.

B.—Messrs. Blundell and Rigby, Lond.; Professor Bertirotty, Turin; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. A. J. G. Barker, Sarawak; Dr. Ralph Brown Headcorn; Messrs. Baillière, Tindall, and Cox, Lond.; Messrs. T. P. Baker and Co., Lond.; Lieutenant H. O. Boger, Salisbury.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Messrs. J. and J. Colman, Norwich; Dr. Christopherson, Khartoum; Continental Tyre and Rubber Co., Lond.; Dr. F. G. Crookshank, Lond.; Chelsea Clinical Society, President and Council of; Dr. Harry Campbell, Lond.; Mr. Edward Carnall, Lond.; Dr. H. Cushing, Baltimore, U.S.A.; Messrs. Samson Clark and Co., Lond.; The Cheerup Teapot Co., Glasgow.

D.—Dr. Henry Dickman, Poole; Messrs. Dietzsch and Co., Lond.; Messrs. R. S. Davis and Co., Pittsburg, U.S.A.; *Detailhandlerbladet*, Copenhagen, Manager of; Dr. T. A. Davies, Ruislip; Messrs. Duncan, Flockhart, and Co., Edinburgh; Mr. T. Dixon, Lond.

F.—Fine Art Society, Lond.; Mr. G. Graham Forster, Lond.; Dr. Harold S. Furness, Lond.; Dr. James Fletcher, Bristol; Messrs. Fannin and Co., Dublin; Mrs. Forster, Westcliff; Messrs. Flint and Durbridge, Lond.; Dr. Ninian M. Falkiner, Dublin.

G.—Dr. Major Greenwood, Lond.; General Medical Council, Lond., Executive Committee of; Dr. W. Gordon, Exeter.

H.—Messrs. Hough, Hoseason, and Co., Manchester; H. S.; Mr. J. Heywood, Manchester; Haydock Lodge, Newton-le-Willows, Medical Superintendent of; Hull Royal Infirmary, Secretary of; Messrs. C. J. Hewlett and Son, Lond.

I.—Mr. E. A. Innes, Birmingham.

J.—Dr. G. F. Jones, Blackpool; Jenny Lind Infirmary for Children, Norwich, Secretary of; Major S. P. James, I.M.S., Simla.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. H. S. King and Co., Lond.; Messrs. G. Keener and Co., Lond.; Dr. James Kerr, Lond.; Dr. Knight, Portobello; Messrs. Kutnow and Co., Lond.; Mr. H. M. Kendall, Dawlish.

L.—Mr. H. K. Lewis, Lond.; Messrs. Lee and Nightingale, Liverpool; Leeds Association for Prevention of Tuberculosis, Secretary of; Dr. R. Lorini, Coronado; Local Government Board, Lond., Medical Officer to the; Colonel F. J. Lambkin, R.A.M.C., Lond.; Dr. Reginald H. Lucy, Plymouth.

M.—Dr. J. C. McWalter, Dublin; Medico-Chirurgical Society of Glasgow, Editorial Secretary of; Maltine Manufacturing Co., Lond.; Messrs. C. Mitchell and Co., Lond.; Medical Sickness and Accident Society, Lond.; Dr. G. Martyn, Los Angeles, U.S.A.; Messrs. Merttens and Co., Manchester; Messrs. Mentzendorff and Co., Lond.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; N. W. A.; Norfolk Education Committee, Norwich, Secretary of.

O.—Dr. Henry O'Neill, Belfast; Mr. Joseph Offord, Lond.; Oxford Medical Publications, Lond., Medical Editor of.

P.—Messrs. Peacock and Hadley, Lond.; *Practical Medicine*, Delhi, Manager of; Mr. Percy Pope, Lond.: Postgraduate College, West London Hospital, Dean of; Dr. R. H. Paramore, Lond.; Portsmouth, Medical Officer of Health of; "Protein," Lond.; Mr. H. J. Paterson, Lond.

Q.—Queen's Hospital, Birmingham, Secretary of.

R.—Mr. W. Rodier, Sydney; Royal Sanitary Institute, Lond.; Registrar-General, Spanish Town, Jamaica; Royal Free Hospital, Lond., Secretary of; Royal Dental Hospital, Lond.; Messrs. Rosenberg and Sellier, Turin; Reeth Union, Clerk to the; Rotherham Hospital, Secretary of; Messrs. Reynolds and Branson, Leeds.

S.—Scholastic, Clerical, &c., Association, Lond.; Mr. A. Sinclair, Sault Ste Marie; Messrs. R. Sumner and Co., Liverpool; Messrs. Spiers and Pond, Lond.; Dr. H. Batty Shaw, Lond.; Dr. W. S. Syme, Glasgow; Salford Union, Clerk to the; Dr. G. Steele-Perkins, Lond.; Messrs. Squire and Sons, Lond.; *Shrewsbury Chronicle*, Manager of; Sanitas Co., Lond.; Stepney Spare Motor Wheel Co., Llanelly; Salford Royal Hospital, Secretary of; Messrs. Smith, Elder, and Co., Lond.; Fleet-Surgeon E. A. Shaw, R.N., Hong Kong; Mr. Sydney Stephenson, Lond.; Society of Engineers, Lond., Secretary of.

T.—Mr. G. S. Thompson, Kimberley; Third International Congress on School Hygiene, Paris.

U.—Mr. Harold Upcott, Hull.

V.—Mr. F. C. W. Vogel, Leipzig; Messrs. Van Alexander and Co., Lond.

W.—Dr. E. B. Waggett, Lond.; Mr. E. P. Weston, Pica, Arizona; Mr. J. Williams, Bradford; Dr. J. A. Wynhoff, Amsterdam; Messrs. Widenmann, Broicher, and Co., Lond.: Staff Surgeon H. V. Wells, R.N., Chatham; *West London Medical Journal*, Editor of; Wilts United Dairies Co., Melksham, Manager of; Messrs. Worthington and Co., Burton-on-Trent; Dr. David Walsh, Lond.; Dr. H. Hoyle Whaite, Gravelly Hill.

Y.—Dr. Ernest Young, Lond.

Z.—Messrs. C. Zimmermann and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Allen and Hanburys, Lond.; Apollinaris Co., Lond.; Miss Adams, Hollington; Army and Navy Male Nurses' Co-operation, Lond., Secretary of; Mr. E. H. Abbott, New York; Ardath Tobacco Co., Lond.; Mr. E. Arnold, Lond.; A. T. G.; Messrs. Anley and Co., Lond.; Dr. C. M. Allan, Longton; A. H. G.

B.—Dr. T. H. Boyd, Richmond, Victoria; Dr. A. J. Burridge, Winnipeg, Man.; Messrs. J. Broadbent and Co., Huddersfield; Birkenhead and Wirral Children's Hospital, Hon. Treasurer to the; Bucharest, Librarian of Faculty of Medicine; *Burton-on-Trent Chronicle*, Manager of; Surgeon-General G. Bainbridge, Bournemouth; Dr. R. H. Barker, Hungerford.

C.—Mr. E. Castoldi, Brescia; Messrs. J. and A. Carter, Lond.; Mrs. W. Clarke, Leicester; Crooksbury Sanatorium, Farnham, Medical Superintendent of; Mr. F. Carpenter, Ilford; C. W.; C. E. G.; C. T.; Dr. J. Cooke, Lincoln, New Zealand; Central London Throat and Ear Hospital, Secretary of; Messrs. Callard, Stewart, and Watt, Lond.; Dr. L. Colbourne, Beckenham; Dr. F. Charlesworth, Boscombe; Crewe Corporation, Clerk to the; Caxton Advertising Agency, Lond.; Messrs. Cadbury Bros., Bournville.

D.—Dr. W. T. Dougal, Pittenweem.

E.—Dr. K. E. Eckenstein, Bordeaux.

F.—Dr. Graham Forbes, Lond.; Messrs. Font and Co., San José.

G.—Dr. S. Gill, Formby; G. N. A.; G. M. J.; Messrs. Girling Bros., Woolwich; Mr. G. H. Gemmell, Edinburgh; Messrs. C. T. Gething and Co., Lond.

H.—Dr. C. B. Hunter, Lond.; Messrs. W. Hodge and Co., Edinburgh; Dr. E. Houseman, Lillooah, India; Mr. H. Higgins, Pallanza, Italy; Dr. H.; Mr. P. Howe, Denton; Dr. W. Curling Hayward, Port Said; Messrs. Haar and Steinert, Paris; Messrs. A. Heywood and Son, Manchester; Mr. T. H. Hewitt, Lond.; Mr. J. T. Hyatt, Shepton Mallet; H. B.

I.—Messrs. Ingram and Royle, Lond.

J.—Mrs. Johnston, Lond.; J. H.; J. K.; J. S.; J. D. G. E.

K.—Dr. G. L. Kerr, Munnar, India; Mr. G. W. Kidd, Newcastle-on-Tyne; Messrs. C. Knight and Co., Lond.; K. S., Tufnell Park.

L.—Dr. D. Lawson, Banchory; Dr. P. V. Langmore, Berwick, Australia; Messrs. Lea and Febiger, Philadelphia; Lieutenant R. B. Lloyd, I.M.S., Kohat, India.

M.—Dr. M. Martin, Glasgow; Dr. P. Macdiarmid, Liverpool; Messrs. Maythorn and Son, Biggleswade; M. W.; Messrs. Methuen and Co., Lond.

N.—Messrs. Neyroud and Sons, Lond.; N. W. A.

O.—Dr. F. Orton, Lond.

P.—Dr. E. J. Panzner; Detroit; Dr. Parkin, Newcastle-on-Tyne; Dr. W. Pasteur, Lond.; P. L. G.; Mr. N. Pollock, Northfield; Painswick Sanatorium, Medical Superintendent of; Mr. R. E. Franklyn Pearse, Jagersfontein; Mr. A. J. Pelton, Tunbridge Wells.

R.—Mr. S. E. Roberts, Lond.; Reuter's Telegram Co., Lond.; Royal South Hants and Southampton Hospital, Secretary of; Royal National Orthopædic Hospital, Lond., Secretary of; R. J.; R. N. T.; Captain T. C. Rutherford, I.M.S., Bilaspur, India; Rydak Tea Estate, India, Secretary of; R. R. B.; Messrs. Roden and Wilkinson, Droitwich; Messrs. Russell and Sons, Lichfield.

S.—Miss A. E. Schwersee, Lond.; "Sharp," Lond.; St. Peter's Hospital, Lond., Secretary of; Sanitary Wood Wool Co., Lond.; Dr. S.; Mr. W. Sykes, Preston; Dr. R. Sinclair, Dundee; Messrs. W. H. Smith and Son, Stafford; Messrs. Scott and Bowne, Lond.; Dr. S. Stephenson, Lond.; Mr. W. H. Shaw, St Anne's-on-the-Sea; Sirmoor State, India, Chief Medical Officer of; *Scientific Press*, Lond., Manager of; St. Bartholomew's Hospital, Rochester, Clerk to the; Mr. T. S. W. Smith, Edinburgh; Mr. T. Spence, Burntisland.

T.—Dr. J. C. Thomas, Canterbury, Australia; T. J. S. B.

V.—Messrs. Van Houten, Lond.; Messrs. J. W. Vickers and Co., Lond.

W.—Miss F. E. Worger, Bath; Mr. B. Wheeler, Manchester; West Kent General Hospital, Maidstone, Secretary of; Wolverhampton, &c., Eye Infirmary, Secretary of.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

The Lumleian Lectures

ON

ANGINA PECTORIS.

Delivered before the Royal College of Physicians of London

BY WILLIAM OSLER, M.D., F.R.S.,

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

LECTURE I.

Delivered on March 10th.

INTRODUCTION.

MR. PRESIDENT AND FELLOWS,—Twenty-five years have passed since I stood here, a much embarrassed junior, as Goulstonian lecturer. I have always had a keen sense of gratitude to the College for according recognition to a colonial worker at the time of life when such an action counts for so much, and I recall the intense pleasure of my colleagues at Montreal that one of their number had been selected for the honour. The subject of those lectures came within the ken of the younger Fellows, whose work is, or should be, largely in the post-mortem room and laboratory. And now kindly time has moved me among the seniors, and I have to thank you, Sir, for the opportunity to deliver the course distinguished among all others in the College, since in these Lumleian lectures the incomparable Harvey laid the sure foundations of modern experimental medicine.

I make no apology for the subject I have chosen—Angina Pectoris. In a very special way it is *our* disease, having been first fully described at this College by the English Celsus, William Heberden, and in a manner so graphic and complete as to compel the admiration and envy of all subsequent writers.

Like books, diseases have their destiny. Could Heberden return for a month's busy practice his surprise would be not less at the new cohorts of disease than at the disappearance of familiar enemies. How staggered he would be at the *Nomenclature* of the College! And he would be keen to write new commentaries upon old diseases with new names. How the word appendicitis would jar his critical ear, but how rejoiced he would be to see light on that dark malady, "inflammation of the bowels." Living through a century of theory, he died at the outset of the great awakening in clinical medicine, bequeathing a precious legacy of experience greatly appreciated by several generations of students, and leaving in this College a precious memory which it is our delight to cherish.

Looking through the famous *Commentaries*, one is impressed with the value, with the rarity too, of the old-fashioned, plain, objective description of disease; and one is impressed also with the great gulf which separates the clinical medicine of to-day from that of our great-grandfathers. Page after page of the Commentaries are as arid as those of Cullen or of Boerhaave, and then we light upon an imperishable gem in the brilliant setting of a master workman, whose kinship we recognise with the great of old—with Hippocrates, with Aretæus, and Sydenham. Such a clinical gem is the account which Heberden read at the College, July 21st, 1768, "of a Disorder of the Breast," to which he gave the name "Angina Pectoris," based on the study of 20 cases. When he incorporated the description in his *Commentaries* (written in 1782) his experience had extended to 100 cases.

Historical details I have dealt with at length elsewhere, but in passing one must just mention the predecessors of Heberden, particularly Rougnon, the old Besançon professor. There is no question as to the nature of the case which he describes; you can read for yourselves, as through the kindness of Professor Roland, a distinguished successor of Rougnon at Besançon, I am enabled to show, for the first time, I believe, in this country the rare "Lettre," published in March, 1768. As Rougnon antedated Heberden a few months, so did Morgagni precede Rougnon, and in his excellent report the symptoms are even more fully described, including for the first time the brachial numbness and the aortic lesion; and we get back to classical days if Seneca's disease, which he calls *meditatio mortis*, and the "paradoxon" of Erasistratus, are regarded as angina.

For more than a century the chief contributions to the pathology of the disease have been made by members of this society, and to-day our Fellows number many of its best known students, among whom, Sir, you rank *primus inter pares*. And yet so far as I can ascertain angina pectoris has never been formally considered in one of the College courses. It is, too, a disease for a senior to discuss, since juniors see it but rarely; indeed, I had reached the Fellowship before I saw a case in hospital or private practice. And then I take it that in this course the College wishes an expression of opinion on some affection to which the lecturer has paid special attention. Circumstances have given me a somewhat unusual experience. The lectures published in 1897 were based on a study of the literature and 60 cases; since then I have seen 208 additional cases, and I propose to present very largely my own impressions of the disease.

Let me ask at the outset, What is angina pectoris? Who will give an answer to satisfy all of us? The subject is full of knotty problems, which lend themselves to speculation. I could wish for a more active scientific imagination that amid webs of fancy I might entangle and darken the maturer counsels of some of my distinguished auditors. But with neither the brains nor the inclination for such a task, in a more modest flight I shall consider it as—*A disease, characterised by paroxysmal attacks of pain, pectoral or extra-pectoral, associated with changes in the arterial walls, organic or functional.*

Primarily an affection of the arterial system—of the pump and the pipes, of the system in which are literally the issues of life and death—its protean features cannot be understood unless we remember that between the chief parts of this system, the heart and the arteries, there is no essential difference, since the arteries are only a long-drawn-out heart and the heart but a bulbous expansion of an artery. A physical unit, and worked as such, it is controlled at every moment by an outside mechanism, an elaborate system of nerves which penetrate every part, and even lose themselves in its structures.

The problem before us is the anginal paroxysm in all its grades, from the trifling sense of substernal distress to the vascular *ictus* by which a man is felled as with a club. After a few etiological details I shall discuss briefly the clinical types and certain extra-cardiac features of the disease. In the second lecture I shall consider the pathology, and in the concluding one speak of prognosis and treatment.

GENERAL ETIOLOGY.

Has angina pectoris increased in the community? Has the high-pressure life of modern days made the disease more common? There is an impression among consultants in the United States that there has been an increase of late years, a view not borne out for this country by the figures available. In 1908 there were 929 fatal cases in England and Wales—617 men and 312 women. For the 20 years, 1888 to 1907, the average number of deaths was about 700; in 1905 the number rose above 800; and in 1907 to 942; but the average number of deaths per 1,000,000 living has not materially increased, ranging from 20 to 25, but in 1907 it reached 28. In England the population of the registration districts of England and Wales is about 35,000,000. The statistics for the United States in a registration area, embracing 45,000,000 of people, show a decidedly greater prevalence of the disease. The total deaths in 1908 were just under 3000. But the average number of deaths per 1,000,000 of population have not varied much within the past ten years, but it is more than double that of England and Wales, ranging from 66 to 70 per 1,000,000 of inhabitants.

It is not a disease for which hospital figures are of much service, and yet it is interesting to compare the large institutions on the two sides of the Atlantic. At the Montreal General Hospital in 10,934 admissions for the ten years 1900 to 1909 there were 6 cases diagnosed as angina pectoris. At the Royal Victoria Hospital, Montreal, among 10,510 admissions in ten years in the medical ward there were 9 cases. At St. Bartholomew's Hospital in 1907 there were 2 cases in 2602 medical admissions; in the same year at St. Thomas's Hospital in 2261 medical admissions there was only 1 case. This gives an average of 1 case a year in the wards of the large general hospitals. The figures at the Johns Hopkins Hospital are scarcely available for comparison, since they embrace a very large number of patients admitted to the private wards, and even into the public wards many of the farmer class are admitted from the country at large.

These figures bear out a remarkable fact with which we are all familiar—that angina pectoris is an affection of the better classes, and not often seen except in private practice. During 10 years I did not see a case at the Montreal General Hospital, and only one case at the University Hospital, Philadelphia; and I have no notes of a case seen at the large Philadelphia hospital. It is only as the consultant's work increases that he begins to see the disease, and then a man in active practice may see 10, 15, or more cases in the course of a year. This was about my average, and I see from the statements of our President, and of the late George Balfour of Edinburgh, that this is about the figure reached in this country by the consultant with recognised cardiovascular leanings. Once there was the unusual experience of eight cases in a month (May, 1899), three of which died in the same street within a short distance of each other, or, to be more accurate, one died on the steps of the cathedral, the other two in adjacent houses not far away.

Let me give as briefly as possible my personal statistics. I have notes of 268 cases in all—231 men, 37 women. If we recognise, as was my custom, mild neurotic or pseudo, and a grave organic or true form, there were of the former 225, and of the latter 43. I have not counted *les formes frustes* unless a case had subsequent severe attacks. As Heberden remarked, women are rarely affected, only 3 of his 100 cases. Of the severer form of 225 cases there were only 14 women. On the other hand, of the minor type, of 43 cases there were 23 women. It is somewhat surprising to see that in this country in the registered fatal cases of angina for the past 20 years the ratio of women to men was 1 to 1·8—5133 women to 9303 men.

The age incidence is late, the largest number of cases occurring in persons over 50. Of the 612 deaths in England and Wales, only 36 occurred between the ages of 35 and 45; while between 45 and 65 there were 291 deaths. In my list the age was much the same. There were under 30 years of age, 9; between 30 and 40, 41; between 40 and 50, 59; between 50 and 60, 81; between 60 and 70, 62; between 70 and 80, 13; above 80, 3. In women the age incidence is, on the whole, a little lower than in men.

An interesting point in my series relates to the race incidence. Of 268 cases 37 were in Jews. Nowhere in the world are members of this gifted race seen to greater advantage than in the United States, where the opportunities of a rapidly growing country give scope to their exceptional genius for business. Living an intense life, absorbed in his work, devoted to his pleasures, passionately devoted to his home, the nervous energy of the Jew is taxed to the uttermost, and his system subjected to that stress and strain which seems a basic factor of so many cases of angina pectoris. It is only fair to state that this high percentage scarcely represents a true state of affairs, since certain circumstances gave me an exceptional *clientèle* among the Hebrews.

Angina in doctors.—A point that stands out prominently in my experience is the frequency of the disease in our profession. For the same reason doubtless that Sydenham gives for the incidence of gout "more wise men than fools are afflicted," angina may almost be called "morbus medicorum." 33 of my cases were in physicians, a larger number than all the other professions put together. Curtin[1] in his study of 60 fatal cases notes that a fourth were in physicians. This large percentage in my list may in part be attributed to the circumstance of the publication of lectures on the subject in 1897. But the frequency with which doctors die from the disease has become the subject of common remark. From John Hunter onwards a long list of most distinguished men have been its victims. Not to mention the older physicians, among our contemporaries was Nothnagel, himself one of the ablest students of the disease, whose last act in life was to describe his own fatal attack. A tragic interest relates to this incident in the career of the great Vienna clinician. I do not know that the note has ever been transcribed in English; it reads as follows: "Anginal attacks with very severe pains. Pulse in the attack very variable, at one time slow, 56 to 60, quite regular, high tension, and then again rapid, 80 to 90, tolerably even and regular; then again quite unrhythmic, unequal at one time, rapid another, slow with changed tension. The first sensation of this attack dates three or four years back, at first slight, gradually becoming more pronounced. Very severe attacks with great pain have only come on within the last five or six days. Written on July 6th late in the evening, after three very severe attacks." Within a few hours after this note the end came. Charcot, the founder of modern neurology, died in an attack in the arms of his friend Straus, who himself succumbed to the same disease not long after. The distinguished neurologist Joffroy died from it in Paris last winter. Our much-beloved friend and Fellow, Cullingworth, was its victim, and the list could be much extended. The most brilliant and devoted physician of his generation in the United States, the late William Pepper, died with coronary arteries like pipe-stems. The Provost, indeed the maker, of a great University, the very head and front of every important public movement in a city of a million inhabitants, a universally sought consultant, an enthusiastic teacher, a prolific author, in him was incarnate the restless American spirit, which drove him into a premature grave at the height of his career at the comparatively early age of 55.

I have looked over carefully the notes of the 33 cases to see if any factors could be said to favour. Only 7 were above 60 years of age, one a man of 80 with aortic valve disease. The only comparatively young man in the list, 35, was seen nearly 20 years ago in an attack of the greatest severity. Worry and tobacco seem to have been the cause. He has had no attack now for years. Two cases were in the fourth decade, 13 were in the fifth, and 11 in the sixth.

For the purpose of this analysis we may exclude the cases above the age of 60, after which age no man, much less a doctor, need apologise for an attack of angina pectoris. Neither alcohol nor syphilis was a factor in any case; of the 26 cases under 60, 18 had pronounced arterio-sclerosis and 5 had valvular disease. In a group of 20 men, every one of whom I knew personally, the outstanding feature was the incessant treadmill of practice; and yet if hard work—that "badge of all our tribe"—was alone responsible would there not be a great many more cases? Every one of these men had an added factor—worry; in not a single case under 50 years of age was this feature absent, except in Dr. G., who had aortic insufficiency, and who had had severe attacks of angina years before, probably in connexion with his aortitis. Listen to some of the comments which I jotted down of the circumstances connected with the onset of attacks: "A man of great mental and bodily energy, working early and late in a practice, involved in speculations in land"; "domestic infelicities"; "worries in the Faculty of Medicine"; "troubles with the trustees of his institution"; "lawsuits"; "domestic worries"; and so through the list. At least six or seven men of the sixth decade were carrying loads light enough for the fifth but too much for a machine with an ever-lessening reserve.

It is a significant fact that in Ogle's well-known study[2] "Statistics of Mortality in the Medical Profession," among 3865 deaths 444 were undefined diseases of the heart and circulatory system, though only 34 deaths were specified as due to angina pectoris. The same dominance of cardiovascular disease is indicated in the Registrar-General's Report.[3]

CLINICAL TYPES.

It is interesting to look over a long series of some one affection with a view to classification. Angina pectoris offers notorious difficulties, and I do not suppose there are any two of us who would agree.

As far as symptoms are concerned my cases fall into three groups: (1) Les formes frustes; (2) mild; and (3) severe.

1. *The mildest form, "les formes frustes" of the French.*—Substernal tension, uneasiness, distress, rising gradually to positive pain, a not infrequent complaint, one, indeed, from which few of us escape, is associated with three conditions. Emotion is the most common and the least serious cause. How often does it happen on getting up to speak, or when beginning to read a paper, that a man experiences a sense of tension just beneath the breast bone, a curious indescribable

---

[1] Transactions of the American Climatological Society, vol. xxiii.

[2] Transactions of the Royal Medical and Chirurgical Society, vol. lxix.

[3] Decennial Supplement, Part II., 1908.

feeling, not of pain, yet sometimes working to a degree of uneasiness that is only relieved by firm pressure? The slight associated pallor indicates a vaso-motor disturbance which may increase, and a man may have to stop speaking; indeed, I have known instances in which fainting has occurred. In one of my physician-patients, a well-known author, the attacks of true angina began in this way; while lecturing he would experience a feeling of substernal tension and for years had nothing else and had it under no other circumstances. He could play golf and ride, and do an extraordinary amount of work without any uneasiness. Only a single action may bring it on. Dr B. could lecture and hold his clinic without experiencing any difficulty, but if he read a paper before the Medical Society, or if he gave an address in public, the substernal tension was certain to come on. In this form the condition is very transient; while sometimes a danger signal, in many cases it may be disregarded altogether. Not so the second form, in which this substernal distress is associated only with muscular effort—the slightest ascent, the extra round of golf, a sudden hurrying, as to catch a train. Much more frequently the precursor of angina, it is remarkable for how long a person may have slight attacks without aggravation. In a tranquil life the individual is perfectly comfortable. As old Dr. K—— of Philadelphia used to say to me, "I can stand anything in life but a hill or a stair." A Mr. W—— could walk a mile from his home to his office, but for several years he could not walk back on account of the slight up-grade. He never had an attack of angina, though he died from myocarditis and a dilated heart. In these emotional and muscular types of the "formes frustes" the condition is usually transient. But there is a third variety, the *high-pressure form*, in which day after day, for weeks or months, the individual may never be free from a sense of tension beneath the breast-bone. It is not pain; it has no accurate localisation except that it is directly substernal; there is no radiation; it is not increased by emotion or by exertion, but obtruding itself into consciousness as an unpleasant reminder it means just one thing—that the machine is being driven at too high a speed. The general manager of one of the railways of the Southern States used to call it his "hot box"—i.e., his "hot axle." It is met with in men who are burning the candle at both ends—working hard at business or in a profession and at the same time treading the "primrose path." It is not always of sufficient severity to cause the patient to consult a physician. The Sunday rest may cause its disappearance. Not always a high-pressure affair alone, it is aggravated by worries, particularly the possibility of not carrying through some big scheme or the onset of a financial crisis. With the harness off it may disappear completely. One man writes: "The second day out on the steamer from New York I am free, not the slightest sensation of my enemy." In looking up the history of these cases, in three only did severe angina follow. I have not included "les formes frustes" in my list unless there were other features, such as definite paroxysmal attacks. It is only occasionally severe enough to make a patient seek advice. It is significant that of five cases of which I have notes of the blood pressure, in all it was above 180 and in one 250.

2. *The mild form.*—Under the mild form, *angina minor*, come 43 cases of my series. I have grouped under these the neurotic, vaso-motor, and toxic forms, the varieties which we used to speak of as false or pseudo-angina, a term which I agree with Gibson and others is best given up, since, as I hope to show in the next lecture, the basic features of all forms are identical. Still, it is a very useful exoteric term, a comfort to the patient and his friends. The special features of this variety are—the greater frequency in women, the milder character of the attacks, and the hopeful outlook.

3. *Severe angina, angina major.*—This group is represented in my series by 225 cases, of which 211 were in men. The two special features here are the existence in a large proportion of all cases of organic change in the arteries and the liability to sudden death. It is not easy, nor is it wise, to class cases by symptoms alone, but all the same there is an interest in so doing, and my list may be divided into four groups.

A. Cases in which death occurred in the first or second attack, or in connexion with a series of rapidly recurring attacks—the so-called *status anginosus*. We do not know how many instances of sudden death in the street or in bed at night are due to angina pectoris, but only three cases in my series died in the first attack. The mode of death is not always the same. In certain cases it is the most rapid we see—without warning, or after a few minutes of unpleasant substernal sensation, or possibly in some act, combining intense emotion with muscular effort, there is a rapid change, a sudden unconsciousness, a stony stare, a slight change in the facial expression, and then with two or three gasps all is over; no pulse is to be felt at the wrist; the respiration stops, but even when the patient is apparently dead a feeble heart impulse may be felt or faint heart sounds heard.

B. The patients have had a series of characteristic attacks ranging from two or three to scores during the course of a few months or a year or more, and in a severe paroxysm or in a series death occurs. The final event has not the same suddenness, nor is there the rapid loss of consciousness; the patient may indeed be moribund and quite conscious, though this is unusual. The mode of dying in these cases is very remarkable. In a number of instances I have made careful notes. Two are worth quoting:—

> On Thursday, May 25th, 1899, while at work in the ward, Dr. Knox called me to see a patient in an attack of angina. I found a man, aged 41, who had been admitted the previous day complaining of pain in the heart. He had been a heavy worker, a large eater, had not had syphilis. Five years ago while rowing he had an attack of pain and shortness of breath, which lasted for a few minutes. On and off since then similar attacks have occurred, always brought on by exertion, now even by very slight effort. He had aortic insufficiency, and a very soft low tension pulse. About 9.30 A.M. his hands and feet had become cold and a little cyanosed, and he had a slight attack. It continued on and off all the morning. I saw him at five minutes past 12; he was propped up in bed moaning with pain, but was not sweating; the pulse was soft, regular, and feeble—100 to the minute, the left smaller than the right. Everywhere over the chest in front and back were medium-sized râles; the pulmonary resonance reached almost to the costal border on the right side, and the superficial cardiac flatness was completely obliterated; there was a soft apex systolic murmur, and a soft diastolic aortic heard along the sternal border. At 12.15 he had a sudden collapse, became pulseless, the features set, and he gave one or two gasping respirations, which recurred at intervals of about five minutes. No pulse could be felt in carotids or brachials. Remembering the remarkable case reported by Sloan, I performed cardio puncture, thrusting a long thin aspirator needle into the heart through the fourth right interspace. This was followed at once by one or two faint inspirations; the needle showed a cardiac impulse very plainly, beating 52 to the minute. At 12.25 the needle was moving much more slowly and more feebly—44 to the minute. A saline injection was made directly into a vein. At 12.28 the cardiac beats as shown by the needle were still regular—32 to the minute, without any tremor in the interval, such as might be given by fibrillation. At 12.37 the excursion of the needle was a little stronger. No heart sounds could be heard; no pulsation in the veins of the neck. At 12.44 I injected a tenth of a grain of strychnine directly into the wall of the left ventricle. The needle in the right fourth interspace continued to show definite movements, gradually getting feebler, and stopped at five minutes past one, 50 minutes from the onset of the collapse, and exactly 45 minutes from the last inspiratory gasp.
>
> Nov. 4th, 1901.—I was sent for hurriedly this morning to see a stout, healthy-looking man, aged 57, whom I had known for some years, and had seen at intervals. As I entered the room at 8.15 the patient apparently was *in articulo mortis*; indeed, I thought he was dead. The eyes were fixed, the pupils dilated, the face of an ashy colour, and he was not breathing. Seeing my startled look, Dr. Atkinson, who was just preparing a hypodermic injection of ether, said: "It is all right; he will come to; he has had four such attacks in the night." There was no pulse in either radial, but listening over the heart one could hear feeble distant heart sounds. In about a minute (it seemed to me longer) the patient began to breathe; inspiration and expiration were somewhat noisy and deep, and accompanied everywhere with loud bronchial râles. He did not recover consciousness. He became more livid in the hands and face, and the pupils became contracted. The pulse could be felt, small at first, but it then became of much better volume and ranged from 56 to 68. In the course of ten minutes the breathing became less laboured; his colour improved and lost the ashy look, but he did not regain consciousness. The heart sounds could be well heard; the pulse was full and soft, 62. At 11.15 the patient died in another attack. He had not regained consciousness. He had had his first attack of angina on Nov. 2nd.

C. A chronic form, represented in my series by 10 cases, all of which were characterised by frequent recurring attacks over a period of more than 10 years. John Hunter, you remember, had had his first seizure in 1773, 20 years before his death, and he had many in the intervals. One special feature of this form is the frequency with which certain special actions are associated with the attacks. A patient may be perfectly comfortable and remain free if he leads a tranquil life with little or no muscular effort: a slight hill, the act of dressing himself, may be sufficient to bring on an attack; or in another patient an indiscretion in diet. This is a form with which the patient may feel comfortable for a great many years. I have had several friends, two of them medical men, who have managed very comfortably for more than 10 years, in spite of the liability to attacks. On the other hand, they may be among the most distressing cases we see. A Mr. D. of Wilmington lived a life of martyrdom for more than 10 years; emotion, cold, exercise, eating, would bring on the attacks, and his existence was a burden—not a week passed without an attack. He was thought to be neurotic and hysterical, though a man of 60. He had remarkable quivering of the fingers in the attacks, and on several occasions became unconscious. He threw himself about and was in intense distress during the paroxysm. I saw him in an attack and felt sure the condition was serious. The left radial pulse became very much smaller than the right. He died suddenly after nearly 11 years of suffering. Both coronary arteries were calcified.

D. A group of cases, not large, I am sorry to say, in which after attacks of great severity, recurring for months, or for as long as two years, complete recovery takes place. These are cases I shall deal with more fully in speaking of prognosis.

Extra-pectoral Forms.

Angina pectoris is an affection of the arteries. The studies of Nothnagel in 1867 on the vaso-motor phenomena of the attacks widened enormously our conception of the nature of the disease, and we have come more and more to regard the symptoms of the attack as an expression of a *vascular crisis*, to use the apt term introduced by James Collier. I shall try in the next lecture to discuss the disease from this point of view. Meanwhile here may most conveniently be considered certain extra-pectoral, or, more properly speaking, extra-cardiac features, which have a direct bearing upon our conception of its pathology. Following this wider conception it is interesting to note in the literature the use of such terms as "angina abdominis," "angina cruris," "angina brachialis." In looking over my list I find a considerable number of instances in which prominent features of the disease were extra-pectoral or there were symptoms suggestive of vascular disturbance in distant parts. It is difficult to make a classification of the symptoms, and certainly one cannot take for granted that they were always due to vascular crises. But I may roughly group the cases into those with (A) peripheral, (B) abdominal, (C) pulmonary, and (D) cerebral features.

A. *Peripheral angina.*—Heberden first recognised that the patient could die from angina pectoris without any pain in his chest. In his *Commentaries* he describes the case of a man, aged 60, who began to feel, while walking, an uneasy sensation in the left arm, never while in a carriage. After continuing for ten years it would come upon him two or three times a week at night, and he would have to sit up for an hour or two. In all other respects he was healthy and strong, and he never had a pain in the chest. Then he added: "This disorder, its seat excepted, perfectly resembled the angina pectoris, gradually increasing in the same manner, and being both excited and relieved by all the same causes. He died suddenly without a groan at the age of 75 years." In Lord Clarendon's case, as noted by Blackall in his famous book on *Dropsies*, the pain was always brachial, even in the fatal attack.

Four cases in my series presented in some degree this brachial peculiarity. In L. N. H., aged 58, the pain began in the middle of both forearms; when walking he would be warned at once of the onset by sharp pains appearing simultaneously about the middle of both arms; if he stopped to look at a window the pain would disappear, if he attempted to proceed it would increase in severity, and he would begin to feel faint; sometimes then the pain would extend to the chest. The first occasion on which I saw him the pain was entirely in the arms; there was no cramp, and he pointed to a position about the centre of each forearm. There was moderate sclerosis of the brachial and radial arteries. In Mr. D., aged 42, the pain always began in the left elbow where it would sometimes stay, though more frequently it extended up the arm to the heart. Dr. M. C. G., aged 69, insisted that the pain which "pulled him up short" on exertion was in the elbow, or rather at a point 2 inches above it, in the biceps muscle itself. So severe would it sometimes be that he would turn pale and sweat. He subsequently died in an attack.

In three instances the chief symptom was at first in the legs. My distinguished friend, Dr. W. W. J., for many years the leading physician of Washington, D.C., at the onset of the attacks had remarkable pains, with numbness in the left leg; there were no cramps, but the pains were sometimes intense, and he called it his "signal symptom." In a letter containing a very accurate analysis of his attacks he says that the painful sensations in the left leg seemed to initiate the outburst, though sometimes the pains remained limited to the leg. In F. L., aged 58, whom I saw in many attacks, some of maximum severity, they began with pains in the legs. I never saw a patient so drenched with sweat in the paroxysm, he was literally dripping, and could not have been more soaked had a hose been turned upon him. As he expressed it, he did not know which caused him the greater trouble, the painful cramps in the legs or the pain in the chest. He had indeed typical features of intermittent claudication, as the pain, sometimes with, sometimes without, actual cramp in the muscle, would pull him up short in the street.

It is a noteworthy circumstance that all the vaso-motor phenomena, even to fainting, may be associated with extra-pectoral pain. Colonel E., aged 66, had agonising attacks of pain without cramp in the left leg, in the first of which he turned pale and fainted. The true nature of the attacks was not recognised until he began to have substernal pain and angina pectoris, in an attack of which he died.

I witnessed a remarkable attack in which the pain was limited to the right pectoral muscle. The man, aged 55, when shown into my consulting-room had an ashen grey colour and looked faint. He said at once: "Doctor, I am in an attack." Though his pulse was 172, and he looked faint and was sweating, he preferred to walk about. I was apprehensive lest he should drop dead on the spot. He pointed to and grasped the right pectoral fold, repeating the words, "Here is all my trouble." He had had attacks of great severity for four years. The pain always began in the right pectoral muscle, and sometimes stayed there, but if very severe it went down the right arm. In the attack in which I saw him the skin was not hypersensitive, there were no tender spots anywhere, but the muscle itself was very sensitive; he winced at once when it was touched. It would remain sore sometimes for hours after the attack had passed off.

In only one of these cases were the features those of intermittent claudication, angina cruris, as Walton terms it, which has close analogies with angina pectoris, particularly its paroxysmal character, the pain, which is not necessarily associated with cramp, and the cessation when the patient comes to rest. In a syphilitic woman, aged 37, admitted on March 7th, 1900, with severe angina, in two attacks in December the left foot and leg became œdematous and painful. The arteries and veins of the limb were normal.

Pain in the *testicle*, sometimes with swelling, is mentioned by one or two writers as an occasional feature during the attack. In the case of our late colleague, Dr. C., the pain was sometimes very severe in this region, and the attack would even begin there. It is possible that the pain may be limited to the testis; at any rate, the following is a very suspicious case. A man, aged 56, while speaking at a meeting, was seized with an agonising pain in the left testis, and became pale and faint; there was no swelling, no tenderness, no radiation of the pain, but his condition must have been very serious, since the doctor did not think he would survive. He had attacks at intervals of every two or three months. Four days before I saw him he had a very severe paroxysm, in which he became faint and sweated, and for the first time had a sense of tension and distress just below the ensiform cartilage. He was extremely feeble and collapsed, and the attack lasted for 12 hours. He had slight arterio-sclerosis, with accentuation of the aortic second sound.

B. *Angina abdominis.*—That angina attacks may begin in the abdomen has long been recognised. Several writers have called attention to the similarity of the gastric crisis of locomotor ataxia to angina. In my series there have been three groups of cases with abdominal symptoms. An important form is met with in nervous and hysterical patients with the combination of throbbing, tender, and mobile abdominal aorta and recurring crises of gastric pain. The pains may radiate to the chest, or gastric and thoracic crises may alternate, as in an extraordinary case in a lad aged 17—"a bundle of nerves"!—who nearly died in the paroxysms. The extreme tenderness of the aorta in some of these cases led Potain to suggest the existence of aortitis, while the radiation of the pain, &c., has given the term *syndrome solaire* to the group of symptoms. In some 10 or 12 cases in men of middle age the anginal symptoms at first were abdominal, and the true nature was not suspected. In many cases the attack starts in the upper abdomen. As-

Mr. C. expressed it, "a wave starts here"—pointing to his stomach—"and passes up with a feeling of fright, and when it gets beneath the breast-bone it cuts me short as though the machinery of life had stopped." In my "Lectures" I have reported several cases of the pseudo-gastralgic type, as Huchard calls it, but in reality Leared in 1867 first called attention to these disguised cases. The difficulties in diagnosis may be very great, particularly in the form which resembles the tabetic crisis. A Mr. P., aged 58, seen on Feb. 11th, 1897, had attacks of cramp-like pains in the upper abdomen passing to the back, in which he became completely prostrated and sweated and vomited, and only morphia gave relief. The pains began just under the ensiform cartilage but never ascended. He had not had syphilis, the knee-jerks were present, the pupils were normal. He had aortic insufficiency and sclerotic arteries. There was no lead-line. He was a very healthy, robust man, only every month or few weeks he would be prostrated in an attack, in one of which, Dec. 20th, 1899, he died. In three other instances in the series gastralgia had been diagnosed, in one the malarial form, but the character of the attacks altered and left no doubt as to the nature of the trouble. And lastly, I have a group of three cases in which attacks of typical angina pectoris were complicated with abdominal pains, like gall-stone colic and jaundice. The combination may be quite accidental, but abstracts of the cases are worth recording.

Captain M——, aged 60, seen Jan. 13th, 1897, had had in 1890 attacks of angina pectoris of the most characteristic type. In 1893 he had pains in the region of the liver with jaundice; these recurred at intervals. and he was operated upon by Mr. Mayo Robson at Leeds, May, 1895, but no gall-stones were found. He consulted me for pain in the abdomen, crossing from one side of the costal arch to the other, like a band or constriction; at times it became very aggravated. Food made no difference, and there was no tenderness on pressure and no enlargement of the liver. While more or less constant the abdominal pain comes on in spells, and sometimes makes him feel faint and sick at the stomach.

Mr. A. W.——, seen April 4th, 1903, aged 59, In the first attack of angina four years ago had pains in the abdomen of great severity, and he was jaundiced after the attack. It was supposed to be gall-stones. Four months ago he had a very bad night, with attacks of pain in the chest and much discomfort in the epigastrium; on the following day he was jaundiced. The curious thing was that he could not differentiate the pain in this epigastric attack from the furious seizures of definite angina, in many of which I saw him during the six weeks that he was in hospital. He died in an attack of angina some months later.

Dr. J. C. T., aged 64. After a day or two of indigestion and irregular pains had on Oct. 27th a severe attack of pain in the chest, with extension into the arm, evidently of great severity. On the 30th the pain was more abdominal, and he was very sensitive over the region of the gall-bladder; on Nov. 1st and 2nd the pain was abdominal, and tenderness marked over the gall-bladder, and he had become jaundiced. This relieved our minds, as we were afraid from the character of the early attacks that it was angina. By Nov. 9th he was very much better, and the pains had almost disappeared, and at 6 o'clock when I saw him he seemed nearly well; but at 8 o'clock, while his son and the nurse were in the room, he gave one or two short, quick, sighing inspirations, his head dropped on his chest, and he died instantly.

C. *Respiratory features of angina.*—The pulmonary symptoms of the attack have been carefully studied by many observers. A man may die from angina without any change in the respiratory function other than abrupt cessation; indeed, the death may be at the medulla, so suddenly does respiration cease, even for nearly an hour before the heart ceases to beat. Ordinary cardiac asthma is a common symptom—the orthopnœa, the light cyanosis, and the feeble pulse of myocardial weakness. Cheyne-Stoke breathing is not infrequent, and in the status anginosus may be present for weeks. But there is another type much more characteristic and quite unlike the ordinary cardiac asthma: it is paroxysmal, occurring abruptly, often at night; it is not associated necessarily with signs of myocardial weakness; it is accompanied with very high tension; it may alternate with attacks of angina or come on in one, and sometimes bears the stamp of an acute œdema of the lungs. There are four special features.

First, the universal distension of the lungs in an acute emphysema as Goodhardt described it; the inspiratory excursion is limited; expiration is prolonged; in one patient the chest even looked larger; and the increase in the volume of the lungs may be demonstrated by percussion. The condition is what von Basch has called "lungenschwellung" and "lungenstarrheit," a state which he believed to be due to distension of the capillary network, with swelling of the alveolar walls.

Secondly, the rapid onset of the physical signs, like those of an acute attack of bronchial asthma, wheezing, fine bubbling râles, and prolonged expiration. Within ten minutes the attack may be in full swing.

Thirdly, acute œdema of the lungs may follow, indicated by a great increase in the bubbling râles and the rapid expectoration of large quantities of a thin, frothy, sometimes blood-tinged, liquid. The attacks may be transient, lasting only for a few hours, and give a very special pulmonary stamp to the attack.

Fourthly, increased blood pressure, rising to 250 millimetres and over (Riva-Rocci). In one case (Dr. J. H. K.) the record was 340 millimetres during an attack, in the intervals it was 250. On three occasions he brought up large quantities of a clear fluid, with blood.

In May, 1899, I saw on several occasions with Dr. Atkinson Mr. G., aged 65, who had had his first and very characteristic attack while walking up a hill on April 27th. It was probably an attack associated with acute infaret of the ventricle, as a pericardial rub was detected the next day. On the first occasion I saw him he was propped up in bed, wheezing audibly, expiration was prolonged, and cardiac flatness was obliterated. The pulmonary resonance on the right side extended to the costal margin. He was coughing and bringing up a considerable quantity of frothy, liquid expectoration. The pulse was full, regular, 100, and of high tension; the heart sounds were muffled and obscure; he had at the time no pain, but this acute condition of emphysema had followed the attack in the morning; within a few hours it had disappeared and Dr. Atkinson thought that there was a definite reduction of the lower limits of the lungs.

The condition may be associated, as just mentioned, with extraordinarily high tension. A man, aged 43, was admitted to Ward C, Nov. 17th, 1900, complaining of shortness of breath and attacks of substernal pain. He weighed 190 pounds, was a very heavy eater, and had not had syphilis; the blood-vessels were sclerotic; he had loud aortic second sound; the blood pressure was very high. I saw him in an attack of pain on Dec. 11th; he was not cyanotic, the pulse was regular; very high tension; the heart sounds were clear, loud, and sharp; he then turned pale and sweated, and the pulse at the wrist became almost imperceptible. He began to wheeze, and in a few minutes one heard on auscultation high-pitched sibilant râles mixed with fine crepitations. These were very intense and sounded close to the ear, suggesting at first a friction rub; the percussion note over the lungs became hyper-resonant and on the right side reached almost to the sternal margin. A hypodermic of morphia relieved his pain. The hyper-resonant condition of the lungs persisted for two days; a remarkable change in his facial expression occurred, as after the attack he had for days retraction of the upper eyelids. A Mr. C., aged 62, who had very characteristic attacks of angina pectoris, had several severe but transient pulmonary attacks, in one of which he had hæmoptysis.

One of the most remarkable cases was that of a coloured woman, aged 54 years, who was in the hospital for several weeks, and who died in an attack on Jan. 28th, 1897. She would wake at night from a sound sleep with pain in the region of the heart, and in five minutes she would have urgent dyspnœa, noisy respiration, with coarse râles everywhere over the chest. A hypodermic of morphia with atropine would quiet her within an hour or two. She was under observation on and off for more than a year, and she had scores of the pulmonary attacks, sometimes with pain but very frequently without. In the severer attacks she would have strong tonic contractions of her fingers and hands. We often discussed the character of this paroxysm, as it was suggested that she might have had asthma previously. In the suddenness of the onset and the rapidity with which the attacks came on, the limited duration and prolonged expiration suggested bronchial asthma. She did not always have a cough and rarely had expectoration.

One case in the series had indications of consolidation of the lower lobe of one lung in connexion with an attack, and curiously enough, while preparing this lecture, Dr. T. McCrae, knowing my interest in the subject, sent notes of the case of a man, aged 35 years, who died from angina. The attacks yielded promptly to amyl nitrite, but in the last one there were acute pulmonary symptoms for 24 hours, oppression, cough, &c., and scattered areas of consolidation with tubular breathing and râles.

A case with extraordinary respiratory features was that of Captain H., whom I frequently saw with Dr. McCormick. A man of extraordinary vigour and health, aged 71 years, and of great intelligence, he had, as is not uncommon, studied his case most closely. For years he had had to be very careful in doing all the small actions which necessitated stooping, as in tying his shoes or in getting into his bath-tub, as he would experience such intense pressure in the chest which would render him immobile for a moment or two. Then he had a second variety, which corresponded to ordinary severe attacks of angina, terrible paroxysms of great severity. And thirdly, he had respiratory attacks, in which, waking from a sound sleep, he would gasp as if every breath would be his last, and then he would choke and begin to cough; the respiration became wheezing and the piping râles came everywhere over the whole chest just as in a severe attack of asthma. In from 10 to 15 minutes he would bring up large quantities of frothy, sometimes blood-stained, expectoration, as much as a large teacupful. He died in an attack of angina.

D. *Cerebral features of angina.*—Unconsciousness may occur during an attack. Epilepsy, believed by Trousseau to be closely related to angina, occurred in two cases, in neither in direct connexion with the paroxysm. Certain of the reported cases may have been the Stokes-Adams disease, in which the epileptiform attacks are sometimes preceded by pain about the heart. In only three cases transient cerebral symptoms occurred during attacks. T. S., aged 51 years, had had for three years occasional paroxysms. On Sept. 20th, 1901, while in a seizure, he had transient numbness of the left hand and foot and side of the face. The left leg dragged. These symptoms disappeared in the course of the day, but he complained of his eyesight and was found to have lateral hemianopia. The condition resembled closely the transient cerebral attacks so common in arterio-sclerosis.

Aphasia is a rare complication. I. B., aged 63 years, seen Jan. 14th, 1900, had had angina on and off for five years. In four attacks he had had transient aphasia without losing consciousness. In a recent attack he was speechless for an hour, and once eight hours passed before he could say a word. Dr. McKnew said that there was no trace of paralysis and that he could understand everything and write. He had widespread sclerosis of the vessels. He died in an attack.

A remarkable feature existed in the case of Mr. M., who in the attacks had an intense pain at the back of the head, inside he insisted, and he would hold his head between the hands to avoid pain on movement.

L. S., aged 31 years, was admitted on Feb. 21st, 1898, with paroxysms of severe angina, which had recurred for several years, usually following exertion. Five attacks occurred in the month before admission, one with unconsciousness. He had not had syphilis, nor was there heart disease. He had had on several occasions temporary loss of power in the left hand with numbness. In the paroxysm just before admission, which was of great intensity, the left arm and leg were paralysed for two days. The face was not involved.

I have dwelt upon these extra-cardial features with a special object, as they throw light upon the essential nature of the disease, which I propose to discuss in the next lecture.

NOTIFICATION OF CEREBRO-SPINAL FEVER (EPIDEMIC CEREBRO-SPINAL MENINGITIS).—In accordance with the provisions of Section 56 of the Public Health (London) Act. 1891, the London County Council has issued an order requiring, for a further period of 12 months as from and including March 13th, 1910, the notification of cases of cerebro-spinal fever (epidemic cerebro-spinal meningitis) in the Administrative County of London. The order, which has been duly approved by the Local Government Board, will come into operation as from and including March 13th, 1910, the date of expiration of the order at present in force. The Council has considered whether the term "cerebro-spinal fever" includes, for the purposes of notification, cases of posterior basal meningitis, and, on the advice of a committee appointed by the President of the Royal College of Physicians of London, has decided that, for notification purposes, the disease at present known as posterior basal meningitis is included in the term "cerebro-spinal fever." That term, however, is not to be interpreted to include cases of meningitis due to tuberculosis, syphilis, middle-ear disease, or injury. The clerk of the Council states that the services of Mr. W. M. Wanklyn, the Council's assistant medical officer of health, Public Health Department, 8, St. Martin's-place, London, W.C., will be available with a view to the investigation of cases in association with medical practitioners, should they so desire.

A Presidential Address

ON

THE MEDICAL EXAMINER IN LIFE ASSURANCE.

Delivered at the Annual Meeting of the Life Assurance Medical Officers' Association on Feb. 9th, 1910,

BY HECTOR W. G. MACKENZIE,
M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO ST. THOMAS'S HOSPITAL, LONDON; AND TO THE HOSPITAL FOR CONSUMPTION, BROMPTON.

GENTLEMEN,—On entering on office as President I must first thank you for the honour you have done me in electing me to this position, and I need hardly say that it will be my endeavour to discharge its duties so as best to further the interests of our association. The society has been in existence nearly 20 years, but is still in the pristine vigour of youth, for is not our retiring President (Dr. Glover Lyon) its founder? To the founder we are now under an additional obligation, for as the President of the society during the last two years he has taken an especial interest in its welfare. He has had the foresight to recognise the important part which sickness and accident assurance will play in the future, and during his reign of office we have enlarged the scope of the society, so that it is now concerned with the medical aspect not merely of life, but of every form of assurance.

The Employers' Liability Act has introduced many difficult problems, and the important communications of Sir Thomas Oliver and of Dr. R. J. Collie dealing with these have excited much interest in the assurance world. Some of our members perhaps may think that we have devoted more than its due share of the time to accident assurance, but they may rest assured that life assurance will always hold the foremost position in the deliberations of our association.

SUBJECTS FOR DISCUSSION.

During the present year we are about to consider several subjects of real practical importance. At the next meeting it has been arranged that we shall have a discussion on Disease of the Teeth in Relation to Life Assurance, and the subject will be introduced by a paper from an eminent dental surgeon, Mr. J. F. Colyer. I need not enlarge on the importance to health of the body of sound teeth and gums. In many of the medical report forms the examiner is specially asked to report on the condition of the teeth and gums. Unhealthy or defective teeth are responsible for much chronic dyspepsia and consequent ill-health, but there is one disease of great prevalence and of vast importance affecting the gums primarily and the teeth secondarily which at the present time is ill understood by many members of our profession—Riggs's disease. You find the margin of the gum red and swollen and pus exuding from the sockets of the teeth. A slight degree of pyorrhœa may be passed over, but a high degree is incompatible with a good condition of the general health and must always be considered as a source of danger. In my opinion no life with a decided pyorrhœa is a good risk, and acceptance should be postponed until the mouth has been put into a healthy condition. When I come across a pale, unhealthy-looking subject I always suspect among other things this disease. When a proponent who wears artificial teeth is under examination he should be asked to remove them. I have frequently found that underneath the plates there are stumps with pus oozing from the sockets. Many a case of obscure health is due to a septic condition of the mouth, a condition which, because unsuspected, is not looked for and not discovered. I accordingly consider the discussion of this subject as of great importance from an assurance point of view. I hope that we shall be able to secure the attendance and elicit the opinions of other dental authorities besides Mr. Colyer, and that many of our own members will take part in the discussion of the subject.

At our third meeting Dr. F. Parkes Weber will read a paper on Traumatic Pneumonia, Traumatic Pleurisy, and Traumatic Tuberculosis. This subject is one of growing importance in connexion with accident assurance, and it is fraught with considerable difficulty. It is common knowledge that an injury to a bone or a joint may be followed by a tuberculous disease, or that injury to a lung or pleura may be followed by tuberculous or pneumococcic or other microbic disease. But in the first place the disease may have been there before the injury, and in the second place the injury may play only a minor part in the production of the disease. It is in cases of this kind that a medical assessor would be of the greatest value in arriving at a right conclusion.

The question of insurance before operation is going to be presented to us by Mr. McAdam Eccles at our fourth meeting. At the moment I think the attitude taken up by insurance medical officers in cases in which an operation is to be performed is to advise postponement until after recovery from operation. The great difficulty in most cases is to assess the risk, but there are many operations in which one knows that the risk is but slight. The operation, for instance, for removal of the vermiform appendix during the quiet stage is one in which the mortality is about *nil*. One can conceive many cases in which it would be an enormous comfort to the person about to be operated on to have an insurance policy taken out before the operation. Therefore I think the subject is one on which discussion is needed, and a new department of life assurance might possibly be opened up with benefit to the public and the offices alike.

SOME PROBLEMS CONNECTED WITH LIFE ASSURANCE.

Our association was founded to concern itself with the medical aspect of life assurance, for the increase of knowledge, and for the promotion of greater unity of opinion. How far we have succeeded in bringing about greater unity of opinion it is difficult to say. I think the subject of family history might profitably be reconsidered, especially with regard to family history of consumption. Most of us, I think, follow certain traditional rules as regards rating for family history. I throw it out as a suggestion whether in spite of family history a man of apparently good physique and sound constitution might not be sometimes taken at ordinary rates. In recent years we have had valuable additions to our methods of discovering latent tubercle. Might we not sometimes say to a proponent who objects to pay an extra on account of family predisposition to tubercle, "Are you willing to be tested as to your freedom from tubercle? If you pass the tests I shall be prepared to recommend you at ordinary rates." Only the other day I was asked to see a young man who had asked for the hand of a young lady in marriage. The father of the young lady had demurred, because he had a bad family history, and said he would only consent on condition that the young man would allow the doctor to test him for tubercle, and provided he passed the test. Unfortunately for him the test proved positive. I was called in to give an opinion as to the state of the lungs and the meaning and value of the test. I have employed the various tests for tubercle very extensively, and I may say that I consider a negative von Pirquet in an apparently healthy subject is very strong evidence of the absence of tubercle. If, however, I get a positive von Pirquet, before pronouncing definitely that the person is tuberculous, I should seek corroboration by other methods.

The life-assurance medical officer has often to deal with problems which are not purely medical. If it were simply a question of passing lives which were without flaw and of rejecting those presenting some flaw either in the family history or in the state of health or constitution, the duties would be much simpler than they are. A large number of persons proposing for insurance fall short of the ideal standard, their family history is not altogether satisfactory, or there is some element in their past history or present condition which renders them under-average lives. The principal difficulties in the life-assurance medical officer's work lie in dealing judiciously with these cases. It is here that experience is most needed.

It is useful to remember that for healthy persons entering at a certain age there is an average duration of life; at 20 approximately forty years, at 35 thirty years, at 50 twenty years, at 65 ten years. We can say, roughly, what the expectation at any age is by subtracting the age from eighty and taking two-thirds of the difference. Now in some cases we consider that there is an extra risk during the earlier years that the policy is in force, in others that the extra risk is not so much in the early years as in the later ones. For instance, where we find a family history of phthisis, what we fear is not so much the later years of the policy as the early ones, while in a person with gouty tendencies what we fear is that he will fail in the later years. Now there is a considerable difference between these two classes of risks. It is here that the kind of policy is material to our mode of rating. Where the extra risk is one affecting the early as well as the later years an extra must be imposed, whether the policy is a whole-life one or an endowment. Where, however, there are extra risks, chiefly after middle age, then an endowment at ordinary rates may sometimes be offered instead of a whole-life policy with an extra. There is an idea in some quarters that an endowment policy at ordinary rates will cover a variety of extra risks, but it will not cover the extra risk due to tuberculosis or poor physique. An endowment at ordinary rates will sometimes suit a case with gouty tendency or where obesity or some other condition makes it unlikely the life will go on to old age. When extras have been imposed they should not be removed later unless it appears that the reason for their imposition has been temporary and has passed away. Even then it is a question whether it is sound policy to remove them. Extras are calculated on the supposition that they will continue during the run of the policy. If they are to be removed when the life turns out well the office will not be sufficiently compensated for the cases that turn out badly. Larger extras would require to be imposed if it became an understood thing that they might be removed later on. Applications for removal of an extra should not be encouraged. It may be quite possible, however, at a later period to grant a new policy at ordinary rates, although originally an extra has been charged.

The medical examiner for life assurance must be thorough, but he should not be finikin. He must take a broad view of every case which comes before him. A healthy appearance, a good physique, a due proportion between height and weight, temperate and regular habits, and the absence of any signs of organic disease are of prime importance. In most cases intemperance tells its own tale to the medical examiner. The physiognomy, the tongue, the manner are of significance. An inquiry into the habits should always be carefully conducted. It is no use asking a person if he is sober and temperate and always has been so. Personally, I have never met anyone proposing for life assurance who admitted the reverse. It is very seldom that the friends who are given as references describe the proponent as other than sober and temperate. It is much more useful to find out from the proposer what kind and quantities of alcoholic drinks he takes and the time of day he takes them. An inquiry of this kind is put on the medical forms of a good many offices, but some have a sentimental objection to adding this to the list of questions. Still, whether the question is there or not, I think the medical officer will best get at the facts on which to form an opinion as to the habits of the proponent if he makes such an inquiry. The person who makes a habit of taking stimulants early in the day will generally have taken too much before bedtime.

It is a number of years now since our association drew up medical forms for use by the chief medical officer and the medical examiner respectively. I think it would be interesting to find out to what extent these forms have been adopted or have served to modify the forms in use by the offices. Our hope was that the forms we prepared would lead in time to the adoption of a general form by the offices, or at any rate would help to diminish the great diversity of forms in use at the offices. It would certainly be a great convenience if a common form were used. A great deal of time and work was devoted to the drawing-up of the forms, and I think the subject of the forms might be reconsidered. The English and Scottish Law, the National Mutual, the London and Lancashire, were among the offices which adopted our forms. Probably there have been others of which I do not know.

It is for obvious reasons not generally considered desirable that the medical examination should be made by the private medical attendant. It is the custom, however, with many companies to refer to the private medical attendant for a report as to past illnesses, habits, and state of health, except in cases where the insurance is for a small amount and the premium does not warrant the extra expense involved. This reference is in the interests of the assured as well as of the office. The report from the private medical attendant may enable one to pass a life which otherwise was doubtful, or it may reveal some material facts which modify the previous recommendation. The refusal of a medical attendant to give a report is not common, and is apt to result in a suspicion that he knows something which would prejudice his patient's life for assurance. Only the other day a doctor who had been referred to wrote: "As a result of my experience in these reference cases I have decided in future never to give any information about private patients of mine, so you must please excuse my declining to do so." Once I remember, in a case where the policy was for a large amount, the private medical attendant when referred to wrote to say that his fee for a report was 10 guineas. I knew the doctor, and my belief is that he asked a fee which he thought would be prohibitive to avoid the difficulty of giving a report which might prejudice his patient. The company declined to pay more than the usual fee, and so the matter dropped. The impression, however, left in my mind was that there was something against the life.

The question of fees is one which we have never considered, and I think wisely so. Every medical practitioner has a right to say what his fees are to be for doing a certain amount of work, but I think we should all deprecate any attempt to introduce a scale of fees proportional to the value of the information about a person's state of health which the practitioner possesses. The practitioner must be consistent. He must not pick and choose the cases in which he is going to give information and those in which he is going to withhold it.

It would be an interesting subject for a paper to compare the mortality experience among lives passed by chief medical officers on their own examinations and those passed by the occasional medical examiner. The greater experience, and presumably the greater skill, of the chief medical officers ought to tell in favour of the companies, and especially should this be the case in affections of the heart and lungs. We are all agreed in our desire that the best available men should be selected as medical examiners. But there are sometimes plausible reasons brought forward why the life should be examined by someone whom we do not consider to be the best available man. Agents I am afraid sometimes have the idea that the best man is too particular and the life will be passed more easily by someone else. The late Dr. Thomas Harris of Manchester contributed a valuable paper on the subject of provincial medical examiners some years ago, and I think that paper or a similar one might profitably be circulated among insurance agents.

The subject of re-assurances is one which must interest all of us, and we should, I think, welcome a paper dealing with the question. It is with regard to re-assurances that unity of opinion is most desirable. It is, of course, usually a question of "take it or leave it," and that so many re-assurances, sometimes spread over many offices, are effected shows that unity of opinion must be the rule. I think it would be valuable if we could obtain the mortality experience of a number of offices as to re-assurance risks. Re-assurances are, of course, only effected for large sums, and one may get a false impression by having claims which fall in early brought before our notice, while at the same time we are not cognisant of the cases which are running a favourable course. I sometimes think that insurances for large amounts are more leniently considered than those for small.

We have devoted in the past a good deal of time to the discussion of the subject of albuminuria, and I do not know that we have arrived at any very satisfactory solution of the difficult problem which it presents. Albuminuria is one of the most common obstacles to the acceptance of a life for assurance. I am convinced that many of the lives which we refuse or postpone on account of albuminuria are assurable, but with present knowledge I do not see my way to deal with them otherwise than we do at present.

THE SUBJECT OF CLAIMS.

There are many other problems which are constantly coming before us, and I had hoped that I might have been able to touch on a number of these to-day, but I must leave these and take up in conclusion the subject of claims. It is the duty of the chief medical officer to examine the claims and see that from a medical point of view all is in order. Claims are very seldom disputed on medical grounds. The cause of death may be cirrhosis of the liver, or one of the other effects of chronic alcoholism, and inquiries made after the claim is sent in may show that the proposed was intemperate in his habits at the time the insurance was effected. But experience teaches that even in that case the company is not likely to obtain a favourable verdict should the claim be resisted and an appeal be made to legal tribunals. The results of litigation show how important it is that every care should be taken before the policy is issued to get at the facts. Sometimes the alleged cause of death seems unsatisfactory. I remember one claim which excited some suspicion at the time. A claim was sent in three months after death. The policy was on the life of a lady about 30 years of age whom I had examined myself only some few months previously and passed as first class. When the medical certificate came in the cause of death was given as "typhoid fever; duration two days." I wrote to the medical man who had given the certificate and the account he gave me was not very satisfactory. He said the first day the lady was taken ill he thought she was suffering from piles and he called in a well-known specialist who found nothing amiss. On the second day a well-known physician, whose strong point certainly was not diagnosis, was called in, who said he thought it was typhoid fever, and the same day the patient died. I was not satisfied, but I did not see how three months after death I could get additional information, and so the claim was paid.

An interesting claim came before me quite recently. The policy had been effected just 12 months before. The certificate gave the cause of death as Bright's disease and the duration one year. Everything in the medical referee's report when the assurance was effected was satisfactory, but on looking through the papers it was noticed that there was a delay of a month between the filling in of the first part of the report—namely, the information communicated by the patient—and the second part—the result of the examination—and it was stated that the delay had been due to the proponent having a cold when he first presented himself. Now the private medical attendant stated that the deceased first consulted him because albumin had been found in his urine by the medical man who examined him for assurance. There was no record of this in the report, and it appeared that the fact that albumin had been found in the urine, when the assurer first presented himself, had been suppressed. The practitioner said in explanation that he thought the albumin in the urine was the result of a chill, and he did not think it worth while to mention it, as there was none on the second occasion. The company could do nothing but pay the amount of the policy, which would never have been effected if the medical examiner had properly reported the facts.

It is now some 15 years ago that I had to do with a case of very great interest from a medical point of view, and one which ought to be put on record, as it serves to illustrate some of the problems which come before us in connexion with claims. The story is a long one and time is short, but I will endeavour to put the salient facts before you briefly and succinctly. In the month of June, 1895, an insurance was effected with one company at ordinary rates, in the month of July a similar policy was taken out with another, and in the month of September of the same year the companies were informed of the death of the assured from "galloping consumption." The person insured was an unmarried lady, aged 33 years, residing on the continent at a villa near a small town which I shall call Goluna. The medical examinations had been made by two independent medical practitioners of good standing, one from Goluna and the other from a neighbouring cathedral city. Both examiners described the lady as healthy and of robust constitution, and a life which might be accepted with confidence for assurance. Her height was stated to be 5 feet 1 inch and her weight nearly 9 stones, and her hair was a reddish blond. All the organs were sound. Her father had died at an early age, but the cause was stated to be a wound received in battle, and her mother had died shortly after from grief at her husband's death. She had a brother and a sister living, and in good health. She was most regular and temperate in her habits. It was stated that she had never suffered from any illness, and had never had to consult a medical man. The amount of the insurance in each case was £4000, and the form a 25-year endowment. The object of the assurance was to provide for relations dependent on her. Everything seemed thoroughly satisfactory for the acceptance of the life. The date of the medical examinations was June 19th. The first insurance was effected soon after that date. The second insurance, on a certificate of continued good health, was not effected until July 23rd. On July 29th a medical man from Goluna was called in for the first time to attend the lady who, he was told, was seriously ill with lung disease. Previous to this date he had never known or even heard of the existence of the lady. He found her a very delicate-looking subject, suffering acutely from a severe pain at the base of the left lung, with high fever. On August 3rd the alarming symptoms ceased in part, only again to increase. Towards the end of August he discovered "acute pneumonia in the middle lobe of the right lung." On Sept. 12th she was seized with "general collapse of the right lung," and, in spite of all he could do, she died on Sept. 16th according to his certificate from "galloping consumption." The facts of the case were submitted to me, and I was not satisfied, for acute pneumonic phthisis, or galloping consumption, seldom suddenly attacks persons previously robust, and carries them off in seven weeks. Inquiries were made on the spot and these brought out most suspicious circumstances. The medical examiner from Goluna stated that about three or four weeks after his examination he had seen the handsome lady he had examined at the railway station, apparently starting on a journey, in the company of a gentleman at whose house he had made the examination. It also appeared from the evidence of servants that the assured had been confined to the house, and mostly to bed, for months before she died, and had been known to be suffering from lung disease for several years. While this sick person was lying ill in the house, another lady, robust and handsome, had arrived as a visitor, and it seemed probable that this lady had been substituted for the invalid and had passed the examination and been favourably reported on by the two medical men. This handsome lady unfortunately in the month of July or August came to an untimely end. She went in the company of the man in whose house the assured lived to a well-known summer resort in the mountains, and while there fell out of a fourth storey window of the hotel where she was staying and was killed, and there was buried. These facts clearly pointed to personation, and there was every reason for refusing to pay the claim, but in a foreign country where witnesses are not to be trusted it might prove very difficult to obtain evidence which would satisfy the legal tribunals in case an action was brought against the companies. It was, therefore, very important to strengthen the evidence for the companies in every possible way. There was first the personation. The lady who had passed the examination by the medical men could not be produced because she was dead. I was asked whether anything would be gained by having a post-mortem examination on the body of the assured lady. Would the practitioner who had made one of the medical reports be able to say whether this was the body of the lady he examined, or not? Would it be possible to say from a post-mortem examination whether the deceased had been the subject of old-standing disease, or not? To this I replied that I considered it to be extremely improbable that the practitioners who made the medical reports could certify by inspection that the body was not that of the lady they examined. Seeing that several weeks would have elapsed since death, I considered that the features would have been unrecognisable. I said one might find evidence of old-standing disease of lung which would be valuable as showing that the deceased would not have been in a sound state of health when the examination took place. I added, however, that one must be prepared for a condition of decomposition which would prevent the recognition of morbid changes of even old standing. While it was possible that a necropsy might furnish valuable evidence, it was also possible it might afford no help to the case at all. In the former event the case would be strengthened, while in the latter I did not think it would be damaged. It was then decided that I should go to Goluna and make the necropsy in the presence of the medical man who attended in the last illness, and of the medical man from Goluna who made the medical report at the time of the insurance. I accordingly proceeded there, and as soon as it could be arranged the examination took place. In the presence of official delegates appointed by the Government the exhumation was effected of the coffin containing the body of the deceased. It was placed on a vehicle and taken from the cemetery to the dwelling of the deceased, and placed in an outhouse. The official delegates testified that "both the wooden coffin and the zinc shell were found conformable with, and equal to, the state in which they were consigned to the grave." When the body was placed on the table the medical man who had attended in the last illness declared, as I anticipated, that he no longer recognised in the corpse the person whom he had had under his care, but he recognised the dress and clothing as those she had worn. He stated that the patient he had attended had been a little bald, but that her hair during life had been lighter in colour. The following is the report which I wrote out at the time. "Report of the autopsy on the body of ——, held 15th October, 1895. The body was that of an emaciated woman. Height 1·6 metres or 5′ 3″. (The height of the person examined was 5 feet 1 inch.) The face was swollen with emphysema, so that the features were presumably unrecognisable. There was a good deal of discolouration of the skin of the body, which, however, was otherwise in a good state of preservation, considering that 29 days had elapsed since death. The top of the scalp was bald; the hair was of a brownish colour. (The hair of the person examined was a reddish blond.) The age might have been from 35 to 45. The important pathological condition was as follows: *Both pleural cavities were completely obliterated by old adhesions*, which were particularly firm at the apices and adjoining parts. The diaphragm was very firmly adherent to both lungs. Both lungs were very extensively diseased. *Both upper lobes were occupied by large cavities which were irregular, and ramifying, and were traversed by trabeculæ of fibrous tissue.* Their walls were smooth and fibrous. In addition to these cavities there was other unmistakeable evidence of old-standing tubercular disease of the lungs, fibroid patches of consolidation, caseous tubercles, and smaller tuberculous masses. *The appearances generally of the lungs and pleuræ were consistent only with very chronic pulmonary tuberculosis.* There was nothing of importance to be noted in the condition of the other organs. It was impossible that the person on whom this autopsy was made could have had uninterruptedly good health until seven weeks before death. It was inconceivable that this person could have passed the examination of two doctors less than three months before death, and be reported by them to be pefectly sound and of good constitution." My report was translated to the two practitioners in attendance and we all three signed it. The evidence obtained from the necropsy was thus very satisfactory, and I think materially strengthened the case for the companies. I was surprised to find so little alteration in the lungs as the result of decomposition. The law's delays are great in other countries besides our own, and it was some six years before the courts gave their decision in favour of the companies. They declared that it was proved to their satisfaction that the person assured was not the person examined by the medical men. The assurance companies were deceived by the substitution of a healthy person for a person who was ill at the time of the examination, and had been previously ill for a long time, and who died a short time after the date of the policy. It was attested that the person assured had been in a state of consumption for at least three years. Thus ended this very remarkable case, a case which I think can have had very few parallels in the history of life assurance. But what has happened once may occur again, and the record of this case may be helpful in bringing to light and in defeating other attempts of a similar kind to defraud insurance companies.

THE INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.—The first International Congress on School Hygiene was held at Nuremberg in 1904 and the second in London in 1907. This year the Congress will meet in Paris from August 2nd to 26th under the presidency of the Minister of Public Instruction of France, and almost all civilised countries will be represented. The object of the Congress, to quote the preliminary circular which now lies before us, "is to afford to educators, hygienists, and persons interested in the health and vigour of the coming generations an opportunity to meet, to become personally acquainted, to exchange their ideas, and to compare what is done in various countries." The subjects to be discussed will be distributed over 11 sections, which will embrace all matters bearing upon the health of school children, and in order that these subjects may be as far as possible practically illustrated there will be held in connexion with the congress at the Grand Palais des Champs Elysées a health exhibition which will remain open until August 26th. This exhibition will be free to the public. On the social side of the congress several interesting excursions have been arranged. Further particulars may be obtained from Dr. L. Dufestel, the secretary-general, 10, Boulevard Magenta, Paris, and from Dr. V. H. Friedel, the secretary of the exhibition, 41, Rue Gay-Lussac, Paris.

THE CLINICAL SIGNIFICANCE OF GASTRIC HYPERSECRETION AND ITS CONNEXION WITH LATENT DISEASE OF THE APPENDIX.[1]

BY W. SOLTAU FENWICK, M.D. LOND. & STRASBURG.

THE disorder known as "hypersecretion" is distinguished from all other functional perversions of the stomach by the fact that a secretion of gastric juice occurs in the intervals as well as during the periods of digestion, and is therefore practically continuous. The symptoms that ensue from this condition appear to have been well known to English physicians in the early part of last century, who were wont to describe them under the terms "acid" or "irritative" dyspepsia, but it was not until the publication of Reichmann's researches in 1882 that the dependence of these clinical phenomena upon a continuous secretion of gastric juice became clearly recognised. But although this writer conclusively proved the existence of what he called "gastrosuccorrhœa," considerable doubts were expressed as to the exact significance of the condition, while Schreiber and his followers contended that, owing to the stimulating influence upon the gastric mucosa of the dust, mucus, or saliva which are swallowed unconsciously during the night, even a healthy fasting stomach always contains a certain amount of gastric juice in the early morning. The experiments upon which these latter statements were based are, however, open to criticism, since the stomach was evacuated by the precarious method of syphonage, aided by pressure applied to the epigastrium and voluntary efforts at straining on the part of the patient. When it is remembered how difficult it is completely to empty the viscus of the water used for lavage and how much saliva is usually swallowed during the process, to say nothing of the gastric secretion excited by the contact of the tube with the mucosa, it is hardly a matter for wonder that a conscientious attempt to investigate a fasting stomach with a tube and syphon almost always succeeds in withdrawing a small quantity of fluid from the viscus. The employment of an evacuator, like that invented by Gentile, serves to eliminate many of these sources of error, since it permits the stomach to be completely emptied within 30 seconds, during which brief space of time it is hardly conceivable that more than a few drops of secretion could be produced. Experiments conducted under these conditions invariably show that when a healthy stomach is carefully washed out and emptied overnight and again explored in the early morning, no food or drink having been taken in the interval, it is never found to contain more than 10 cubic centimetres of a neutral or slightly acid fluid. This conclusion tallies so closely with the results obtained by Riegel and other modern investigators who have employed aspiration instead of syphonage that it may be accepted that the existence of more than 20 cubic centimetres of gastric juice in a fasting stomach is always indicative of disease. When, however, a case of true hypersecretion is examined in the same way a very different picture is presented. Thus if the stomach is washed out and emptied overnight, and no drink or food be taken in the interval, exploration on the following morning will show the organ to contain from 50 to 300 cubic centimetres of an opalescent or bile-stained fluid, which gives all the reactions of an active gastric juice, and has a total acidity varying from 40 to 70. The mere withdrawal of its contents appears to stimulate the fasting organ to fresh exertions, for if the aspiration be repeated hour by hour a similar quantity may usually be drawn off on each occasion. These simple experiments are sufficient to prove that under certain pathological conditions the stomach will continue to secrete an active juice without the usual stimulus supplied by the ingestion of food.

In the light of the foregoing facts the symptoms that usually accompany a continuous secretion of gastric juice are easily explained. In mild cases, where the stomach only contains a small amount of secretion in the early morning, very little discomfort is experienced before breakfast, and the patient often states that he is most comfortable at this period of the day; but in the more severe types of the complaint fulness, nausea, giddiness, and perhaps acid eructations ensue as soon as he gets out of bed. It is in these latter cases that the ingestion of warm milk before rising appears to provoke indigestion for the entire day, a result which may be explained by the rapid coagulation which ensues when milk becomes suddenly mixed with a large quantity of a highly acid fluid. With this exception the special symptoms of hypersecretion do not display themselves until the lapse of one or two hours after breakfast, when the proteid constituents of the meal having undergone solution by the unduly active gastric secretion and partial elimination into the duodenum, the percentage of free hydrochloric acid reaches the point at which it is able to excite extreme irritation of the gastric mucosa and probably spasm of the pyloric muscle. Consequently, between 11 and 12 o'clock, the exact time varying with the size and nature of the meal, the stomach becomes gradually inflated with gas, and pain makes itself felt in the epigastrium and right hypochondrium. If recourse be had to any form of proteid food these various symptoms usually abate for a time owing to the combination that ensues between the free hydrochloric acid and proteid base, while a drink of water will often give rise to similar relief by dilution of the hyperacid contents of the organ. It is for this reason that so many sufferers from hypersecretion insist that their dyspepsia only occurs when they require food, and refer the unpleasant sensations to hunger or term them the "pains of hunger." In like manner a large lunch is usually followed by renewed pain or discomfort from between 3 and 5 o'clock in the afternoon, which is always intensified by a cup of tea and may not subside until after dinner. But the most characteristic attack is undoubtedly that which occurs between 1 and 2 o'clock in the morning, when after much disturbed sleep the patient awakens to the fact that he has pain in his stomach, accompanied by flatulence and perhaps acidity, and in severe cases is obliged to vomit in order to obtain relief. The ejecta under these circumstances are somewhat copious, liquid, bile-stained, extremely acid, and afford the usual reactions of gastric juice containing an excess of free hydrochloric acid. When vomiting does not occur recourse to food will often allay the discomfort sufficiently to permit of further sleep. In addition to these symptoms, which are characteristic of all forms of hypersecretion, three local effects of the continuous secretion deserve attention.

In the first place, a constant excess of free hydrochloric acid in the stomach gives rise sooner or later to severe spasm of the pylorus, which makes itself evident not only by pain but also by an obstruction to the passage of food into the duodenum. This condition can alone explain the constant presence of large quantities of food in the organ in the early morning in cases where operation proves that no organic stricture existed.

In the second place, the long-continued immersion of the delicate lining membrane of the stomach in a fluid that usually contains from two to five times the normal amount of free hydrochloric acid excites a violent form of gastritis which is evident at operation by an intense congestion of the mucous membrane accompanied by interstitial hæmorrhages and erosions. These minute ulcers are apt to ooze blood and when they are exceptionally numerous hæmatemesis or melæna is usually observed. I have no hesitation is saying that in the vast majority of cases where bleeding points have been detected in the gastric mucosa or moderate hæmorrhage has occurred during life without obvious ulceration being found after death, the condition is due to chronic hypersecretion accompanied by superficial losses of tissue too minute to be detected by the naked eye. In one case of this description which I had an opportunity of examining with von Recklinghausen we were able to demonstrate by artificial injection the source of a fatal hæmorrhage which had eluded his most careful search at the necropsy. Although these hæmorrhagic erosions usually heal, they are apt, if closely set, to coalesce and in certain cases to form superficial ulcers of considerable size, which, however, may not be recognisable on digital examination of the exterior of the stomach. I have seen an ulcer of this description nearly two inches in diameter that extended as deeply as the muscular coat but which nevertheless remained undetected until the stomach had been opened.

Thirdly, the quantity of gastric secretion as well as its degree of acidity varies, not only in different cases, but also at different stages of the same case. Thus, by careful treatment the pain, vomiting, and signs of food retention will often subside for many weeks, and the patient may feel comparatively comfortable; but should he indulge in green vegetables, fruit, or alcohol, contract a chill or suffer from any form of mental excitement, the various symptoms will recur with all their former intensity. In addition to these indications of remission, all cases of chronic hypersecretion are liable to sudden attacks of an extremely acute character, during which the vomiting of a hyperacid gastric juice mixed with bile or altered blood is almost incessant, much pain is experienced in the region of the stomach, and dangerous exhaustion ensues. These intercurrent attacks are usually described as a distinct variety of the complaint under the terms "intermittent" or "periodic" hypersecretion, but inasmuch as they always coexist with the chronic form of the disorder and are associated with the same organic lesions this differentiation appears to be superfluous.

---

[1] A paper read before the Surgical Section of the Royal Society of Medicine, March 8th, 1910.

Although it is well known that hypersecretion commonly accompanies chronic ulcer of the stomach, it is still the custom to regard it as a primary disorder of nervous origin and to attribute it to the same conditions that are supposed to excite simple hyperacidity. Thus, writers upon the subject lay much stress upon over-indulgence in rich and highly-spiced foods, the abuse of alcohol or tobacco, inefficient mastication, and long-continued mental strain or excitement; but since these several conditions are also held responsible for other forms of indigestion, while their mere existence does not explain why they should excite in one individual hyperacidity, in another gastritis, and in a third hypersecretion, it seems advisable to investigate the various organs of the body as well as the habits of the patient in order to discover if possible the reason for such diverse consequences of the same causes.

Until the year 1907 I had felt convinced from post-mortem evidence as well as from the more limited results afforded by operations that 88 per cent. of all cases of chronic hypersecretion were accompanied by a demonstrable lesion of the digestive organs, while in the remaining 12 per cent. no disease that appeared to have any connexion with the stomach could constantly be detected. I was, however, well acquainted with a peculiar type of hypersecretion in which death frequently occurred from appendicitis, and was in the habit of warning such patients of their special liability to that disease; but it was not until an opportunity occurred in that year of discussing the subject with W. Mayo of Rochester, U.S.A., that the cause of this appendicitis and also an explanation of the 12 per cent. of cases hitherto unaccounted for at once become apparent. That distinguished surgeon informed me that he had often discovered latent disease of the appendix in persons who seemed to require gastro-jejunostomy, and that the removal of the appendix was followed by the subsidence of the gastric symptoms provided that the alimentary tract was otherwise healthy. Furthermore, that several of his earlier cases of gastro-jejunostomy which had not materially benefited by the operation had subsequently been found to possess a diseased appendix and that when this had been removed a cure had resulted. With these facts in mind, the various surgeons who have operated for me on cases of chronic hypersecretion during the last two years have examined the appendix as well as the other important abdominal viscera, and the results obtained in 112 consecutive cases are as follows:—

Chronic ulcer of the stomach existed alone in	13	cases.
Chronic duodenal ulcer ,, ,, ...	46	,,
Gall-stones ,, ,, ...	12	,,
Disease of the appendix ,, ,, ...	22	,,
Gastric and duodenal ulcers coexisted in	3	,,
Duodenal ulcer and gall-stones ,, ...	3	,,
Gastric ulcer and diseased appendix coexisted in ...	5	,,
Duodenal ,, ,, ,, ,, ...	4	,,
Cancer of the pylorus existed alone in	4	,,
Total	112	,,

Out of the 13 examples of gastric ulcer the disease occupied the cardiac portion of the viscus in 4, the central zone in 3, and the pyloric third in 6, and it is interesting to observe that one of the most severe clinical examples of hypersecretion was associated with an ulcer close to the cardiac orifice. When gall-stones constituted the sole indication of disease the calculus was often single and completely filled the gall-bladder, and only in one case was there a history of biliary colic. Hæmatemesis or melæna was noted only in 3 out of the 46 examples of duodenal ulcer, notwithstanding the fact that the average duration of the symptoms of hypersecretion prior to the operation was nine years, while in several instances they had existed more than 17 years. In only 7 of the 22 examples of diseased appendix was there a history suggestive of previous inflammation of the organ, although at operation it was invariably found to be either extensively ulcerated, thickened, adherent, dilated, or occupied by a calculus. In each of the 4 cases of cancer of the pylorus the growth was the cylinder-cell variety, which developed with extreme rapidity and caused death within seven months. There was no history indicative of former simple ulcer.

The dependence of hypersecretion upon an organic lesion of the digestive organs appears to be further corroborated by the results of treatment. Thus in almost every case where gastro-jejunostomy was performed for gastric or duodenal ulceration, and the gall-bladder and appendix were proved to be healthy, the symptoms of disordered digestion gradually disappeared, and in those instances that were carefully examined subsequently by Paterson the hypersecretion was found to have absolutely ceased. In like manner the removal of gall-stones when other parts of the digestive tract were healthy was followed by a subsidence of the secretory disorder, while appendicectomy, after an initial rise in the percentage of the hydrochloric acid, was usually attended by similar results, although convalescence was sometimes unduly prolonged.

A careful comparison of the clinical and chemical features of these various cases with the lesions found at operation appears to indicate that each division possesses certain general characters which are sufficiently distinctive to permit of a correct diagnosis being made in the majority of instances.

1. *Hypersecretion due to latent disease of the appendix*, or "*appendicular hypersecretion*," is the mildest type of the complaint. As a rule, it displays an intermittent character for several years, and each fresh attack is ascribed by the patient either to a chill, mental anxiety, or to some indiscretion of diet. For a considerable time after it has attained the chronic stage the typical symptoms of a moderate hypersecretion continue to manifest themselves, but with the progress of time the paroxysmal pain is gradually replaced by discomfort and distension, which persist during the entire day. So far as my limited experience goes, the symptoms vary to a great extent according to the appendicular lesion and the concomitant state of the gastric secretion. Thus, when the appendix is in a condition of active irritation, such as ensues from ulceration of its mucous membrane, the presence of a large calculus, or extreme cystic dilatation of its lumen, pain is always a noticeable feature, and a gastric analysis shows both hyperacidity and food retention. On the other hand, if the appendix is merely thickened or adherent owing to a former attack of acute inflammation, the gastric disorder may no longer be accompanied by typical symptoms, and subacidity with an absence of free hydrochloric acid is the rule. In every instance of this latter kind that has come under my notice the patient was thin, anæmic, and obviously suffering from general neurasthenia. For several years persistent discomfort had been experienced in the upper part of the abdomen, whether the stomach contained food or not, attended by distension, flatulent eructations, nausea, want of appetite, insomnia, a foul taste in the mouth, and constipation. No form of diet or medicinal treatment had produced any permanent benefit, and it is worthy of remark that the majority of the patients stated that bicarbonate of sodium and other alkalies gave rise to pain. Cases of this description endure a miserable existence, and after consulting many different medical men they usually renounce professional advice in favour of any charlatan who promises a cure. Nevertheless, when carefully examined several signs may be found which will suggest the nature of the complaint. In every instance the stomach is moderately dilated and dislocated downwards in the abdomen, and there is marked tenderness on pressure over the entire organ. As a rule, no history can be obtained indicative of former appendicitis, but occasionally the patient will volunteer the statement that his complaint started with inflammation of the bowels, peritonitis, or

intestinal obstruction. Aspiration in the early morning usually shows that the stomach contains from 10 to 30 cubic centimetres of a weak gastric juice, mixed with much mucus, but in some instances the organ is almost empty. After a test breakfast, the amount of fluid withdrawn exceeds the normal, but its total acidity seldom exceeds 50, and free hydrochloric acid is almost invariably absent. Nervous dyspepsia is the term most commonly applied to this complaint, although in true gastric neurasthenia both secretion and motility are normal; while other diagnoses refer the symptoms to "biliousness," "gastroptosis," "hypochondriasis," or "hysteria." Sooner or later, however, these unfortunate individuals develop an acute suppurative appendicitis, and it was the frequency of this fatal complication that first drew my attention to the subject.

2. *Biliary hypersecretion* is more frequent in women than in men, and rarely develops before 30 years of age. It is most severe when the gall-bladder is occupied by a single large calculus, and for this reason, probably, is seldom preceded by colic or jaundice. The disorder displays the same tendency to intermission as the other varieties, but each individual attack often lasts for two or three months. Pain during the later stages of gastric digestion is invariably present, and is usually referred to the right hypochondrium, whence it may radiate to the back of the right chest. Vomiting may or may not occur, but acid regurgitations constitute one of the most prominent features of the case. The so-called "hunger-pain" is often very pronounced. In the early morning the stomach contains a considerable quantity of bile-stained gastric juice which possesses a comparatively high total acidity (40 to 70) and affords the usual reactions of free hydrochloric acid. After a test breakfast the total acidity varies from 70 to 110, and the percentage of free hydrochloric acid is greatly increased (0·04 to 0·1). The fact that biliary hypersecretion is often followed by ulcer of the stomach or duodenum renders its differential diagnosis from these latter complaints a matter of considerable difficulty. The chief points in favour of a primary biliary calculus are its greater frequency in women, the persistency and severity of acid regurgitations, and constant tenderness over the region of the gall-bladder.

3. *Hypersecretion due to an ulcer (or its scar) in the vicinity of the pylorus, either on its gastric or duodenal side*, is accompanied by the various symptoms of the disorder in their most characteristic form. Whatever may be the expression employed to define the digestive discomfort that occurs in other varieties, the subjects of this complaint state most emphatically that they suffer intense pain, which usually develops about two hours after a full meal and persists until the next unless relieved by vomiting. In all cases the nocturnal attacks are the most severe and are usually accompanied by vomiting of the characteristic bile-stained gastric juice. Sooner or later emesis occurs at other times of the day, emaciation sets in, and the case is exposed to such dangerous complications as hæmorrhage, tetany, and acute hypersecretion. Dilatation of the stomach is always in evidence, and if the ulcer has produced stenosis of the pylorus or duodenum peristaltic movements of the organ may be visible on inspection of the abdomen. It is in these cases that the stomach is found to contain a large amount of a hyperacid gastric juice, mixed with undigested food, in the early morning, and its contents after a test breakfast to exhibit a great increase of free hydrochloric acid.

Conclusions.

1. Hypersecretion of gastric juice invariably depends upon an organic lesion, which usually takes the form of a chronic ulcer of the stomach or duodenum, calculus in the gall-bladder, or latent disease of the appendix, although it is probable that future investigations will prove that pancreatic calculus, tubercle of the cæcum, and carcinoma of the appendix are also capable of producing it. Of the last named, one case has already come under my observation. This disorder of secretion is merely the physiological expression of a reflex irritation of the gastric glands, and is therefore not entitled to be regarded as a disease.

2. The continuous flow of a hyperacid gastric juice, whatever be its cause, always excites severe inflammation of the stomach, and is very liable to be followed by ulceration of that viscus or the duodenum. This secondary ulceration is at first superficial in character and may not be demonstrable on examination of the exterior of the stomach. Minute hæmorrhagic erosions, capable of producing alarming hæmatemesis and melæna, are usually associated with, and caused by, this abnormality of the gastric secretion.

3. Latent disease of the appendix as a result of former acute inflammation is accompanied by a peculiar form of digestive disturbance. In this condition subacidity of the gastric juice with an absence of free hydrochloric acid is the rule.

4. With the exception of hæmorrhage, all the symptoms that are regarded as pathognomonic of duodenal ulcer are in reality due to the gastric hypersecretion that always accompanies this lesion. It follows, therefore, that a severe example of hypersecretion may as a rule be safely diagnosed as a case of duodenal ulcer.

5. Contrary to the usual belief, carcinoma of the pylorus is sometimes accompanied by extremely well-marked hypersecretion. In such cases the morbid growth develops with extreme rapidity and violent hæmorrhages, due possibly to digestion of the tumour, are exceptionally frequent.

Harley-street, W.

APPENDICULAR GASTRALGIA:

OR THE APPENDIX AS A CAUSE OF GASTRIC SYMPTOMS.[1]

By HERBERT J. PATERSON, M.B., B.C. Cantab., F.R.C.S. Eng.,

ASSISTANT SURGEON TO THE LONDON TEMPERANCE HOSPITAL, ETC.

During a visit to America in the spring of 1907 I spent two weeks at the famous Mayo clinic, and while there saw Dr. W. J. Mayo operate on two patients who were supposed to be suffering from gastric or duodenal ulcer. The history and symptoms were clear, but in neither patient was any gastric lesion discovered at the operation. In one the appendix was chronically inflamed, and in the other it contained a concretion. In both cases Dr. Mayo performed appendicectomy, and stated his belief that the appendix was the cause of the gastric symptoms, which he attributed to reflex spasm of the pylorus produced by the condition of the appendix. I must confess that at the time I was somewhat sceptical, the extent of the appendicular disease did not seem to me to be adequate to account for the severity of the gastric symptoms, but I have since from my own experience been able to confirm the soundness of Dr. Mayo's judgment, although, as I shall point out later, I am doubtful as to how far pyloric spasm accounts for the symptoms observed.

That there are cases in which disease of the appendix mimics gastric disease, in some cases with very remarkable fidelity, does not admit of doubt. This does not appear to have obtained general recognition in this country,[2] although probably the condition has been recognised by some. Abroad it has been recognised for some years. Ten years ago Ewald[3] referred to such cases under the name "appendicitis larvata," and Senator used the term "atypische appendicitis" for them. In America the rôle of the appendix in the production of gastric disorder has been recognised, not only in the work of the Mayos but in the writings of Murphy, Ochsner, Deaver, and others. Personally, I have operated on 24 such cases, and I suggest that the name "appendicular gastralgia" is a convenient and descriptive one to apply to them. In the majority of them operation was undertaken for a supposed gastric or duodenal ulcer, but later experience has led me to believe that in many instances it is possible to make a correct diagnosis, and this was the case in 7 of my last 8 cases. Six of these were seen with my colleague, Dr. W. Soltau Fenwick, and in all but one we made a correct diagnosis as to the appendicular origin of the gastric symptoms.

---

[1] Towards the expenses of the researches referred to in this paper (which was read before the Surgical Section of the Royal Society of Medicine on March 8th) a grant was made by the Science Committee of the British Medical Association.

[2] Since this paper was written and accepted for reading Mr. Moynihan has published a paper (Brit. Med. Jour., vol. i., 1910, p. 241) which has led to an interesting discussion in the columns of that Journal.

[3] Berliner Klinische Wochenschrift, 1899, No. 24, p. 532.

Symptoms.

Pain varying in degree is the prominent symptom in these cases. Some of the patients complain of what may be described as severe continuous discomfort rather than pain, while some describe their pain as severe. In a large majority of the patients the pain follows the ingestion of food, although the interval between the taking of a meal and the onset of pain is very variable. Seven patients stated that the pain came on immediately after taking food, while in 12 instances the interval between taking food and the onset of pain varied from half an hour to three hours. In most cases the pain is referred to the epigastrium, usually to the right of the middle line. Some of my patients stated that the pain radiated downwards to the right iliac fossa, while two with less definiteness said that the pain radiated downwards. In one interesting case the pain radiated to the left iliac fossa, and at the operation the cæcum and appendix were found in the left iliac fossa. This radiation of the epigastric pain to the lower part of the abdomen is, it appears to me, a most important diagnostic symptom, and is one which, in my experience, never occurs in gastric or duodenal ulcer. Four patients gave a history of "hunger pain," 10 complained of sour eructations, and 15 suffered from vomiting in varying degree. Two patients stated that they made themselves vomit in order to gain relief from the pain.

Hæmorrhage.—Five of the patients vomited blood on one or more occasions. In the case of one patient the amount of blood brought up was said to be 50 ounces. One patient while under observation had melæna, and in another case there was a history of melæna. I think there can be little doubt that the hæmorrhage comes from the gastric mucous membrane. In one case in which I opened the stomach the whole of the mucosa was studded with numberless bleeding points. The interior of the stomach was in the condition which has been described as "weeping blood." Probably this condition of the mucosa is due to the irritation of hyper-acid gastric juice or to the continual presence of gastric juice in the fasting stomach. I have seen an exactly similar condition in a case of duodenal ulcer associated with hyperchlorhydria, and I believe that in the majority of cases of duodenal ulcer the hæmorrhage comes, not from the ulcer, as is generally supposed, but from the mucous membrane of the stomach. In one of my microscopic sections of the gastric mucosa from a case of duodenal ulcer, blood can be seen escaping between the epithelial cells. I shall refer again later to this bleeding from the stomach without visible lesion, which has been called so aptly "gastrostaxis" by Dr. W. Hale White. Blood passed by the rectum probably comes from the same source, the blood, instead of, or as well as, being vomited, being passed through the duodenum into the intestine, but in one of my cases it is possible that the blood or some of it came from the ulcerated appendix, as at the operation there was a quantity of blood at the apex of the appendix. This case is perhaps one of the most striking in my series. The patient had been invalided on and off for 16 years. She had been treated more than once for gastritis with hæmatemesis. Shortly before she came under my care she had had a severe attack of hæmatemesis and was kept in bed on a liquid diet for eight weeks. At the operation she had an enormous appendix measuring 3½ inches in circumference and containing three large foul concretions. She had no symptoms referable to the appendix beyond slight tenderness in the right iliac fossa. I have seen one case of acute appendicitis associated with hæmatemesis. The onset of more acute abdominal pain and distension led the medical attendant to think that a gastric ulcer had perforated, whereas the real condition was a perforative appendicitis with general peritonitis. The patient made a good recovery.

Periodical exacerbations.—A noteworthy feature of these cases is that in many instances there is a periodical exacerbation of the symptoms. This was the case in 16 patients. None of them were quite well during the interval between the attacks but suffered from discomfort and flatulence after food. Another striking feature is the long history in a large number of the cases. The average duration of illness in my 24 cases is six years, although in one or two of them there was an interval of one or two years between the attacks. Tenderness in the epigastrium, usually to the right of the middle line, is an almost constant feature. In one-third of the cases there was tenderness over the appendix area as well as in the epigastrium.

Sex.—Of the 24 patients 20 were women, the oldest being aged 42 years and the youngest 21, the average age being 32 years. These observations may be tabulated thus:—

TABLE I.—*Analysis of Symptoms.*

Pain—	
Severe	12 cases.
Not severe	8 ,,
Constant discomfort	4 ,,
Relation of pain to ingestion of food—	
Immediately after food	7 ,,
One to three hours after food	12 ,,
Relation indefinite	5 ,,
Eructations	10 ,,
Vomiting	15 ,,
Hæmatemesis	5 ,,
Melæna	2 ,,
Tenderness over appendix	9 ,,
Exacerbations at intervals	16 ,,

TABLE II.—*Gastric Analyses in 17 Cases of Appendicular Gastralgia.*

No. of case.	Total acidity.	Total chlorides.	Free HCl.	Protein HCl.	Mineral HCl.	Volatile acids. %	Duration of symptoms.
7	64	0·343	0·007	0·204	0·131	—	18 months.
8	85	0·397	0·025	0·240	0·131	—	8 years.
9	64	0·272	0·000	0·210	0·062	12·8	10 ,,
10	30	0·179	0·000	0·111	0·068	14·0	3 ,,
11	63	0·310	0·000	0·211	0·098	—	7 months.
13	70	0·329	0·015	0·226	0·088	9·6	15 ,,
14	75	0·350	0·018	0·233	0·098	8·6	10 years slight. Bad 3 months.
15	69	0·430	0·073	0·255	0·102	6·4	2 years.
16	71	0·329	0·025	0·231	0·073	8·4	13 ,,
17	68	0·321	0·022	0·226	0·073	12·0	8 ,,
18	82	0·336	0·015	0·281	0·040	4·8	3 months.
19	45	0·199	0·000	0·096	0·103	19·0	1 year.
20	79	0·361	0·003	0·259	0·098	—	13 years.
21	86	0·412	0·043	0·240	0·127	—	18 months.
22	90	0·416	0·000	0·325	0·091	10·4	? 14 years.
23	61	0·288	0·007	0·201	0·080	6·8	15 ,,
24	49	0·299	0·000	0·179	0·120	5·6	8 ,,

Condition of Appendix.—*Case 7:* Concretion in appendix. Some adhesions. Chronic inflammation.—*Case 8:* Two marked constrictions. Chronic inflammation.—*Case 9:* Very long. Old adhesions. Kinked at acute angle.—*Case 10:* 6½ inches long. Adherent to right ovary. Much thickening of coats.—*Case 11:* Bulbous. Foul concretion. Adhesions.—*Case 13:* Bound down by old adhesions. Concretion.—*Case 14:* Dense adhesions. Appendix bulbous at tip. Concretion. Hæmorrhages in mucosa.—*Case 15:* Concretion. Area of necrosis of mucosa.—*Case 16:* Appendix thick. Mucosa in process of disintegration.—*Case 17:* Thickened. Adherent to right ovary.—*Case 18:* Appendix bulbous. Mucosa ulcerated.—*Case 19:* Long, bulbous, containing concretion. Mucosa ulcerated.—*Case 20:* Very long and thick. Concretion. Mucosa petechial in places.—*Case 21:* Bulbous. Slight adhesions. Concretion.—*Case 22:* Enormously enlarged, containing three foul concretions.—*Case 23:* Very long and contractile. Concretion at tip. Chronic inflammation.—*Case 24:* Very long and bulbous. Constriction near base.

Gastric analysis.—I have made complete gastric analyses in 17 of my cases and the results are given in Table II. A glance at the table shows that there are considerable variations in the gastric findings. In two (Nos. 15 and 21) of the cases there was marked hyperchlorhydria. In 6 cases the free HCl differed but little from the normal, while in 9 it was absent or nearly so. In these 9 cases the findings were those of chronic gastritis, except that the protein HCl was, as a rule, higher than is usual in this condition. In a majority of the cases there is marked increase of the volatile acids. In 5 of the cases from 30 to 40 cubic centimetres of gastric juice were drawn off from the stomach in the early morning ten hours after lavage and taking half a pint of milk. The digestive activity was tested in 8 of the cases and was found impaired in those cases in which free hydrochloric acid was markedly diminished or absent; in others it was normal. As a general rule, the longer the duration of the symptoms the greater the degree of gastritis shown by gastric analysis.

The operation findings.—In 15 of the cases a diagnosis of gastric or duodenal ulcer was made and the stomach and duodenum were explored through an incision above the umbilicus. No lesion of the stomach being discovered the gall-bladder was examined and was found healthy. The appendix was then sought for and as it showed evidence of disease was removed, usually through a separate incision over the right rectus but occasionally through the supra-umbilical wound prolonged downwards. In 9 of the cases a diagnosis of appendix trouble was made before the operation, and in 3 of these the stomach and duodenum were also explored to exclude the possibility of ulcer. In 16 of the cases in which the stomach was explored the duodenum was markedly dilated. Dr. Mayo told me that in these cases he very frequently observed peristaltic waves passing over the pylorus. Personally, I noted such waves in 7 only of the 18 cases in which the stomach was explored.

The condition of the appendix.—As a rule, judged by its external appearance, the appendix is not extensively diseased. The most common condition is that the appendix is bulbous, somewhat thicker than usual, and on opening it a narrowing or constriction is found near the base, the distal side of the constriction being slightly dilated and giving rise to the bulbous appearance. A concretion was found in exactly half the cases. In all of my cases microscopic examination of the appendix showed the existence of chronic inflammation. In some of the cases the disease of the appendix was more extensive than that described above. In several of the cases there were minute hæmorrhages in the mucous membrane, and in 7 cases there was a definite ulcerated area of the mucosa. In 1 case the appendix was enormously dilated, measuring 3½ inches in circumference, the mucous membrane was ulcerated, and there were three large very foul-smelling concretions in the lumen, as well as some blood-clot. This patient had had hæmatemesis as well as melæna. In 2 cases the appendix was not obviously diseased externally, but it was very long (in 1 case 6 inches) and contractile. In both these cases the lumen of the appendix was filled with fæces, and microscopical examination showed leucocytic infiltration of the mucosa.

There can be no doubt that an appendix which appears on cursory examination to present no abnormal features may be the seat of disease fraught with grave danger to its possessor. I have on a number of occasions removed an appendix which might by an onlooker be regarded as "normal" and yet have been able subsequently to demonstrate to those present the existence of disease within. Such an appendix usually presents the following features. The appendix may not be obviously larger than usual, but inspection shows that instead of being a uniform pale yellowish colour its surface is covered with a branchwork of minute blood-vessels, evidence of chronic inflammation. Careful palpation may detect that the appendicular coats are thicker than usual. On cutting the appendix open it usually contains fæces or a concretion, the mucosa is congested, sometimes petechial, or even definitely ulcerated. Microscopic examination shows the existence of chronic inflammation. However innocent looking externally, an appendix which contains a concretion, or the mucosa of which is so damaged as to permit of bacterial invasion, is one which may at any time lead to a sudden attack of appendicitis.

The Evidence that the Gastric Symptoms are due to the Appendicular Disease.

The evidence of the connexion between the appendicular disease and the gastric symptoms is threefold. In the first place there is the observation that the majority of the patients are cured by appendicectomy. If this merely meant that the pain or feeling of discomfort was relieved the evidence would not be of much value, but it implies more than this, because in addition to relief of pain those patients who had suffered from vomiting, melæna, or hæmatemesis were definitely relieved from these troubles. In other words, objective as well as subjective symptoms disappeared after appendicectomy. I have said that the majority of the patients are cured. Of my 24 patients 17 have been free from symptoms since operation, 3 have been improved, and 4 are "not cured." This does not at first sight seem very conclusive evidence as to the benefit of operation. But be it noted that the cases which have not been benefited by operation are those who have had evidence of very chronic gastritis, and that recovery should not be rapid and possibly not complete is not surprising. Two of these patients I have had in hospital again, and with rest in bed, careful dieting, and gastric lavage they have lost all their symptoms, but whether this improvement is permanent it is impossible to say as both are comparatively recent cases.

Secondly, the close physiological association between the stomach and the appendix is shown by the improvement in the gastric contents as shown by gastric analysis before and after appendicectomy. The cases in which such a comparison has been made are not many, as it is only recently that I have been making an analysis after as well as before operation. Comparing Table II. with Table III. we see that in 7 of the 9 cases in which there was marked gastritis, a gastric analysis was made after appendicectomy, and in 6 (Nos. 7, 11, 18, 22, 23, 24) of these 7 cases there was after operation a considerable quantity of free HCl present in the gastric contents. All these patients are now well. In one patient (No. 16) according to the table free HCl was present before operation and absent afterwards. In this case only one analysis was made before operation, and I am inclined to think that the analysis was incorrect. At any rate, since operation the evidence of chronic gastritis has persisted, and this is one of the most unsatisfactory cases which I have had. Two of the patients had a very marked increase of free HCl (Nos. 13 and 22) after operation, the amount of free HCl being sufficient to justify the use of the term hyperchlorhydria. This marked increase of free HCl after appendicectomy is very curious, and since I have been making analyses in my ordinary appendix cases I have found it so often that I am inclined to believe that it can hardly be accidental, but must be cause and effect. Further, I have observed that this hyperchlorhydria following appendicectomy is not permanent but gradually disappears. This is well seen in two of the cases in Table III. (Nos. 13 and 22), and I have observed the same sequence in a number of other cases in which appendicectomy has been performed during the quiescent period. Probably this temporary hyperchlorhydria is due to a protective spasm of the pylorus, Nature's attempt to protect the unhealed site of the amputation of the appendix. This observation appears to me to afford strong proof of the causal connexion between appendicular disease and gastric symptoms.

TABLE III.—*Showing Gastric Analyses after Appendicectomy in 12 Cases of Appendicular Gastralgia.*

No. of case.	Interval after operation.	Total acidity.	Total chlorides.	Free HCl.	Protein HCl.	Mineral HCl.	Volatile acids.
							%
7	3 weeks.	64	0·292	0·015	0·174	0·102	—
10	3 ,,	44	0·22	0·00	0·130	0·09	20·7
11	3 ,,	66	0·350	0·011	0·222	0·116	—
13	5 ,,	96	0·416	0·044	0·262	0·110	14·0
	4 months.	90	0·372	0·025	0·267	0·080	5·5
14	6 weeks.	72	0·336	0·018	0·260	0·058	4·8
15	6 months.	71	0·343	0·018	0·270	0·055	6·4
16	4 weeks.	56	0 321	0·00	0·186	0·135	5·6
	3 months.	44	0·295	0·00	0·183	0·109	5·2
18	1 month.	70	0·343	0·010	0·233	0·098	—
21	4 weeks.	65	0·298	0·018	0·174	0·105	—
22	1 month.	96	0·336	0·029	0·234	0·073	10·4
	3 months.	70	0·339	0·018	0·215	0·106	10·8
23	3 weeks.	63	0·336	0·022	0·186	0·128	6·8
24	3 ,,	68	0·270	0·011	0·193	0·066	8·8

Incidentally I may point out that so far as I have observed this hyperchlorhydria after appendicectomy is symptomless. One patient (No. 13) one month after appendicectomy had more than double the normal amount of free hydrochloric acid in her gastric contents, and yet immediately after the operation she was able to take milk without pain or discomfort. I kept her on milk and fish diet for three months, and the amount of free hydrochloric acid had then diminished almost to the normal. Since then she has resumed an ordinary diet and, in her own words, "she never has indigestion except when she eats really indigestible articles of food."

In this case the symptoms were very severe and simulated ulcer very closely, and her recovery has been very speedy and complete considering her condition previous to operation. Indirectly, such cases are against the view that there is such a thing as a functional hyperchlorhydria. It is not the hyperchlorhydria which gives rise to symptoms, but the organic disease which is the cause of the hyperchlorhydria.

Thirdly, for the past year I have been as it were working backwards, and cross-questioning the patients on whom I have operated for acute appendicitis as to a previous history of gastric trouble. The frequency with which a previous history of gastric symptoms can be elicited is certainly significant. A number of these patients state that for years they have suffered from what they describe as bilious attacks—that is, attacks of vomiting, with discomfort after food in the intervals between the attacks. More frequently the patients state that for a considerable time before the acute attack of appendicitis they have had to be careful as to their diet, otherwise they have suffered from indigestion. Dr. Soltau Fenwick in his paper has pointed out that before he recognised the connexion between appendicular disease and gastric symptoms he was acquainted with a peculiar type of hypersecretion in which death frequently occurred from appendicitis. Some years ago I had an interesting case of this type. I operated on a lady who was supposed to have a gastric or duodenal ulcer. On opening the abdomen I could find no lesion of the stomach or duodenum. The symptoms were clear and definite, and as the patient had hæmorrhage I thought that an ulcer must exist undiscoverable from external examination of the stomach. Accordingly I opened the stomach—a procedure of which, by the way, I now most strongly disapprove—and explored it from within. I found the whole mucous membrane in a state of extreme congestion, and studded all over with hundreds of minute bleeding points. I accordingly performed a gastro-jejunostomy, and the patient was at once relieved of her symptoms and remained perfectly well for about 18 months. She then had an attack of acute appendicitis and narrowly escaped with her life. At that time I did not recognise the association of appendicular disease with the causation of gastric symptoms, but on looking back I have little doubt that the original gastric symptoms were secondary to chronic disease of the appendix. In this particular case gastro-jejunostomy was a success in so far as it relieved the patient of her gastric symptoms; nevertheless, I am convinced that I made a mistake in that I ought not to have performed gastro-jejunostomy but to have removed the appendix.

Some years ago I saw two cases of gastric catarrh in children due to latent disease of the appendix which I did not recognise. In one of these the gastric catarrh was attributed to adenoids, and the boy was sent to me by a well-known physician to have his adenoids removed. This was done, but the boy was not a great deal better, and five months later he had a very acute attack of appendicitis. After appendicectomy he rapidly improved and has since remained well. The other case was that of a girl who for several years had been subject to attacks of gastritis without obvious cause. Later she had definite tenderness over the appendix and appendicectomy was performed. Since the operation, now six years ago, she has had no further trouble.

Failures after Gastro-jejunostomy.

I have little doubt from cases which I have seen that some of the failures after gastro-jejunostomy are due to the circumstance that gastro-jejunostomy has been performed for gastric symptoms when no gastric lesion existed, and the symptoms have been in reality due to appendicular disease. While I was at Rochester I saw Dr. Mayo resect two gastro-jejunostomies which he had performed for supposed ulcer, and which, with characteristic frankness, he admitted that he ought not to have performed, as the real trouble was proved at the second operation to be latent appendicitis, and I have heard that he has since operated on a number of cases in which a similar mistake had been made by others. I have myself resected one of my own gastro-jejunostomies and two which had been performed by other surgeons in which no lesion of the stomach existed. One cannot repeat the axiom too frequently, that no operation should be performed on a clinical or pathological diagnosis, unless such diagnosis be confirmed by the findings on the operation table. In other words, gastro-jejunostomy should never be performed except when a definite lesion of the stomach or duodenum exists, and, further, only when such lesion can be demonstrated without the necessity of opening the stomach or duodenum. If an ulcer exists which cannot be discovered without opening the stomach, it is medical treatment which is indicated, not gastro-jejunostomy. This is such a simple proposition that it should be self-evident, and yet it is one which is often disregarded, and I confess at once it is one from which in former years I have departed on two occasions, one of which is narrated above, and in both instances I discovered subsequently that I had made a mistake.

Differential Diagnosis.

The chief conditions from which appendicular gastralgia has to be distinguished are duodenal ulcer, gastric ulcer, and gall-stones. Of these, duodenal ulcer is the disease which gives rise to the greatest difficulty in the differential diagnosis. The symptoms produced by duodenal ulcer and by the cases of latent appendicitis to which I am referring are very similar in many respects. There is often the same history of recurrent attacks; both duodenal ulcer and appendicular disease may give rise to hyperchlorhydria and also to entire absence of free hydrochloric acid. Even "hunger pain" may be a symptom of appendicular disease. The points which aid us in distinguishing the two diseases appear to me to be: First, in duodenal ulcer the patient is usually free from symptoms between the attacks; in appendicular gastralgia, even between the attacks the patient suffers from flatulence and discomfort after food. Secondly, the radiation of the epigastric pain towards the lower part of the abdomen is highly suggestive, if not diagnostic, of appendicular trouble. Thirdly, the existence of tenderness over the appendix sometimes throws light on an otherwise doubtful case. Fourthly, in many cases of appendicular gastralgia the alteration of the gastric contents is not commensurate with the severity and duration of the symptoms. Let me explain what I mean by this. In a number of the cases which I have examined the gastric contents have been little altered chemically. This is not often the case in duodenal ulcer. In my experience duodenal ulcer most commonly produces, or is associated with, hyperchlorhydria, at any rate in the early stages; later there is often absence of free hydrochloric acid. Appendicular disease may apparently exist for a considerable time without a marked alteration of the amount of free hydrochloric acid. The combination of marked symptoms of duodenal or gastric ulcer with a negative gastric analysis is suggestive of chronic appendicular disease. The cases of appendicular gastralgia associated with hyperchlorhydria perhaps present the greatest difficulty in diagnosis. My impression is that hyperchlorhydria secondary to appendicular disease does not give rise to the severe pain which is in my experience usually associated with the hyperchlorhydria accompanying duodenal ulcer. Fifthly, a point on which too much stress should not be laid is that duodenal ulcer is far more common in men; appendicular gastralgia appears to be more common in women.

In gastric ulcer food, especially milk, often gives relief for the time being, the pain recurring one or two hours later. In appendicular gastralgia the onset of pain is more variable; food, even milk, usually produces pain or discomfort at once. The dorsal pain so common in gastric ulcer is not present in appendicular gastralgia. In gastric ulcer the motility of the stomach is not usually impaired unless the ulcer is near the pylorus, in which case there is usually food retention. The pain in gastric ulcer or duodenal ulcer is rarely so severe and continuous that the patient has to take to bed. In several of my cases of appendicular gastralgia, on the other hand, the patients have had to lie up on account of the continuous and exhausting character of the pain. Another point which is helpful in distinguishing appendicular gastralgia from gastric or duodenal ulcer is this:—the administration of bismuth and alkalies has little or no influence, in my experience, on the pain and discomfort due to appendicular disease. The diagnosis from gall-bladder trouble has been fully dealt with by Dr. Soltau Fenwick, and I do not propose to discuss this further.

How are the Gastric Symptoms Produced?

When we attempt to explain why appendicular disease should produce gastric symptoms we are entering into the region of speculation. I think I have brought forward evidence to show that there is a close connexion between the appendix and the stomach, but as to the exact nature of this connexion I am not prepared to dogmatise. Dr. W. J. Mayo thinks that appendicular disease causes a protective spasm of the pylorus. Possibly this is the explanation of those cases in which there is hyperchlorhydria. As Dr. Soltau Fenwick points out in his paper, the symptoms are those of hypersecretion. Exactly how the hypersecretion is caused we are not in a position to say. All we know at present is, that in some way the appendix does affect the gastric secretion. Personally, I think that intestinal stasis rather than pyloric spasm is the condition in these cases. The symptoms may be regarded as toxic, the result of the intestinal stasis. This view seems to be supported by the frequency with which the duodenum is found markedly dilated at operation, and by the fact that in a number of the cases the stomach is dilated also. Further, as a rule the quantity of gastric contents evacuated after a test meal is greater than in healthy individuals; the percentage of volatile acids is usually increased, and in addition flatulence and constipation are prominent symptoms.

Gastrostaxis.

In recent years it is becoming gradually recognised that hæmatemesis accompanied by pain and vomiting is not pathognomonic of ulcer. Operations have been undertaken for hæmorrhage from a supposed ulcer, but no ulcer has been discovered, the source of the bleeding being a general oozing from the whole mucous membrane. To this condition Dr. Hale White[4] has given the name "gastrostaxis." Dr. Bertrand Dawson[5] has termed it "hæmorrhagic gastralgia." The older writers[6] regarded the bleeding as a form of vicarious menstruation, a hypothesis for which there appears to be no adequate justification. The perusal of hospital reports reveals a remarkable difference between the sex incidence of gastric ulcer as diagnosed clinically, and the sex incidence of gastric ulcer as proved by operation and post-mortem examination. Dr. W. P. Herringham[7] in an interesting paper has called attention to this difference and illustrated it from the records of St. Bartholomew's Hospital. There can be no doubt that many of the cases diagnosed as gastric or duodenal ulcer are not gastric or duodenal ulcer at all, but some other condition, and I suggest that it is probable that some at least of the cases of so-called gastrostaxis and many of the cases diagnosed as gastric ulcer are really cases of latent appendicular disease.

Indications for Operation.

Lastly, I wish to make my position quite clear with regard to operation. That latent appendicular disease gives rise to gastric symptoms I have not a doubt. The symptoms I have described are in the main those of hypersecretion or the so-called "acid dyspepsia." I need hardly state that I do not for a moment suggest that all cases, or even the majority of cases, of acid dyspepsia require operation, but I believe that when we have reason to believe that the gastric symptoms are due to appendicular disease, operation as a rule is advisable, provided medical treatment has failed. I hold it as a cardinal principle that in all cases of gastric disorder, except when there is evidence of some organic lesion such as carcinoma, pyloric stenosis, or hour-glass constriction, before operation be undertaken it must be premised that medical treatment has been tried and failed. And when I speak of medical treatment I mean, not a few weeks of dieting or drug taking, but a course of rest and careful dieting continued during at least six months.

It is the cases in which there are no physical or chemical signs which require careful consideration. In those cases in which, in addition to the gastric symptoms, there is definite and persistent tenderness over the appendix, operation is usually advisable. I confess that I have an old-fashioned prejudice against operating when pain is the only symptom. At the same time I recognise that there are such cases in which operation is not only justifiable but necessary. I take it we are all agreed that it is right to operate in cases of so-called "appendicular colic," when such attacks are recurrent. Surely it is equally justifiable to remove the appendix when the patient suffers from recurrent attacks of gastralgia attributable to disease of the appendix, provided medical treatment has been tried and has failed. And in this connexion I may point out again the diagnostic significance of the radiation of epigastric pain to the lower part of the abdomen. I would insist, however, that the pain must be definite, and such that it seriously interferes with the patient's enjoyment of life. The principles I laid down in my Hunterian lectures in 1906 with regard to gastric ulcer are as true to-day as when they were written, not only as regards gastric ulcer, but as regards appendicular gastralgia: "If after six weeks' complete rest on a milk diet, a further period of six weeks on a milk diet with comparative rest, followed by three months' careful dieting, the patient is not free from definite symptoms, or if after apparent cure the patient has a relapse, operation is probably in the best interests of the patient." And at the risk of repetition I may, perhaps, add what I wrote at the same time: "The performance of gastro-jejunostomy (and this is equally true of appendicectomy) in cases of vague gastric disorder, unaccompanied by definite organic lesions, cannot but lead to the discrediting of a valuable and, in suitable cases, legitimate operation."

Conclusions.

1. Appendicular disease may give rise to symptoms which closely mimic the supposed symptoms of gastric and duodenal ulcer.

2. The prominent symptom is epigastric pain or severe discomfort after food; in many cases there are sour eructations, vomiting, and even hæmatemesis and melæna.

3. The radiation of epigastric pain to the lower abdomen is very suggestive of appendicular trouble.

4. Gastric analysis reveals, in some cases hyperchlorhydria, in others a normal amount of free HCl, in others a marked diminution or absence of free HCl. As a rule there is an increase of the volatile acids, and in some cases evidence of hypersecretion.

5. Some cases of hypersecretion or acid dyspepsia and many cases of supposed gastric or duodenal ulcer are due to latent appendicular disease.

6. The evidence that the gastric symptoms are due to appendicular disease is threefold: (*a*) the majority of the patients are cured by appendicectomy; (*b*) the influence which appendicectomy has on the gastric contents; and (*c*) the frequency of a previous history of gastric symptoms in those who have an attack of acute appendicitis.

7. The symptoms are probably the result of intestinal toxæmia, due to intestinal stasis. The effect on gastric secretion is, in the early stages, possibly due to pyloric spasm, but more probably to some influence of the appendix on gastric secretion.

8. Appendicular gastralgia is apparently more common in women than in men.

9. The important lessons to be learnt from these cases are the two following. 1. That no operation should be performed on the stomach except when a definite organic lesion of the stomach or duodenum exists. Gastro-jejunostomy will not cure appendicitis. 2. That in all operations for supposed gastric or duodenal ulcer, the condition of the appendix should be carefully investigated.

Upper Wimpole-street, W.

SOME OF THE COMMONER FORMS OF CHRONIC RHEUMATISM (FIBROSITIS) AND THEIR TREATMENT.[1]

BY ARTHUR P. LUFF, M.D., B.Sc. LOND., F.R.C.P. LOND.,
PHYSICIAN TO ST. MARY'S HOSPITAL.

THE affections that I am dealing with in this lecture are amongst the minor maladies, in that they do not affect the duration of life, but they have a very appreciable influence on the comfort and enjoyment of life, and in that respect are well worthy of more attention than they generally receive at the hands of the medical profession. They are the more or less chronic affections which are generally labelled "rheumatic," but which undoubtedly are not the sequelæ of acute rheumatism, and which are in no sense connected with that disease. Whereas acute rheumatism is more common in the first half of life, the various forms of chronic rheumatism are much more common in the second.

---

[4] Hale White: THE LANCET, 1906, vol. ii., p. 1189.
[5] Dawson: Brit. Med. Jour., 1905, vol. ii., p. 1032.
[6] Watson's Lectures, II., p. 496.
[7] Herringham: St. Bartholomew's Hospital Reports, vol. xliv., p. 11.

[1] A lecture delivered at the Medical Graduates' College and Polyclinic on March 10th, 1910.

Pathology.

In the great majority of the cases of so-called chronic rheumatism that I am about to deal with, the essential pathological change is an inflammatory hyperplasia of the white fibrous tissue in various parts of the body, to which the term "fibrositis" has been very aptly applied. The articular structures proper—synovial membrane, cartilage, and bone—are not primarily affected, but the parts implicated are the fibrous tissues of the joints, muscles, and bones, especially the aponeuroses and insertions of the muscles, fasciæ, the fibrous ligaments of the joints, and the periosteum. Such affections cause pain and stiffness in these structures, are especially apt to recur, and are commonly referred to as rheumatic or even gouty in their origin. This inflammatory hyperplasia of the fibrous tissues occurs in patches and is started by exposure to wet or cold, by injury, or by some irritant, microbic or toxic, conveyed in the blood. The inflamed and swollen fibrous tissue is tender, painful on pressure or on movement, and can frequently be felt on palpation, or is evident by the consequent elevation of the skin. This fibrositis may completely disappear, but recurrences are common, and if not suitably treated the thickened fibrous tissue remains as indurations at various parts.

The indurations may be widespread, but generally are well defined and vary in size from an eighth of an inch to one inch in diameter. They may be situated in the subcutaneous tissue, the muscles, tendons, aponeuroses, and periosteum. The pain is especially aggravated by any sudden movement of the muscles which compresses or stretches the affected fibrous tissues and the sensory nerve filaments.

Indurations and nodules.—Indurations in muscles are especially apt to develop as the result of excessive muscular work, as in some cases of writer's cramp, in muscles that are much exposed, as in those of the hand and neck, and in those where an injury has been sustained, as is frequently the case with the muscles of the back. These indurations in the muscles are exceedingly common, and are easily recognised. There is only one condition that may be mistaken for them, and that is a gumma. The latter, however, is not usually painful, and the other evidences of syphilis will prevent a mistake.

Barlow and Warner in 1881 described the development of fibrous nodules in the subcutaneous tissue as an occasional feature in the course of rheumatism in childhood and early adult life. Since then subcutaneous nodules have been recognised in adults who have been suffering from that form of chronic rheumatism secondary to acute or subacute rheumatism, and these nodules exactly correspond to those described by Barlow and Warner. As a rule they persist for a longer time than is the case with patients under the age of puberty, but usually they last for a few weeks and then gradually disappear. In young children the presence of subcutaneous nodules is usually of serious import, since they are frequently associated with cardiac disease, which is apt to be progressive in character. It is, however, now a recognised fact that subcutaneous nodules occur in many forms of so-called chronic rheumatism, which are not secondary to either acute or subacute rheumatism, and that in such cases their presence is not of the serious import which it is in the cases of young children referred to above.

Ætiology.

Local fibrositis may result from several causes of which the following are the commonest:—

1. *Cold, damp, and wet.*—In a very large number of cases the only assignable cause of the fibrositis is a history of exposure to cold and wet. Sometimes the attack comes on acutely a few hours after the exposure, as in many cases of lumbago, stiff neck, intercostal "rheumatism," and other forms of so-called muscular "rheumatism." At other times stiffness gradually develops after the exposure, and passes on to the condition of chronic fibrositis generally known as chronic rheumatism. The exposure may be due to draughts, remaining in wet clothes, lying or sitting on damp ground or some cold substance, or the simple advent of damp or cold weather. Many persons are readily affected by the approach of rain, and by a lowering of the barometric pressure. Longstreth states that the painful symptoms do not correspond to rain, but to the fall of barometric pressure, and Stockman suggests that possibly the atmospheric changes may increase or lessen the lymph pressure in the body, and so increase or lessen the tension in the affected fibrous tissues. A very common cause of lumbago from exposure to a local draught is sitting on a draughty privy or water-closet; this, no doubt, accounts for the prevalence of that affection in rural districts, combined with the constant strain of the lumbar muscles amongst so many agricultural labourers.

2. *Extremes of heat and cold.*—Sudden and considerable variations in temperature constitute by no means an uncommon cause of a generalised fibrositis which takes the form of so-called "muscular rheumatism," following on the resulting chill.

3. *Local injuries.*—These are responsible for a large number of cases of local fibrositis, so-called "local rheumatism." Traumatic fibrositis is a definite form and is induced by sudden and severe strain on tendinous and ligamentous structures. Such a form may persist for a lengthened period, for whereas the slighter forms of muscular fibrositis, such as "stiff neck" and mild forms of lumbago, are usually of brief duration, that which affects the tendinous and ligamentous structures may persist for weeks and even months. Golf produces a number of such injuries, the fibrous tissues of the muscles and their attachments to the arms and back being specially affected in this game.

4. *Absorption of irritating toxins from the alimentary tract.*—It has long been recognised that disorders of the alimentary tract may give rise to "rheumatic" pains. Oral sepsis is undoubtedly responsible for the development of some forms of chronic rheumatism. The aching in the joints and the lumbar region that occasionally occurs the day after a lengthy dinner, especially if several wines have been indulged in, is due to irritation of the fibrous tissues by the toxins absorbed from the intestinal tract and which have been produced there by abnormal fermentation. This pain, whether in the joints or the lumbar region, which follows excessive indulgence at the table is generally attributed to gout, and, as a rule, the champagne, claret, or port is blamed for it. I am convinced, however, that this articular or muscular pain has, in the great majority of cases, no relation whatever to gout, and that it is due to a self-generated systemic poison owing to the inability of the gastro-intestinal tract to deal properly with the various articles introduced into it.

5. *Tonsillitis and pharyngitis.*—The aching pains that occur in various parts of the body in connexion with these affections are well known and are doubtless due to toxic absorption and consequent irritation of the fibrous tissues.

6. *Influenza.*—Many individuals are personally acquainted with the aches and even severe pains in the muscles, joints, and bones which accompany this disease. These are in all probability due to the fibrositis set up by the specific microbe or its toxin. It is not uncommon to find fibrous nodules and thickenings left as sequelæ of this disease.

7. *Febricula.*—A "feverish cold" is generally accompanied by aching pains in the muscles, joints, and bones. The attack, which is sometimes described as a "rheumatic cold" or an "influenzal cold," is microbic in its origin, and the pains are no doubt due to irritation of the fibrous tissues by the microbe or its toxin.

Various Forms of Fibrositis.

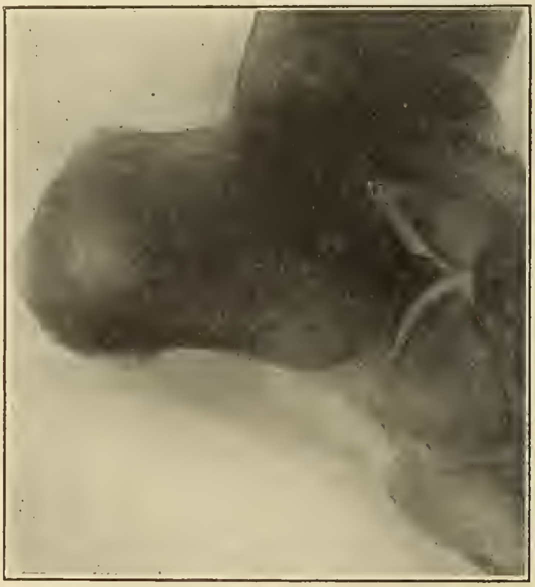
Muscular rheumatism.—This affection is always a fibrositis. Any of the muscles may be affected. Affection of the muscles of the lumbar region constitutes one of the forms of lumbago; affection of the muscles of the neck constitutes stiff neck; affection of the deltoid muscle constitutes "deltoid rheumatism"; affection of the intercostal muscles constitutes "intercostal rheumatism."

Muscular fibrositis of the shoulder and upper arm muscles is at times a very distressing malady, and so severe is the pain in the affected muscles that any attempt at passive movement causes an involuntary contraction in them, which contraction in its turn considerably augments the pain. The result is that under such conditions the shoulder-joint appears to be fixed and gives the impression of the presence of firm adhesions within the joint. It is, in my experience, fairly common to meet with such cases of muscular fibrositis which simulate a fixation of the joints, and in the present days of rapid motoring, with consequent exposure to draught, such cases are becoming more and more frequent. Motorists who ride in the back seats of an open car provided with a wind shield are, if insufficiently clad, especially liable to such attacks of fibrositis, owing to the powerful back draught to which the back of the neck and the shoulders are exposed. In some of these cases of brachial fibrositis the interference with sleep on account of a difficulty of securing an easy posture in bed, as well as the pain produced by each movement of the arm, are extremely trying to the patient.

In severe cases of brachial fibrositis the inflammatory condition may spread to the adjacent nerve sheaths, and so cause a secondary brachial neuritis. It is not uncommon for the tendinous attachments of the muscles to be especially affected, and I have seen several cases in which the fibrositis has been limited to the insertion of the deltoid, so that the pain has been entirely confined to that locality.

Lumbago.—This is a very typical form of fibrositis. It may be an affection of the fibrous elements of the lumbar muscles, but more commonly it starts as a localised affection of the insertions of the muscles in the vicinity of one or both of the sacro-iliac joints. It spreads by continuity of the fibrous tissue, as is manifested by its affecting the tendinous attachments of the neighbouring muscles, by its affecting the sacro-iliac joint itself, and by its often spreading through the joint and reaching the sheath of the sciatic nerve. This explains the very frequent association of some degree of sciatica with an attack of lumbago.

The production of the pain of lumbago is usually sudden, the patient frequently ascribing it to a sudden strain or wrick, especially on rising in the morning; but although the production of the pain is generally sudden, yet the condition on which it depends has been gradually developed.



Dupuytren's contraction.—This is a localised fibrositis caused by habitual postural use of the hand. It is frequently ascribed to gout, but, according to my experience, the condition has no connexion with that disease. Certainly, I have never seen any gouty deposits in the thickened tissues, nor is the affection commoner amongst gouty subjects.

Fibrositis of the plantar fascia.—A fairly common form of localised fibrositis is that which affects the plantar fascia. This causes pain in the sole of the foot when the weight of the body is on it, and if not arrested is liable to lead to the development of flat foot. The fibrositis is sometimes localised to the attachment of the fascia to the inner tubercle of the os calcis, and then constitutes one of the commonest forms of painful heel. If the inflammation persists at this point it is liable to cause a local periostitis and osteitis, resulting in the formation of a bony spur, which, if not removed, constitutes a permanently painful heel. The accompanying reproduction of a radiogram shows such a bony spur on the os calcis. The patient, who was a gouty individual, was sent to me on account of his chronic painful heel. I advised removal of the spur, which was done by Sir William H. Bennett, with a result that the patient was completely cured of the painful heel.

Pads upon the finger joints.—These constitute a chronic form of localised fibrositis, and have been thoroughly described by Archibald E. Garrod. They form excrescences which are almost confined to the dorsal aspects of the interphalangeal joints of the proximal row, and are only very rarely seen upon the terminal joints of the fingers. They are usually present upon the fingers of both hands, and vary in size from that of a split pea to that of the half of a hazelnut. Sometimes they are quite painless, but more often pain of various degrees of severity is complained of, especially when the fingers are flexed or if the lumps are knocked. Patients suffering from these pads generally seek medical advice under the apprehension that they are the precursors or accompaniments of rheumatoid arthritis, or that they are due to chronic gout. There does not, however, appear to be any connexion between these pads and either rheumatoid arthritis or gout. There is, however, an intimate connexion between these pads and Dupuytren's contraction of the palmar fascia, and it is fairly common to see the two conditions together.

Chronic villous synovitis.—Although, according to the strict interpretation of the term, this is not a form of fibrositis, yet it may be conveniently referred to here, as its correct treatment is similar to that of other chronic rheumatic conditions. It is a purely local condition and not a manifestation of a general disease. It usually occurs in the knee, and is characterised by crepitus or creaking on movement and by pain and tenderness on use. The crepitus during movement of the joint is frequently unpleasantly audible to the patient, and is especially caused by going up or down stairs. The capsule and the ligaments of the joint are more or less relaxed and the synovial membrane is passively congested and loose. The crepitation on movement is due to the folds of the flabby congested membrane rubbing together; in other words, it is a true creaking and not a bony grating. If further relaxation of the synovial membrane results, hernial-like projections of the synovial fringe may be produced which are apt to cause a catching or locking of the joint when it is moved. In this class of cases the fluid in the joint is generally quite normal, although, if there be great irritation, some excess of it may form. The condition is very frequently mistaken for rheumatoid arthritis, but there is no erosion of cartilages, and no eburnation of the ends of the bones, consequently bony grating can never be produced in such joints.

Treatment.

A saline aperient should always be given at the onset of an attack of acute fibrositis, and repeated as necessary. If the attack is a severe one a short confinement to bed may be necessary. In all cases of brachial fibrositis the arm should be carried in a sling and should be moved as little as possible during dressing and undressing.

Drugs.—In the treatment of the different forms of fibrositis salicylates are of little curative value, as they do not exercise the same specific action as in acute rheumatism. Aspirin is of decided use for the relief of pain in severe cases, but it should only be given with that object. It acts better than the salicylate of soda owing to the fact that it is not decomposed and absorption does not commence until it reaches the intestinal tract, where a slow liberation of its salicylic acid moiety takes place. It probably also exercises a beneficial effect in cases of abnormal intestinal fermentation. Iodide of potassium is a most valuable drug in the treatment of fibrositis. It seems to exercise a direct effect in removing the hyperplasia and serous exudation in the fibrous tissues. It should always, if possible, be given in full doses of 10 or 12 grains, and should be combined with tonics such as nux vomica or the compound glycero-phosphate syrup. If the iodide produces severe symptoms of iodism one of the organic iodine compounds may be tried. Of these I have found iodipin, in the form of tablets, extremely useful.

Fibrolysin.—This is a chemical combination of thiosinamine and sodium salicylate. It is freely soluble in water, but the solution undergoes oxidation when kept in the presence of air and light. It is therefore supplied in sealed phials, which are tinted so as to exclude the actinic rays. Thiosinamine is allyl-sulpho-urea, and was originally found to possess a peculiar action on scar tissue in causing it to swell, stretch, and become soft; a similar effect was later found to be produced by it in other cases of pathological fibrous tissue. It is but little soluble in water, but freely so in alcohol. Alcoholic injections of it, however, are very painful, an objection which is almost entirely removed by the use of it in the form of fibrolysin. It must be administered by intramuscular, subcutaneous, or intravenous injection, as it is inactive when taken by the mouth.

The method of injection that I invariably employ is into the deep subcutaneous tissues of the upper arm, each arm being injected alternately. In my experience there is no necessity to inject it at the site of the fibrositis or scar tissue. The injections should be made under strict antiseptic precautions, and when so done they seldom cause anything more than a slight temporary local pain. It is necessary to give from 30 to 40 injections in all, and they should be administered on alternate days. After 20 injections have been given movements and massage of the affected fibrous tissues should be commenced, as it is at this stage that the thickened tissues usually begin to soften and are then likely to stretch if movements and massage are employed. It is in my experience essential that the injections of the fibrolysin should be followed by massage and movements of the affected parts.

I have employed fibrolysin in several cases of thickening and contraction of fibrous tissues associated with different forms of fibrositis and arthritis, and also in several cases of Dupuytren's contraction of the palmar fascia. In some of the cases no benefit resulted, but in the majority good results were obtained; whilst in several of the cases of stiffened and distorted joints the results were remarkably good, so that the joints, which were previously for all practical purposes useless, had good movements restored and became in most of the cases freely mobile. In the majority of the cases of Dupuytren's contraction the thickening of the fascia and the consequent deformities entirely disappeared. Roughly speaking, in about one-third of the cases fibrolysin failed, and in about two-thirds was more or less successful. I am therefore of opinion that in properly selected cases fibrolysin is a very useful drug to employ, but it is essential that in cases of stiffened and distorted joints it should not be employed while any active mischief is proceeding within the joints. I am unable to offer any definite opinion as to the permanency of the good results in the successful cases, but so far I have not met with any relapses.

As regards the treatment of pads upon the finger-joints, fibrolysin is undoubtedly useful in promoting the softening of these pads. The only other treatment that I have found of use is the nightly inunction of a 25 per cent. iothion ointment, which causes softening and partial absorption of the thickened tissues, although I have never known them to entirely disappear under such treatment.

Formic acid and bee stinging.—Bee poison contains in addition to formic acid an alkaloidal base akin to the venoms, but it would appear that the action of bee poison in rheumatic subjects is attributable to its formic acid constituent. It is possible that if the direct stinging with bees is of any efficacy in the treatment of rheumatism, it is simply due to the action of formic acid as a counter-irritant. I have had no experience of the treatment of rheumatism by means of bee stings, but a few years ago I gave an extensive trial to the treatment of several forms of chronic rheumatism by means of formic acid administered internally. The results, however, were so discouraging, and compared so unfavourably with the results obtained by other methods of treatment, that I have completely abandoned the use of formic acid.

External applications.—In the early stages of an acute fibrositis hot fomentations are useful. Afterwards one of the best external applications in my experience is a mixture of equal parts of chloral hydrate, camphor, and menthol. These three substances form a liquid when well rubbed together. This liquid should be painted over the painful area, and then be gently rubbed in with the fingers. Some patients find the cold sensation produced by the menthol objectionable; in such cases the menthol may be omitted and equal parts of chloral hydrate and camphor employed, which also form a liquid when rubbed together. Another useful external application is to paint the painful area with tincture of iodine and then to apply a hot linseed poultice or a very hot fomentation. The heat converts the iodine into vapour, which exercises an anodyne effect and, probably by absorption, directly acts on the affected fibrous tissues. In the later stages the aconite, belladonna, and chloroform liniment applied on lint is frequently most beneficial. In cases of a very localised fibrositis counter-irritation is sometimes of great use, especially in the form of the thermo-cautery.

Heat and electricity.—Rest of the affected parts and diaphoresis are two of the most important procedures in the treatment of rheumatic fibrositis; diaphoresis is especially beneficial at the onset of an attack. Heat is of the greatest use in the treatment of these cases, and if employed early will frequently abort an attack. Heat dilates the peripheral vessels, lowers blood pressure, causes diaphoresis, and relieves pain. If heat is to be applied to the entire body the electric light cabinet bath is the most convenient and most useful form. I regard the combination of the heat and light rays as most useful and as being far superior in their effects to the employment of dark heat.

In strictly localised forms of fibrositis, and especially in cases of lumbago and chronic villous synovitis of the knees, the most effective form of local treatment that I am acquainted with is the employment of superheated air followed by ionisation (cataphoresis) of the affected joint or part. I have employed this method of treatment in some hundreds of cases and with the most satisfactory results. In cases of affected joints I always order the employment of the superheated air cylinder, and in cases of lumbago either the entire body electric light bath or the application of superheated air locally by one of the forms of apparatus that have been devised for the purpose. The application of the superheated air lasts for 15 to 20 minutes, and is immediately followed by ionisation lasting from 10 to 15 minutes.

In chronic joint cases and in chronic cases of lumbago I always order the employment for ionisation of a 2 per cent. solution of iodide of lithium and direct that the negative ion (the iodine) should be driven into the affected tissues. In cases of acute lumbago ionisation should be done with a 2 per cent. solution of salicylate of sodium at the first sitting or two, in order to produce immediate relief of the severe pain. The salicyl ion is introduced into the painful region, and it is remarkable how rapidly it will relieve the pain, just as salicylic ionisation rapidly relieves the pain of most cases of severe neuralgia and some forms of neuritis. I have found this method of treatment with superheated air and ionisation of the greatest value, and it has a very remarkable effect in causing the absorption of thickened fibrous tissues.

In the later stages of a muscular fibrositis a rapidly interrupted faradic current is beneficial, but it should be so weak as not to cause any muscular contraction.

Massage and exercises.—Massage is very useful in the later stages, but it should not be employed until it causes no pain. The manipulations should be very gentle at first, so as to promote removal of exudation and to relieve the tension. Afterwards more vigorous massage is most efficacious in dispersing the indurations and fibrous thickenings, and in removing the stiffness of the affected part.

During the very painful stage of muscular rheumatism as complete rest as possible of the affected muscles must be enforced, but later on exercises of the muscles are of great benefit. Either light dumb-bells or Indian clubs of from one to two pounds in weight should be employed, and such movements are to be performed as will bring the affected muscles into action. The exercises should be performed on rising in the morning and should not occupy more than from 10 to 15 minutes. After the exercises a cold or tepid bath should be taken and the skin be briskly rubbed with a rough towel.

Diet.—Unlike gout, no special dieting is required in these affections. Moderation should be the keynote of all prone to the various forms of fibrositis, and especially should they avoid foods which their experience has taught them to be apt to produce gastro-intestinal fermentation. It has become of late years a fashionable craze to attribute many of these forms of "chronic rheumatism" to uric acid, but I am firmly convinced that that harmless by-product of the human economy plays no part whatever in the development of the various forms of chronic rheumatism or fibrositis.

Underclothing.—With regard to the underclothing that should be worn by rheumatic individuals I must confess that I am a convert to the view that porous linen underwear is the most suitable. It allows of the free evaporation of perspiration and so prevents a more or less sodden garment from remaining in contact with the skin, which so frequently happens with those who wear woollen underclothing. I am convinced that in the latter case such sodden garments are a frequent cause of many of the forms of chronic rheumatism. Some individuals find that in winter linen underwear is too cold, and in such cases a thin silk vest may be worn over the linen. This will be found to constitute a thoroughly warm, comfortable, and safe form of underwear.

Queen Anne-street, W.

A CASE OF ENTERIC INTUSSUSCEPTION WITH HENOCH'S PURPURA;

EXCISION; INTESTINAL DRAINAGE FOLLOWED BY END-TO-END UNION; RECOVERY.

By F. W. COLLINSON, M.D. EDIN., M.R.C.P. LOND., F.R C.S. EDIN.,
HONORARY MEDICAL OFFICER TO THE PRESTON ROYAL INFIRMARY.

THE combination of Henoch's purpura and the associated crises from intestinal effusions, and the often very serious presence of intussusception, has recently called forth much attention. The almost impossible task of certain diagnosis as to the presence or absence of the intussusception was clearly set forth by Dr. G. A. Sutherland in his paper read before the Medical Section of the Royal Society of Medicine on June 22nd, 1909, which was reported in THE LANCET of the same week. The interest of the combination in the following case, but mainly the successful result of the treatment by excision of the intussusception, with intestinal drainage for 96 hours by means of Paul's tubes, followed by end-to-end anastomosis, is my excuse for this report.

On Sunday, Sept. 22nd, 1907, at 6.30 P.M., Dr. T. H. C. Derham called me to see a boy, aged 4 years, who was suffering from severe abdominal pain and distension, with persistent vomiting and obstruction. The family history was good, and the boy, with the exception of early children's complaints, had been in good health, with regular intestinal action and freedom from any abdominal pain until this illness. On the previous Friday week he complained of pains in his legs, and two days later he was driven about 20 miles in an open conveyance with his legs uncovered, and his parents noticed at night that they were swollen and discoloured and that the next day there was a purpuric rash upon them. On the Tuesday and Wednesday he had abdominal pains and vomited several times, but the bowels acted regularly. The abdominal pains continued but were less severe, and he got up, but this was followed by a second purpuric rash on the legs. On Thursday, Sept. 19th, he appeared to be fairly well and was hungry, and they unfortunately gave him currant cakes and a "Goosnargh cake," which is made of sugar and butter with a little flour, a local delicacy requiring an ostrich-like power of digestion! He quickly vomited, and continued to do so up to the first operation, and also had abdominal pains. On the Saturday the vomit was yellow, but he appeared rather easier.

On Sunday at 6.30 P.M. I first saw the boy, when he was pale and cried out periodically from abdominal pains. The temperature was normal, pulse 132, tongue dry, breath with fæcal odour, vomit like duodenal fluid, and the abdomen was greatly distended and intestinal movements were apparent. Rectally only a pelvic fulness was noticed and an entire absence of any trace of blood; the latter was absent throughout the entire attack. Having been removed to the Preston Infirmary, at 8 P.M. he was wrapped in cotton-wool and placed on hot-water bottles, and his abdomen was opened below the umbilicus to the right of the middle line. Some clear ascitic fluid escaped, and the small intestines were found congested and much dilated, but I did not observe any hæmorrhagic patches. A firm long tumour was felt impacted in the pelvis, but soon delivered outside, and found to be an enteric intussusception 8 inches in length and ulcerated at its neck, and reduction was seen to be impossible. The critical condition of the boy with the great intestinal distension and fæcal toxæmia demanded some ready method of intestinal drainage. The tumour was quickly excised, and Paul's drainage-tubes were tied into the ends of the gut and the abdominal wound was closed around them. The bowel contents began rapidly to flow from both ends, especially from the upper gut, until between two and three pints had escaped during the first 24 hours. The vomiting ceased at the operation but rectal saline injections were not retained. On the next day and onwards he was able to take liquid nourishment, and every four hours pancreatised milk was poured into the lower section of the bowel through the Paul's tube. His pulse was 160 after the operation but soon came down to 132. On the Wednesday he was fairly well and demanded solid food, and the abdomen was quite flat. Fearing that he would lose ground and the skin excoriate, if the tubes were allowed to separate, it was thought best to attempt anastomosis without delay.

Ninety-six hours after the first operation the abdominal wound was reopened; the Paul's tubes were just separating. Two inches were excised from each end of the gut and end-to-end suture was done with celluloid thread, the operation being facilitated by the convenience of Carless's forceps. When stitching up the abdominal incision the bloodlessness of the edges was very apparent and more was removed before suturing. The operation occupied 45 minutes. The pulse was 160 and shock was evident, but albumin water was given at once and strychnine and digitalis hypodermically. The bowels were moved in six hours and the general progress was steady, but the edges of the wound sloughed, requiring frequent dressing. The boy went home on Nov. 14th wearing an abdominal belt and looking well and bright. Since then he has grown normally and is in good health and has not had any abdominal trouble.

The slightness of the purpura, at least externally, and the absence of blood and mucus in the motions might throw doubt upon a diagnosis of Henoch's purpura, nevertheless I think that Dr. Derham was justified in thinking that the symptoms, at least up to the Thursday, were due to the purpura, and the apparent improvement in the two following days made him judge that even then this disease would explain all. Dr. Sutherland, in the paper referred to above, when commenting upon a case reported by Dr. F. de Havilland Hall where blood and mucus were absent, still thought that his diagnosis of Henoch's purpura was justified. Certainly in the case before us we did not observe any hæmorrhagic effusions into the bowel walls; this might be due to hurry and my imperfect knowledge of the disease and its manifestations. There were not any sloughing patches in the skin, but there was a decided tendency for the edges of the abdominal wound to slough.

The fact that effusion into the intestinal walls, which occurs in Henoch's purpura, may give rise to all the signs and symptoms of intussusception, even including the presence of a palpable tumour, should always be remembered when examining cases of purpura having abdominal symptoms. The marked diminution of the earlier symptoms upon the Thursday and the return of the appetite exclude the possibility of the intussusception having been present up to that time; also the appearance of the intussusception, remembering that it was enteric, did not make one think that it could be more than of 80 to 90 hours' duration.

Mr. Henry Rutherfurd[1] describes a case of ileo-cæcal intussusception in which he performed lateral anastomosis between the ileum and transverse colon without interfering with the intussusception, which he found impossible to reduce completely. He there discusses the various methods of surgical interference and advocates the method he adopted. Not having tried the method, one is chary of criticising it, but the leaving of a portion of gut in the abdominal cavity, which already may be gangrenous or soon become so, does not appeal to one's surgical instincts. This method, even if good in the ileo-cæcal variety, would be scarcely advisable with the enteric variety.

Up to recent times excision of the intussusception with end-to-end union has been very fatal. In the case under consideration it appeared fairly certain that any treatment which did not relieve quickly and easily the great distension of the bowel, with the consequent toxæmia and the severe pressure upon the thoracic organs caused by the upward displacement of the diaphragm, would be fraught with great danger to the patient. The excision of the intussusception removed a possible source of infection, and the use of Paul's tubes provided excellently for the drainage. A slight advantage was the ability to feed the patient with pancreatised milk through the lower portion of the bowel. Certainly any attempt to do an immediate end-to-end suturing where there is much distension, and especially where there is any purpura, must be fatal. Another suggestion, to make an enterostomy opening above the intussusception, leaving the tumour, appears unsatisfactory compared to the cleanly excision of it with free drainage by Paul's tubes.

Appreciating the danger of marasmus and skin infection, the earliest opportunity was taken advantage of for making complete the intestinal tube. There is always an objection to a double operation, but the first one here was short and simple, a very slight tax upon the vitality, and only intended to give relief to the fatal conditions, and could be done even in very imperfect surgical surroundings. The second operation could be arranged for with more care, and, if necessary, the patient could be removed to more perfect surgical surroundings.

---

[1] The British Journal of Children's Diseases, September, 1909.

I am indebted to Dr. R. Makins, senior house surgeon, for his assistance, and to Sister Eggins for her keen and able nursing of the case.

Preston.

THE TREATMENT OF VOMITING.

BY J. SNOWMAN, M.D. BRUX., M.R.C.P. LOND.

VOMITING is one of those conditions which often demand unequivocal symptomatic treatment, contrary though this course may be to the canons of rational therapeutics. Its origin may be due to such grave disturbances as intestinal obstruction or cerebral tumour; but short of this, the less menacing causes can act long enough to produce serious malnutrition and considerable wasting. The vomiting in chronic renal disease, on the one hand, and the characteristic emesis pathognomonic of gastric dilatation, on the other, interfere so gravely with nutrition that attention must be riveted on the easiest method of subduing the symptom, which, if allowed to proceed unchecked, may compromise life itself. When vomiting has been at all persistent the state of nutrition rapidly deteriorates, and this necessitates the simultaneous institution of means to ensure an efficient assimilation of food and a restoration of the nutritive balance to the normal.

There is one piece of mechanism common to all the numerous pathological activities which may excite vomiting. This mechanism concerns certain molecular changes in the nerve cells of a vomiting centre, situated in the depths of the medulla in the neighbourhood of the calamus scriptorius. This centre is liable to be disturbed by impulses streaming in along nerve fibres from ubiquitous directions. The impulse may start in the higher cerebral centres; thus vomiting may follow disagreeable visual or olfactory sensations. Irritation of the uterus, kidney, liver, &c., or the stimulus of sudden severe pain may also be responsible for vomiting. There are, however, certain areas of the body wherein irritation provokes the vomiting centre with especial facility. The gastric mucous membrane is obviously such an area, but the distribution of the glosso-pharyngeal nerve constitutes an almost equally fertile source of such vomiting impulses. But though the vomiting centre may be set into action from such an extensive periphery, the stomach always remains the predominant agent in the causation of this symptom, even when not the originating source of offence. The centre, being once excited by peripheral irritation, remains in a state of hyper-susceptibility, and nothing is so likely to throw it into action as those slight gastric derangements which under normal circumstances would pass off with impunity. The practical physician will therefore never neglect the stomach in his scheme of treatment of any individual case of vomiting.

The stomach assumes an important position in the therapeutics of vomiting, because it is through the stomach that the nutritive ravages wrought by the vomiting must be repaired. This organ must enter into one's calculations when treating the reflex vomiting of pregnancy, or of meningitis, just as it does when treating the direct vomiting of gastric ulcer or carcinoma. A little thought may well raise a doubt as to the accuracy of the assumption which labels so many instances of vomiting with the characters of reflex acts. Take the case of the business man who returns to his office from a rapid lunch to find a piece of serious and disquieting news awaiting him. He becomes thoroughly upset and very soon vomits his meal. This untoward proceeding is usually explained to be the result of cerebral emotion setting up impulses which irritate the vomiting centre. But a more feasible interpretation would be that the cerebral emotion has inhibited the nervous energy requisite for the digestive processes within the stomach; a sudden and severe disturbance has interrupted the orderly progress of digestion, the meal itself becomes a source of irritation to the gastric mucous membrane, and it is this circumstance which starts the reflex that terminates in vomiting. Thus, the vomiting remains a reflex act, but the peripheral impulse proceeds not from the cerebrum but from the mucous membrane of the stomach.

This is a consideration which must obviously influence the treatment of vomiting, because it suggests that the stomach may indeed be playing an important part even in those cases where the vomiting is assumed not to be of a gastric origin. When we come to the question of treatment we also see that it is not practicable to limit one's therapeutic endeavours to dealing with causes. Thus certain forms of vomiting which are definitely of central nerve origin are recommended to be treated with drugs which act as sedatives to the peripheral nerves in the stomach. The vomiting associated, for instance, with cerebral tumour, Ménière's disease, or sea sickness is therefore usually treated with such drugs as cocaine, menthol, or chloretone. This again illustrates the value of taking the stomach into account, whatever be the ultimate cause of the rejection of its contents. From the point of view of rational therapeutics this course may be empirical, but clinically it is often crowned with success.

But nevertheless it is desirable, even when dealing clinically with the subject of vomiting, to be safeguarded by a working knowledge of the cause of the symptom in any individual case. Every case of vomiting which comes under treatment will fall into one of three groups which may be distinguished as (1) local, (2) toxic, and (3) reflex.

The *first group* includes all those instances where the vomiting is explained by local conditions within the stomach. There may be deficient functional activity as in acute fevers, or a catarrhal condition may prevent the efficient discharge of the digestive process. The catarrh may be primary, or it may be associated with gastric ulcer or cancer; it may be a symptom of alcoholism, it may be incidental to phthisis, or to disease of the heart or liver.

The *second group* comprises all those morbid states wherein a toxæmia is either known to exist or assumed to exist. The toxic substances of the blood directly irritate the vomiting centre in these cases. This is clearly seen in the vomiting which often accompanies the invasion of acute specific fevers; it is evident also in post-anæsthetic vomiting, in Addison's disease, and in the cyclical or pernicious vomiting of children; in actual practice, however, its most frequent occurrence is in renal disease.

The *third, or reflex, group* embraces the vomiting of cerebral origin, of labyrinthine disease, of the pain of visceral disease generally, including such conditions as hernia and intestinal obstruction. The vomiting of pregnancy should probably come into this group. Closely allied to this group is the vomiting of pertussis and other diseases where there is cough of a paroxysmal character, particularly bronchiectasis. The vomiting centre is situated in close proximity to the respiratory centre, and irritation of the latter is very liable to extend to the former and cause vomiting.

In the treatment of vomiting the first point to determine is, whether it is an incidental symptom of an acute illness or whether it is a cardinal feature of some chronic disease. The routine of treatment in the two cases is quite different. There may be troublesome vomiting even on an exclusive milk diet in typhoid fever or in pneumonia; but this symptom is not of the essence of the disease, and we are confident that an abatement in the severity of the primary trouble will witness a cessation of the vomiting. It is therefore quite permissible to resort for a few days to what practically amounts to starvation until the stomach recovers some functional power, as indicated by the assertion of an appetite. This method of starvation is often disguised as feeding by means of veal tea, chicken tea, or various meat extract preparations. Obviously this can only be a very temporary measure, and if it is not successful in a disease like typhoid fever the nutrition of the patient becomes seriously compromised. In chronic diseases it is quite clear that this method has no vogue at all.

It is quite possible, however, to manage the dietetic treatment of the vomiting of acute illnesses by less drastic measures than virtual starvation. The desideratum is to make a strict milk diet easily tolerated. Dilution and peptonisation are calculated to achieve this, but the former process necessarily detracts from its nutritive value, and the unpalatability of peptonised milk is a serious disadvantage. In these cases it is much better to feed with one of the preparations of dry casein, many of which have been introduced to the profession from time to time. In acute febrile conditions with vomiting I order the milk to be diluted with twice its amount of water, and sanatogen to be added to the extent of fifteen grains for each ounce of water used; thus if six ounces of milk and water constitute one feed, 60 grains of sanatogen would be added to it. This brings the nutritive value of the mixture up to the pure milk standard, and it avoids the disadvantage and trouble of peptonisation. Anti-emetic drugs, to be mentioned later on, are of little value in this condition, because they are themselves promptly vomited. But casein in the dry pulverised form is so exquisitely bland that even the functionless stomach of the acute febrile state is equal to its digestion. The fine subdivision in which the casein exists contrasts strikingly with the tough curds in which it is precipitated from pure milk. This explains its easy toleration when added to well diluted milk.

Occasionally one comes across cases wherein this method fails. This is generally due to the intolerance of even diluted milk; and in these instances the use of nutrient enemata appears to be the proper procedure. Without discussing here the *pros* or *cons* of rectal feeding, it is interesting to point out that dried casein is the form of albumin which presents the greatest possibility of being absorbed by the rectum. Sodium-casein is assimilated to the extent of about 40 per cent., and the experiments of Seymour Sharkey in England and of Hoppe in Germany indicate that the casein as it exists in sanatogen is absorbed to the amount of 75 to 80 per cent. Personally, I do not employ this preparation as a nutrient enema, because I find that if it cannot be retained by the stomach when given with diluted milk there is still every prospect of it being tolerated when administered merely mixed with water. This constitutes a decided advantage over feeding with hot water or such liquids which have a suggestion of nutriment about them, but which really possess little or nothing of this virtue, so essential for the acute invalid.

When the habit of vomiting is once overcome in febrile disease by this method, the tolerance of the stomach for an appropriate diet becomes rapidly established. I may refer here to a severe case of vomiting recently under my care which arose from cerebral concussion. The patient, a young man, aged 25 years, sustained a fall of several feet down the hold of a ship; the actual injuries he sustained were trifling, but his main symptom subsequently was uncontrollable vomiting. He was treated in hospital by absolute rest in bed, and all the usual methods for allaying vomiting were invoked. After three weeks of this treatment his condition was indeed pitiable—a frail, wasted, nervous wreck of his former self. In this state he left the hospital and came under my charge. I ordered an ice-bag to the head, a mustard leaf to the epigastrium, absolute recumbency in bed, and small feeds of sanatogen with water. This diet was continued for three days, but the vomiting had completely ceased on the second day. Then milk was added to the diet, and through rapid stages of feeding he advanced until, on the tenth day, he was able to cope successfully with an ordinary lunch.

The foregoing really seemed to be the type of case which should benefit from drugs acting as sedatives to the vomiting centre. But their failure in this instance, however, is no argument against the principle of their employment, but is rather a plea for accompanying their administration with scrupulous attention to the gastric element of such cases. But treatment is notoriously uncertain when the vomiting is an expression of a reflex neurosis; the vomiting of pregnancy exemplifies this to a nicety. Despite the most careful dieting and trust in the finest pharmaceutical products the wastage of whole meals in this condition is distressing to contemplate and exhausting to endure. The wisest plan under these circumstances is to secure that the nutrition of the patient does not suffer unduly, and an excellent way of effecting this is by placing reliance on preparations which are absorbed with a minimum of effort and assimilated in a maximum amount.

The only other frequent condition which compromises nutrition through vomiting in the same degree as the vomiting of pregnancy is whooping-cough. Remarkably enough, many of the drugs which have been vaunted for this disease are also recommended in the treatment of vomiting, the idea being that a drug which allays excitability of the respiratory centre may similarly influence the neighbouring vomiting centre. Dr. A. F. Voelcker, who studied 550 cases in the whooping-cough wards of the Children's Hospital, Great Ormond-street, recommends one-third of a minim of glycerine of carbolic acid with 5 grains of carbonate of bismuth when vomiting is severe.[1] Most reliance is, however, placed on a suitable dietary, which, according to this author, should consist of "iced milk, malted milk, peptonised milk, milk and soda-water, or albumen water." If these are not retained meat juice in water is very useful. The author goes on to say that "sanatogen or plasmon may be used temporarily when milk is not tolerated." But the great proteid value of these preparations renders them much superior to meat juice for the feeding of whooping-cough patients. Meat juice can only possess our confidence as a food temporarily, the casein preparations qualify for prolonged use.

These preparations obviously supply a want, and in choosing one for the treatment of vomiting attention must be paid both to its facility of absorption and its faculty of repairing the malnutrition which the vomiting has caused. One typical instance must suffice in illustration. A lady, aged 66 years, who some years previously had undergone a radical operation for cancer of the breast, began to fail in health. Slight exertion rendered her short of breath, her appetite became indifferent, she lost flesh visibly, and developed considerable anæmia. When she came under treatment her main symptoms were very defective vision, headache, and vomiting. Ophthalmoscopic examination showed that she had retinitis, and her urine revealed the presence of a large quantity of albumin and of sugar. Some of her symptoms were evidently due to chronic nephritis and others to diabetes; at any rate, she was the victim of two distinct toxæmias which seriously interfered with metabolism and threatened disaster to her general nutrition. In January, 1908, she had been under skilful treatment for some eight months; but none of her symptoms showed any improvement. The patient herself suffered most from the failing vision which seemed to be on the increase, and from the vomiting, the frequent attacks of which did at any rate not abate. The urine was loaded with albumin, the sugar amounted to 3 per cent. even on a fairly strict diet, the gait was greatly enfeebled owing to commencing neuritis, and the emaciation and general weakness were extreme. It was in this condition of disease that an endeavour was made to counteract the vomiting by administering a definite amount of proteid nutriment the absorption and assimilation of which could be relied upon.

The outlook was as unpromising as a case could be. Milk with sanatogen was vomited very frequently; this, however, seemed to be due to the fact that the taste of the preparation was unpalatable to the patient. A flavoured preparation was substituted and after a little perseverance the vomiting bouts ceased, and the patient could tolerate a fairly substantial meal with equanimity. But progress did not cease here, because with the continued use of this casein preparation a most striking improvement in the general features of the case manifested itself—an improvement which is only explicable on the assumption that despite all the toxic influences arrayed in opposition, the general metabolic activity of the body was raised to a level approaching the normal. Unfortunately, the inflammatory and exudative process in the retinæ cannot be recalled and the defect in vision remains, but it has become stationary instead of progressing as it usually does. The increase in weight has been very considerable: the rather hale and roseate aspect of the patient is a picturesque contrast to the distressing facies of profound ill health which she presented a year ago. The amount of albumin is now very small indeed, and a strict dietary suffices to remove all the sugar from the urine. There can be no question that the amelioration in this case is a result of the influence which has tended to restore the physiological balance of metabolism, and obviously the cessation of vomiting was a condition necessarily indispensable thereto.

The ordinary therapeutic measures available for the treatment of vomiting are very numerous and somewhat conflicting in their variety, a testimony to the failure which so often attends their exhibition. Nausea may be relieved occasionally, either by sips of extremely hot water or by sucking fragments of ice. This contrast is still further seen in the circumstance that sometimes a tight abdominal binder will stop nausea, whereas at other times this unpleasant sensation yields when the clothing around the abdomen is loosened. Perfect recumbency in the horizontal position should be maintained, and such local applications to the epigastrium as sinapisms, blisters, or leeches are frequently very useful. The washing out of the stomach with weak boric lotion or alkaline solutions is an excellent method of treating the persistent vomiting in gastric dilatation or the gastric catarrh of infants.

---

[1] Index of Treatment, by Hutchinson and Collier.

I add a few personal experiences of the use of the routine remedies for vomiting. The favourite drug for the treatment of vomiting is bismuth in one of its various forms. This is an excellent remedy when the vomiting results from gastric irritation, but in other circumstances little is to be expected from it. The carbonate should be chosen in preference to the subnitrate, because the latter is liable to become converted in the intestine into the nitrite and produce toxic symptoms. Another disadvantage of prescribing the subnitrate is that the mixture containing it usually has bicarbonate of soda as one of the ingredients, and the interaction of these two substances may lead to the evolution of sufficient carbonic acid to force the cork out of the bottle. Cerium oxalate, which is official in the United States Pharmacopœia, probably acts in the same way as bismuth, but nothing definite is known of its pharmacology. It has acquired a reputation in the treatment of the vomiting of pregnancy, but clinical experience generally fails to confirm it.

Creosote, iodine, and carbolic acid may be grouped together as a series of drugs which allay vomiting when suitably employed. Cases of fermentative action in the stomach would appear to be beneficially influenced by their use, and the vomiting accompanying this condition abates because these drugs relieve the cause of this symptom. But it must be remembered that both creosote and carbolic acid have a local anæsthetic effect, and this may, in some measure, explain their anti-emetic virtue. The use of drop doses of tincture of iodine, well diluted in water, is a purely empirical measure which succeeds less often than it fails. The same must be said for vinum ipecacuanhæ, which is credited with success in the treatment of the vomiting of pregnancy when given in homœopathic doses. Tincture of hydrastis is another preparation which has gained special praise for the same condition. A drug still less frequently used for vomiting is orexin tannate. This is recommended for the vomiting after opium, chloroform, or other narcotics. The dose is from 5 to 12 grains and it should be given two hours before meals.

Aconite has some vogue in the treatment of vomiting, but it must be given in large doses. It then numbs the reflex centres and acts as a powerful sedative to the peripheral nerves in the gastric mucous membrane. It is one of the host of drugs suggested for the vomiting of pregnancy. Chloretone is really an effective remedy when some painful local disease, such as cancer of the stomach, is responsible for the vomiting. In doses of from 5 to 8 grains it relieves pain to a considerable degree and permits the stomach to tolerate a certain amount of food. One-third of a grain of cocaine will occasionally put a sudden stop to a bout of vomiting, and is one of the most effective remedies available for sea sickness. Hydrocyanic acid is another drug with a reputation in gastric vomiting, but if it acts it does so forthwith, and if it proves to be unsuccessful at first it is merely a waste of time to persist with it. On the other hand, in vomiting of reflex origin it is worth while to persist with bromide of potassium, and, indeed, to give it per rectum if the stomach does not tolerate it. There is another drug which may be given by the same route in the form of suppositories—and that is opium. On the whole, opium is our most valuable remedy for vomiting which is persistent and exhausting, and then it must be given in the form of a hypodermic injection of morphine. This drug acts unquestionably as a powerful sedative to the vomiting centre, and it will afford relief as definitely as it does in a paroxysm of pain. For rapid and immediate effect there is no drug to compare with it in the Pharmacopœia. This action is in striking contrast to that of the substance produced by heating morphine in sealed tubes with hydrochloric acid. This procedure deprives the morphine of one molecule of H_2O, and the resulting product is apomorphine, which is a direct irritant to the vomiting centre and therefore a powerful emetic.

Brondesbury, N.W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Pericarditis with Effusion.

AN adjourned meeting of this section was held on March 3rd, Dr. J. MITCHELL BRUCE being in the chair.

Sir JOHN BROADBENT, in continuing the discussion on Pericarditis,[1] said that to the title of the paper by Dr. Samuel West "On Pericarditis with Effusion as determined by Operation or Post-mortem Examination," the words "and on the absence of effusion as determined by operation" might well have been added. He was sure that it must have fallen to the lot of most who had had a large experience of pericarditis to have operated on cases in which effusion had been diagnosed, and to have found instead a greatly dilated heart, with or without an adherent pericardium, but no effusion. The difficulty of diagnosing between these two conditions was often very considerable. He quoted the histories of two cases to illustrate this point. Since it was now generally recognised that an extreme degree of cardiac dilatation was commonly met with in rheumatic pericarditis, more especially in children, and was frequently associated with general adherence of the pericardium to the heart, whereas effusion to any great extent was comparatively rare, mistakes in diagnosis based on rapid increase of area of the cardiac dulness were less liable to be made. He had failed to find that the shape of the area of cardiac dulness, e.g., the so-called "pear-shape" described by Sibson, of any value in determining the presence of effusion. Rotch's sign was certainly not to be relied on as diagnostic of effusion; in many instances he had found it present in cases of universally adherent pericardium in children, especially in the relapsing cases in which the dilatation of the heart was often extreme. In the experience of Sir John Broadbent effusion to any extent in rheumatic pericarditis was exceptional and rarely met with. By far the most difficult cases and those in which effusion into the pericardium was frequently missed were cases of suppurative pericarditis. They were most commonly secondary to suppuration elsewhere—e.g., an empyema—a friction rub was seldom audible throughout their course, and there were usually no specially characteristic symptoms. The absence of a friction rub and the possible explanation of the pyrexia by suppuration elsewhere might naturally fail to arouse suspicion of pus in the pericardium, and even when this was suspected the impossibility of mapping out the area of cardiac dulness when this merged into the dulness of an empyema, and the latency of the symptoms made the diagnosis a matter of considerable difficulty. When acting as medical registrar at St. Mary's Hospital in 1900 he had seen two cases which were remarkable, in that the patients were husband and wife and that they died within ten days of each other from empyema with suppurative pericarditis. Unfortunately, even in the cases in which a suppurative effusion was rightly diagnosed and an operation for its evacuation performed the prognosis was extremely unfavourable and he had not seen a case of recovery. He had had last year the satisfaction of diagnosing effusion in a case of serous pericarditis, the presence of which was confirmed by operation. On June 1st, 1909, he was asked by Mr. H. S. Collier to see a case of pericarditis in a woman, aged 46 years, who was under his care in St. Mary's Hospital for closure of an old colotomy wound. On examining the heart the apex beat was palpable in the fifth space in the vertical nipple line. A friction rub was heard at the apex and in the fourth interspace to the left of the sternum. The area of cardiac dulness extended to the mid-sternal line and to the left merged into a dull area over the left base where there was a small pleural effusion. The temperature was 99·6° F., pulse 108, and respirations 24. On June 2nd the pericardial rub was heard at the base in the second space on both sides of the sternum as well as at the apex. On the 3rd the area of cardiac dulness extended half an inch to the right of the sternum, the friction rub had disappeared from the apex and was only faintly audible at the base. On the 4th the friction rub had entirely disappeared, the apex beat was not palpable, the heart sounds were distant and faint, and the patient was greatly distressed. The temperature was 101°, pulse 126, and respirations 26. The area of cardiac dulness when the patient was lying on her back extended one finger's breadth to the right of the sternum; to the left it merged into the dulness at the left base. On turning the patient on to her right side the area of cardiac dulness to the right of the sternum was *markedly increased*, extending rather more than two fingers' breadth to the right of the sternum. To this point he attached considerable importance, as if the dulness had been due merely to dilatation of the heart it was highly improbable that change of position could influence its area to any appreciable extent, whereas fluid in the pericardium would naturally gravitate to the lowest point. The disappearance of the apex beat and enfeeblement of the heart sounds also afforded conclusive evidence. He therefore advised aspiration of the pericardium. Mr. Collier operated under eucaine, cutting down in the fifth left space just to the left of the sternum and then inserting an aspirating needle. He drew off 30 cubic centimetres of blood-stained clear serum. The patient was greatly relieved by the operation. The next day a friction rub was audible in the second, third, and fourth interspaces to the left of the sternum; the area of cardiac dulness extended only as far as the sternum and the apex beat was just visible and palpable. She subsequently made an uninterrupted recovery, the colotomy wound was successfully closed, and she left the hospital cured and quite well on August 14th. It would appear that the removal of a comparatively small amount of fluid was sufficient to relieve symptoms and promote absorption of the remainder. He thought that effusion was more frequently met with in adults than in children and that the prognosis was more favourable. Nothing could be more unfavourable than the prognosis in the relapsing pericarditis so frequently seen in rheumatic children, in which effusion was seldom met with, but the pericardium became adherent to the dilated heart.

---

[1] This discussion was opened at a meeting of the Medical Section of the Royal Society of Medicine on Feb. 22nd, by Dr. Samuel West, with a paper entitled "Pericardial Effusion: Its Diagnosis and Treatment," which was published in THE LANCET of Feb. 26th, p. 560.

Dr. W. P. HERRINGHAM described a case in which he had found the pericardium after death full of air; it was believed that the condition was due to some gas-forming organism, but it was not found possible to grow any culture.

Dr. W. PASTEUR expressed the hope that physicians would acquire the habit of making use of the orthodiagraph in the bedside examination of patients. He had used a portable modification of the instrument for two years with the most encouraging results. The shadow-tracings obtained with it represent a definite advance on the best X ray photograph obtainable by any other method, if only for the reason that they represent the actual size and true relations of the shadows seen on the fluorescent screen. He was convinced that this method of examination was destined to yield reliable and important information, not only in regard to pericardial conditions but in morbid conditions within the chest generally. He had shown elsewhere that arrest of diaphragmatic action, if maintained for a sufficient time, led to massive collapse of the base of one or both lungs, and that a common feature of many different morbid states in which this massive collapse had been found was the existence of a powerful source of irritation in the vagus area on either side of the diaphragm. If, therefore, it could be shown that pericarditis inhibited diaphragmatic movement, this, by inducing massive collapse, would afford an adequate explanation of some of the physical signs occurring at the left base in cases of pericardial effusion. He showed two orthodiagrams from cases of pericardial effusion in which there was complete arrest of diaphragmatic movement. The state of the pulmonary bases had not been noted, but he felt confident that further observations would reveal the existence of massive collapse of the left base in cases of this nature.

Dr. J. PORTER PARKINSON said the difficulty of the diagnosis of pericarditis was well known, especially of those cases that came on insidiously without local pain and without friction sounds being heard. It was on that account that he wished to mention the occasional presence at the commencement of a pericardial effusion of a sign which was usually supposed to be one of late development only. He referred to signs of compression of the lower lobe of the left lung. He had come across several cases in children during the last few years where that sign preceded by some days both friction and increase of the cardiac dulness. At that period dulness and weak breath sounds (sometimes tubular in quality) and fine râles might suggest the onset of pneumonia, but the other signs do not as a rule coincide with that; the temperature was lower and the pulse-respiration ratio not altered. In those cases the inflammation of the pericardium probably began in its posterior part and there was a fairly considerable exudation before it reached the anterior part of the pericardium and a friction sound was audible. Of course, he was quite aware that those pressure signs were well known; they had been fully described by the late Dr. Sansom; his point was that they might occur before any considerable increase of the cardiac dulness had come on, and so might suggest pericardial effusion at an early stage. If one looked at anatomical plates of horizontal sections of the chest it was plain how easily a slight collection of pericardial fluid in the case of a patient lying on the back might compress the lower part of the left lung, even before it caused any alteration in size of the pericardial sac as seen from the front. It was generally acknowledged that the differential diagnosis between pericardial effusion and dilated heart with adherent pericardium was difficult and sometimes almost impossible. He thought, then, that in cases in which there could be any doubt it was better to call in a surgeon who could cut down slowly and feel his way, ascertaining the actual condition of things before the pericardium was opened.

Dr. CYRIL OGLE said that whilst observing a patient some years ago, who was subsequently operated upon and was proved to have the pericardium distended with fibrin and pus, he was struck by the condition of the large veins in the neck. The external jugulars were permanently distended, even when the patient was sitting up, and showed no pulsation at all. He thought that this immobile distension might be of value as distinct from the full veins with pulsation, which were usually seen with dilated heart, and might indicate an obstruction by pressure of the fluid to the entry of blood into the heart in a case of pericarditis. Since then a few cases which he had collected seemed to favour this view. He had collected the post-mortem and clinical records of the last ten years at St. George's Hospital, and these post-mortem results showed that when a patient died with rheumatic pericarditis there might be found a considerable amount of effusion and that therefore during life also extensive dulness and other such signs were probably as often due to effusion as to dilated heart, although the two might coexist. The clinical notes were not of great value, as such special points and signs as Rotch's sign, Bamberger's sign, and pulsus paradoxus were not mentioned. The post-mortem records were of interest in indicating the origin of pericarditis in relation to causation; for instance, its frequent association with lobar pneumonia and the liability to become purulent if the patient lived; also in showing how frequently in pneumonia it went undetected. In 1906 he (Dr. Ogle) had collected all the cases of pericarditis in children under four years who died in the hospital during the preceding five years; they were 16 in number. During life it seemed that the existence of pericarditis had escaped detection in all these 16 cases. He thought that there were two causes why pneumococcal pericarditis escaped detection. He thought that the sign of friction was not sufficiently often suspected and looked for in certain conditions in which it was apt to arise. It was well known that purulent pericarditis gave no friction sound, so that if the presence of friction were relied upon as a necessary sign, then purulent pericarditis would not be suspected. But when pus was present in the pericardium there was always, so far as he had observed, lymph as a solid sticky exudate in addition, and it could hardly be doubted that in an earlier case of inflammation friction was always present. It was therefore of great importance to make careful and repeated examination of the pericardium in order to detect a transient friction in all cases of pneumonia in the adult and in pleural implication in a child. Dr. Ogle alluded to a mode of operation for cases of pericardiotomy in the epigastrium which he had published in 1900 in connexion with the late Mr. Herbert Allingham. Since this method was published there had been five examples at St. George's Hospital which showed that the operation itself could be very successful in regard to the objects aimed at: thorough exploration with the finger and cleaning of the sac and heart, back and front, from infected material and then uninterrupted drainage from the most dependent part. He thought that drainage and removal of clogging masses were better than puncture with a sharp needle.

Dr. W. **IRONSIDE BRUCE** showed skiagrams and demonstrated the sharp nature of the outline of the shadow of the pericardium.

Mr. C. R. C. **LYSTER** agreed that in X ray diagnosis of the condition the clear definite outline and the spherical shape of the pericardium were most marked.

Dr. F. J. **POYNTON** said he would confine his remarks to children only, and dwell upon two aspects of the discussion which appealed to him in particular. The first was the consideration of pericardial effusion acting by virtue of its bulk as a mechanical danger to the heart, the other more difficult and more important the consideration of the effusion as a noxious fluid to be drained from the sac. In childhood it was, he agreed, difficult to distinguish between pericardial effusion and dilatation, but he was convinced a large effusion was rare. He had never seen a rheumatic case which needed paracentesis. Pneumococcal cases rarely showed a large effusion. About 66 per cent. of cases of pneumococcal pericarditis occurred in children under three years, 80 per cent. in children under four. It was almost a disease of yonng children, and he entirely disagreed with the view put forward that it was secondary to empyema or pneumonia. He admitted that over 80 per cent. were associated with these conditions, and thought that exceptionally the pericarditis occurred by direct extension. He, however, held strongly that the vast majority were independent pericardial infections, which sometimes lasted for some months, and were almost impossible to diagnose. The assumption was made that they were secondary to the lung trouble, but what an assumption that is was clear when it was realised that no one could say when the pericarditis first started. For all we knew, the pericarditis might have arisen simultaneonsly with the pulmonary disease. Further, in about 15 per cent. of cases suppurative meningitis occurred, and in about 10 per cent. suppurative peritonitis. Suppurative meningitis assuredly did not arise by direct extension from the lungs or pleuræ. Tuberculous pericarditis was of two classes: in one there was a copious effusion; in the other general adhesion, multiple serositis, and death from tuberculous meningitis. These were rare cases, and so it came about that an effusion in childhood, causing by its bulk mechanical difficulty, was quite exceptional. Turning to the second point, the consideration of an effusion as a noxious fluid, he did not think that the bacterial origin of acute rheumatism justified at present the treatment of this form of pericarditis by drainage. With pneumococcal pericarditis it was a different problem, but the outlook for surgery here was but gloomy, regarding the usual tender age of the patient and the many complications. Looking to the future, he sought hope in an advance in serum-therapy. Exceptional cases of tuberculous pericarditis with effusion were more hopeful. Lastly, he felt that this discussion would not be complete unless some allusion was made to the experimental study of heart disease. Was it not a great step forward in the precision of our knowledge that from the most common cause of heart disease it was possible to isolate a micrococcus which would reproduce pericarditis, with effusion, fatal dilatation without pericarditis, simple endocarditis, malignant endocarditis, and transitional phases of endocarditis? Did not this settle once and for all the fate of the old repeated statement that pericarditis produced dilatation by spread of the inflammation into the heart wall? How could this be when fatal dilatation might result without pericarditis? No doubt there were especially gross changes immediately under an inflamed pericardium because a vast number of blood capillaries lay in the deep layer of the visceral pericardium and the infection located itself more intensely in that position, but the dilatation was not dependent upon this but upon the general myocardial damage.

Dr. **ALEXANDER MORISON** said that an analysis of 44 cases of acute pericarditis and adherent pericardium showed that the 12 cases which presented no concurrent endocarditic lesion were cases in which the inflammatory process had spread to the pericardium from the neighbourhood and were the result of tuberculosis, pneumonia, and empyema. He thought that the chief point of clinical interest lay in the diagnosis of cardiac dilatation from pericardial effusion. He agreed with Dr. West that the extension of the percussion dulness of the heart beyond the apex beat was a valuable indication of the presence of fluid in the pericardial sac, although the fluctuations in percussion dulness at the left cardiac base are of much value, as pointed out by the late Dr. Octavius Sturges. He showed cardiograms from a case of præcordial thoracostomy in which pericardial effusion occurred, and which at its deepest point altered the character of the cardiogram by registering a number of subsidiary vibrations which were absent where the fluid was shallower. Air likewise transmitted the cardiac pulsations across the pleural cavity in a case which he related, and he compared the influence of the air-medium of transmission to that of the fluid in the pericardial sac of which he had spoken. The registration and study of the cardiogram he therefore considered important as a diagnostic method in this connexion. Referring to treatment, he deprecated therapeutic activity in non-purulent cases when the collection of fluid was limited, but in the event of pericardial exploration being indicated he preferred the removal of a rib cartilage and cautious incision to puncture with a sharp needle. He related a case in which such an operation revealed an adherent pericardium and dilated heart, the examination of which by puncture would probably have been disastrous.

Dr. C. R. **BOX** and Dr. G. G. **BUTLER** communicated some remarks on pericarditis with effusion, based on cases collected from the records of St. Thomas's Hospital, which we shall publish in a future issue.

Dr. **SAMUEL WEST** said that the views expressed in regard to X ray diagnosis of pericarditis interested him because he had himself drawn attention to the fact of the absence of pulsation.

SECTION FOR STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.

A MEETING of this section was held on Feb. 25th, Dr. E. **CAUTLEY** being in the chair.

Mr. S. **MAYNARD SMITH** showed a case of Congenital Œdema of the Leg. There was well-marked œdematous swelling of the right foot and of the leg on its front and outer aspects. The leg was half an inch longer than the left. No history of any similar condition in the family was obtainable. The swelling was noticed at birth.—The case was discussed by Dr. W. **ESSEX WYNTER**, Dr. E. I. **SPRIGGS**, Dr. F. **PARKES WEBER**, and Dr. G. **PERNET**.

Dr. J. **WALTER CARR** exhibited a specimen of the Urinary Organs of a boy who died apparently from uræmia, diphtheritic membrane being found in the trachea after death. Both kidneys were shrunken. The ureters and bladder were considerably dilated, the condition suggesting the existence of some obstruction to the outflow of urine, but none could be found. The boy died after a short illness with symptoms of uræmia. At the necropsy, in addition to the changes already described, the lower end of the trachea was found covered with diphtheritic membrane, in which the diphtheria bacillus was isolated.

Dr. T. R. C. **WHIPHAM** showed a case of Myelogenous Leukæmia in an infant aged 18 months. The child was dark-skinned and flat-nosed, with a widely open anterior fontanelle. The lymphatic glands in the neck, axillæ, and groins were palpable and somewhat hard. The abdomen was enlarged, and the spleen extended to 4½ inches below the umbilical level. The blood count showed over 20 per cent. of myelocytes. On admission there was a large subcutaneous hæmorrhage on the extensor surface of the right arm and a similar patch on the right shin. Further blood counts showed that the number of leucocytes was increasing.—The case was discussed by Dr. **FORSYTH** and Dr. **CAUTLEY**.

Dr. D. Forsyth showed a case of Non-cretinous Mental Deficiency with Goitre. The patient, a boy aged 5½ years, was of normal height and weight, and had suffered from fits since the age of 2 years. He was restless, talkative, and decidedly odd. His expression was vacant. His forehead was narrow and asymmetrical. His eyes had marked epicanthic folds. He showed a moderate non-cystic enlargement of the whole of the thyroid gland.

Dr. Essex Wynter showed the specimens from a case of Chloroma shown at a previous meeting. The child died in February from asthenia. The specimens showed diffuse chloromatous growth transforming all the red marrow and being conspicuous in the flat bones and ends of the long bones. There were deposits also beneath the periosteum. Glands in the iliac, vertebral, and cervical regions were diffusely affected and the spleen was tinted a similar colour. There were no distinct secondary growths. A colour photograph was exhibited.

Mr. Hugh Lett showed a case of Cyst of the Humerus which had been successfully operated on. The patient, a boy aged 13 years, was knocked down in an accident last August. On examination the upper end of the humerus was much thickened for about two inches below the head of the bone. A fracture was discovered a short distance below the surgical neck. A skiagram showed expansion and rarefaction of the upper three inches of the diaphysis of the humerus. Two years previously a diagnosis had been made of endosteal sarcoma and amputation was advised but refused. Now operation was accepted. The bone was opened and a thin mucoid fluid escaped. The affected part of the diaphysis was removed, leaving an interval of three inches between the epiphysis and the healthy part of the shaft. The point of an ebony rod was inserted into the epiphysis and the blunt end into the medullary cavity of the shaft. In this way the epiphysis was firmly connected with the shaft. The periosteum was sutured. At the present time movement of the right upper extremity was perfect and the muscles were rapidly increasing in size. The new bone was firm and regular. On microscopical examination the condition appeared to be one of cystic fibroma.—The case was discussed by Mr. Lockhart Mummery.

Mr. J. P. Lockhart Mummery showed a case of Congenital Absence of the Left Femur in a male child aged 2 months.

Dr. J. Porter Parkinson showed a specimen of Hypertrophic Stenosis of the Pylorus from a female infant who died when aged 5 weeks.—Dr. Cautley discussed the case, and Mr. Lockhart Mummery said that these cases must be operated upon at the earliest opportunity if there was to be any chance of saving the child's life; delay was fatal.

Dr. E. I. Spriggs showed a case of Congenital Thoracic Deformity in a boy aged 11 years. The sterno-costal part of the pectoralis major and the pectoralis minor muscles were absent on the left side. The nipple was normal in appearance, but higher and nearer the middle line than on the right. Photographs were shown on the screen of a number of thoracic deformities of this nature. In many of these cases the costal cartilages and the anterior ends of the ribs were wanting in the mammary region, only a thin layer of skin and subcutaneous tissue protecting the lung. This condition has been ascribed to pressure of the upper limb of the affected side upon the thorax in utero.

MEDICAL SOCIETY OF LONDON.

The Cerebellum and its Affections.

A meeting of this society was held on March 7th, Dr. Samuel West being in the chair.

Dr. J. S. Risien Russell delivered the third of the 1910 Lettsomian lectures on the Cerebellum and its Affections. The infrequency of vascular lesions of the cerebellum as contrasted with the cerebrum was referred to, and reasons for this, including the sources of arterial supply of the organ and the free anastomosis which obtains in connexion with the cerebellar arteries, were discussed. The infrequency of cases in which the uncomplicated cerebellar syndrome is produced by hæmorrhage was commented on, and it was shown that when hæmorrhage is met with in the cerebellum it commonly has extended into the pons, or has been derived from this source. Occipital headache and giddiness are among the premonitions to be expected, while according to Nothnagel hæmorrhage in this situation may be suspected if there be repeated vomiting at the beginning of the attack without the occurrence of any obvious motor paralysis. Cases illustrative of hæmorrhage into the lateral lobes and middle portion of the cerebellum, and others in which the cerebellum and pons were concomitantly involved, were quoted, as were cases in which extravasation of blood in considerable quantity occurred in the organ without producing any characteristic cerebellar symptoms. Thrombotic lesions are usually discovered on necropsy, without having caused any symptoms that could lead to their being suspected during life, but exceptional cases occur in which cerebellar symptoms of a very definite character are determined. A diffuse sclerosis of the organ might also result in consequence of vascular disease, in which case there was a great deal of neuroglial proliferation, with disappearance of the cell elements of the cerebellar cortex, together with atrophic changes in the central nuclei, as well as sclerosis in the white matter and degenerations of the peduncles of the organ. A clinical picture could be thus produced which was similar to that to be expected in a case of progressive degeneration of the cerebellum without vascular disease to account for this. Another disease that might affect the cerebellum was encephalitis, which was especially liable to occur in children, following upon one or other of the acute infective diseases to which they are so liable. A previously healthy child became acutely ataxic after some febrile illness, and improvement gradually occurred until possibly complete recovery resulted. This happy termination of the cases made it impossible to be sure how many of them were due to a true encephalitis as opposed to the action of a toxin on the nerve cells without the production of inflammatory changes. Moreover, the cases that come to necropsy do so usually at such a remote period that it is not easy to be certain that the sclerotic changes that are present have been the outcome of encephalitis. It is accordingly satisfactory to find a few cases in which the patients have died while the acute lesions produced by encephalitis have still existed, as supplied by a case recorded by Nauwerck. Another class of case, which may be the outcome of acute disease earlier in life, is that in which there are evidences of chronic meningitis in addition to atrophy and a general sclerotic condition of the cerebellum, and in which epilepsy and mental enfeeblement may form part of the clinical picture. Progressive ataxia may result from degeneration of the cerebellar cortex, as proved by Gordon Holmes; or in conjunction with atrophic changes in the inferior olives and nuclei of the pons, as established by Thomas and Déjérine, but there is no such affection as that described by Marie as hereditary cerebellar ataxia, for in only one of the cases on which his paper was based had degenerative changes been determined in the cerebellum, all of the others, including the remarkable group of cases described by Sanger-Brown, supplying examples of the production of the cerebellar syndrome by affection of the afferent cerebellar tracts in the spinal cord in a manner somewhat similar to that which obtains in Friedreich's disease, which is the best established example of a cerebellar ataxia, the outcome of degeneration of the cerebellar system in the spinal cord without affection of the cerebellum itself. That progressive degeneration of the cerebellum may date from childhood is established not only by the numerous clinical records of such cases in which the cerebellar symptoms became gradually worse instead of improving in the way that so usually obtains in ataxia in children, but also by the histological changes determined in the cerebellum by Fraser in a case of the kind. Congenital defects of the organ were considered as they fall into one of three groups—those in which the cerebellum as a whole is small, but otherwise normal in structure; others in which the organ is uniformly reduced in size, and in addition presents definite histological changes on microscopical examination; while in the third group are included all sorts of gross defects, amounting, it may be, to what is practically an absence of the organ, so rudimentary is its sole representative. Cases that fall into the first group are of interest for the reason that a congenital defect of the kind has been held responsible for a clinical picture of cerebellar ataxia, such as is to be accounted for by degeneration of the cerebellum alone or in conjunction with the nuclei of the pons and inferior olives, or by degeneration of the cerebellar system of tracts in the cord. That persons affected in this way should reach adult life without revealing any of the clinical abnormalities by which cerebellar defects are recognised is not in the least surprising in the light of what may similarly obtain in cases of gross defects of the organ, and in view of the provision for compensation of cerebellar inadequacy, to which reference was made in a former lecture. What, however, is difficult to accept is that a congenital inadequacy of the cerebellum which has existed from birth should, when adult life is reached, become responsible for a clinical picture in which cerebellar symptoms develop and become progressively worse until they terminate in death, without any evidence of regressive changes in the organ. Nevertheless such is held to be the case, as is illustrated by cases reported by Miura and Nonne respectively. That congenital defects of the cerebellum may, however, occasion disturbance of function without there being gross lesions, in which the whole or part of the organ is absent, is evidenced from what he (Dr. Russell) once determined in a puppy, in which, although no gross macroscopical defect was evident, histological abnormalities, which were regarded as congenital in origin, were nevertheless determined to account for the cerebellar symptoms which existed during life. Southard has met with a somewhat similar condition of things in an imbecile, who was epileptic, which he also regarded as congenital in origin. In the absence of pathological evidence, it is, of course, impossible to say whether cases described as congenital ataxia are to be accounted for by such anomalies, or whether a mere delay of development of the cerebellum without structural changes is responsible for the clinical picture. In such cases cerebellar symptoms occur in infancy, and the patients improve to a variable extent, and thus do not usually afford opportunities of post-mortem examination. In illustration of gross defects of the cerebellum Dr. Shuttleworth's case, described by Dr. Ferrier in his "Functions of the Brain," was quoted as an example of how little clinical evidence there may be of disorder of the cerebellum in the presence of such gross defects as obtained in this case. Other cases have, however, presented very distinct cerebellar symptoms, which have permitted of a correct diagnosis during the life-time of the patient, but even in these they have not been of such severity as might have been expected had we been ignorant of the provision which exists for the compensation of cerebellar defects. A case recorded by Anton was quoted in illustration of this, for although the patient presented disturbances of equilibrium and diminution of vigour of all movements the clinical manifestations were not as pronounced as might have been expected in a case in which a gelatinous membrane covering the fourth ventricle, with a few microscopical remnants of cerebellar tissue at its margin, was the sole representative of the organ. The manner in which cerebellar symptoms may alter the clinical picture of certain general diseases of the nervous system was discussed in conclusion, and cerebral diplegia was referred to as an example in which the alteration of the clinical picture was immaterial, but in which, nevertheless, the contention of Batten and others who hold similar views seemed justified, that cerebellar symptoms in such cases are in reality due to concomitant defects of the cerebellum, and are not to be accounted for by abnormalities of the cerebrum alone. Disseminated sclerosis supplied another example of the kind, in which, owing to the fact that the cerebellum or its peduncles may be involved by some of the sclerotic areas which constitute the morbid picture of the disease, the clinical manifestations may suggest cerebellar affection rather than a cerebro-spinal disease. Errors of diagnosis are comparatively unimportant where degenerative diseases of the cerebellum are being dealt with, but it is otherwise when, as often happens, the affection of the cerebellum is a tumour, for the brilliant achievements of modern surgery make it imperative that errors of diagnosis should, if possible, be avoided in this class of case. The outstanding feature which should guide us in the diagnosis of disseminated sclerosis, as opposed to cerebellar disease, is evidence of affection of the pyramidal system as revealed by spastic paralysis, ankle clonus, absence of the abdominal reflexes, and alteration of the plantar reflex to the extensor type. It is to be admitted, however, that in its early manifestations disseminated sclerosis may affect the cerebellar system to the exclusion of the pyramidal tracts for a time, so that it is fortunate that there are other manifestations that may serve to guide us to a correct diagnosis, of which none is more important than affection of the sphincters, notably that of the bladder, which is liable to occur so early in the course of the disease, and which has no part in the uncomplicated cerebellar syndrome. Subjective and objective defects of cutaneous sensibility must be similarly regarded, while the remissions, followed by relapses, so common in the course of disseminated sclerosis, do not occur in cerebellar affections, although some of the morbid states that affect the organ permit of marked improvement, even, it may be, up to complete cure. Although optic atrophy has formed part of the clinical picture in some patients the subjects of cerebellar disease, this is not the rule except when gross lesions, such as tumours, have occasioned optic neuritis, which has resulted in consecutive atrophy, so that the amblyopic defects of vision, with contraction of the fields and central scotoma, with or without optic atrophy, must be regarded as in favour of disseminated sclerosis. When the possibility of cerebellar tumour is under discussion optic neuritis must be allowed to favour the probability that this, rather than disseminated sclerosis, accounts for the clinical manifestations in general, for although optic neuritis has been determined in disseminated sclerosis by competent observers, it is so uncommon that in a large experience he (Dr. Russell) has not yet met with a case. Headache of the severe and paroxysmal type, met with in cerebellar tumours, is not likely to occur in disseminated sclerosis, and the same may be said of vomiting. But it is otherwise when vertigo is under consideration, for this symptom may be most pronounced and distressing.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Medicine.

Types of Imbecility.—Pseudo-Hypertrophic Muscular Paralysis.—Sciatica.—Leukæmia.

A meeting of this section was held on Feb. 18th, Dr. James Little being in the chair.

Dr. J. H. P. Boyd Barrett exhibited a case of Acquired Imbecility. The patient, who was a boy aged 5½ years, was unable to speak articulately. He could do little more than "grunt." He understood everything that was said to him, and was somewhat obedient. He did not walk until he was 3 years old. He was subject to fits of bad temper, in which he would throw china cups over the garden wall. His face was marked by congenital syphilis, the bridge of the nose was sunken, and his mouth was scarred. His mother had several miscarriages. He was the only child that lived. Dr. Barrett said that syphilis was the most common cause of secondary or acquired imbecility. It was also the cause in childhood of that fatal mental degeneration, analogous to general paralysis of the insane in adults, called "juvenile general paralysis." The latter was a progressive and fatal disease. but this boy, on the contrary, enjoyed good health.

Dr. Barrett also exhibited a case of the Genetous Type of Imbecility with Single Ptosis. The patient was a girl aged 10 years. She was quiet and diffident. She had a pale, unhealthy colour, her left eyelid drooped, and she showed that type of face and chest which was associated with adenoids. Her expression was vacant. Her speech was jerky and indistinct. The family history on the mother's side was extremely good. The father did not drink to excess. Both parents and the other children in the family were healthy. However, all the near relations on the father's side drank excessively. The child's paternal grandmother was said to have "died of drink." The stigmata of degeneration present in this case were vacant expression, gothic palate, winged ears with deficient helix, nocturnal enuresis to age of 9 years, fæcal incontinence to age of 7 years, slowness in learning to walk and talk, rhythmic movements of hands, and incapacity for being taught to read, write, or sew. She was not likely either to live long or to be able to earn her livelihood.

Dr. Barrett also exhibited a case of Mongolism in a boy aged 5 years. With the possible exception of umbilical hernia and congenital heart disease he had all the chief signs and symptoms of mongolism. He was restless in manner and chattered unintelligibly but ceaselessly. The complexion was fair. The eyes were oriental and marked epicanthic folds were evident. He used to dribble and protrude the tongue, but in these respects he had improved somewhat. He had a curious incurvation of the little finger. The head was brachycephalic. Although he was 5 years old he could not walk. He was late in sitting up, late in teething, and late in observing.—Dr. WILLIAM R. DAWSON said that it was now held that mongolian idiocy was due to malnutrition of the fœtus in utero, occurring, as it did, when a child was born at the end of a long family. It had been pointed out that the little finger and thumb in such cases were always abnormally short. There was also a slightly spotted condition of the child's iris.

Dr. A. DEMPSEY showed two cases of Pseudo-hypertrophic Muscular Paralysis occurring in boys, brothers, aged 11 and 12 years. There was nothing peculiar about the family history except that an uncle had had some nervous disease. When the elder boy was 5 or 6 years of age his mother noticed that he commenced to trip and had difficulty in going upstairs. In a couple of years he had difficulty in walking, and now, about six years after the onset, he had to be carried. The younger boy was in good health up to a couple of years ago, when he commenced to suffer in the same way. He now showed the combination of atrophy and hypertrophy, which was characteristic of the disease.

Dr. M. ORR read a paper on the Physico-therapy of Sciatica. He divided cases for treatment into two classes —acute and chronic—and made no distinction as to their pathology. For the former class he relied chiefly on hot applications and very gentle massage, combined, of course, with absolute rest in bed. Blistering and acupuncture he never employed. For chronic cases he used massage, hot and cold douches alternately applied, and active and passive exercising of the affected limb. All treatment was directed to an endeavour to increase the rapidity of the circulation through the affected part.—Dr. J. CRAIG said that he was accustomed to deal with neuralgic cases as distinct from the neuritic. Neuralgia of the sciatic nerve generally yielded to anti-neuralgic treatment. The neuritic cases, however, gave a great deal of trouble. Nerve-stretching was, he believed, associated with considerable danger. A patient under his care had had a nerve stretched during his absence, and died subsequently from myelitis. He believed that the hypodermic injection of morphia was one of the few things that gave rest when pain was severe.

Dr. R. TRAVERS SMITH and Dr. H. C. EARL communicated a paper on Acute Leukæmia. A girl, aged 20 years, was admitted to the Whitworth Hospital, Dublin, under the care of Dr. Travers Smith on Nov. 2nd, 1909. She had only complained of ill-health for a fortnight previously. It was found that the glands in the right side of the neck and left axilla were enlarged, and that she was very anæmic. A blood examination showed signs of so-called acute lymphatic leukæmia. She only lived for 20 days after admission. During that time the spleen enlarged rapidly, as did the glands in the neck. The temperature varied between 101° and 103° F. Almost the whole interior of the mouth became gangrenous. Moderate diarrhœa persisted. Four days before death the temperature fell by crisis. The blood when first examined contained 60 per cent. of hæmoglobin, 3,024,000 red cells per cubic millimetre, and 192,000 white cells per cubic millimetre. Of the white cells about 8 per cent. were small lymphocytes and 88·7 per cent. were transitional cells. In the course of six days the red cells had diminished to 1,776,000 per cubic millimetre and the hæmoglobin to 30 per cent. The white cells remained about the same as at the first examination till death occurred, but the lymphocytes increased to 22 per cent. of the total white cells. At the post-mortem examination the spleen was found to be very much enlarged, weighing 1650 grammes; the marrow of the shaft of the femur was reddish-grey and gelatinous in appearance; the glands were not enlarged, except those in the anterior mediastinum and left axilla, which were tuberculous. The marrow of the femur contained mainly cells with a strong resemblance to the transitional cells found in the blood, and a few cells containing neutrophile granules. The lymphatic glands contained besides lymphocytes a good many transitional cells. The liver was enlarged but not increased in weight. On section a frothy fluid escaped, and an anaerobic organism with the characters of bacillus phlegmonis emphysematosæ was isolated from the organ.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 4th, Mr. C. Gordon Watson, the President, being in the chair.—Dr. Leonard Williams read a paper on Pituitary Extract and Some of its Effects. He said that it has been demonstrated that the pituitary gland has an internal secretion which is essential to the economy. Perhaps the most interesting function of the pituitary secretion is that which it exercises in the direction of causing the contraction of involuntary or unstriped muscular fibre. If we consider the very important part which this form of muscle plays in the body, it is easy to realise, not only the far-reaching physiological effects of the pituitary secretion, but also the application of which its artificial administration in therapeutics is capable. The pituitary secretion stimulates the contractile power of the tunica media of the blood-vessels and of the heart muscle, hence the obvious clinical result will be a very decided rise of blood pressure. Clinically, of all the acute affections in which pituitary extract has been tried enteric fever is the one in which it has shown the best results, for the poison of typhoid is essentially vaso-dilative in its action. Pulmonary tuberculosis is of all others the disease in which a low blood pressure is a marked and prominent symptom. It attends and goes far to explain the languor and debility, the quick pulse, the restlessness, and the insomnia. Pituitary extract increases the physical energy, restores the appetite, calms the restlessness, and promotes sleep, at the same time and in the same degree as it raises the blood pressure and reduces the pulse-rate. In post-influenzal cardiac debility pituitary extract restores tone to the cardio-vascular system, and inasmuch as at the same time it induces sleep it is doubly valuable. But the power of pituitary extract to cause contraction of the unstriped muscular tissue in the cardio-vascular system finds its most useful therapeutic application in surgical shock, for it will contract the vessels and keep them contracted for a period of about 12 hours. Blair Bell from experimental evidence concluded that post-operative intestinal paresis would be favourably influenced by pituitary extract, and he induced his surgical colleagues to give the remedy a trial, with the result that his anticipations were fully realised. The special vaso-constrictive effect of pituitary extract is most conspicuously displayed in its relation to the thyroid. The thyroid stimulates secretion from the nasal mucosa: the pituitary brings about a vaso-constriction of this mucosa which is just as pronounced and much more durable than the effects produced by adrenalin. The thyroid induces mental alertness amounting in large doses to restlessness and excitement; the pituitary produces somnolence, and is, with certain qualifications, one of the best remedies for sleeplessness at our command. The thyroid fixes the salts of calcium in the body; the pituitary aids and abets the capricious ovary in discharging these salts as quickly as possible. It is, however, by reference to Graves's disease that the antagonism between the two becomes most apparent Pituitary extract produces a very noticeable effect upon some of the most troublesome symptoms of the disease. It calms the excitement and promotes sleep; it slows the heart and raises the blood pressure; it checks the perspirations and prevents the sudden flushes of heat; it stops emaciation; and, finally, it modifies the tremors to the point in slight cases of completely abolishing them. Again, in paralysis agitans the low blood pressure, insomnia, and perspiration, together with the intolerance to heat, are rapidly and decidedly improved by pituitary extract. The stimulating effect of pituitary extract upon unstriped muscle is nowhere more striking than in its action upon the muscular tissue of the uterus. Blair Bell, after a Cæsarean section, gave a single injection of pituitary extract, and immediately he saw the enlarged, congested, and distorted organ become, as he expresses it, "a blanched ball." The dose of the extract is usually quoted as from two to five grains, and the best method of administration is by subcutaneous injection.

NORTHERN ASSOCIATION OF MEDICAL WOMEN.—A meeting of this association was held in the Medical Institution, Liverpool, on Feb. 19th. Miss Mary Ivens, M.S., being in the chair.—Dr. Margaret M. Smith gave an account of the work done by the Manchester branch of the association to procure the admission of women to the resident posts at the Manchester Royal Infirmary.—Dr. Margaret B. Dobson, inspector of school children under the Bradford education committee, read a paper on the Medical Inspection of

School Children. She described the method by which the children are examined. They are afterwards divided into two classes: (1) Normal; and (2) abnormal, including all who require either treatment or watching. In the latter class the parents, unless present at the examination, are notified of the defect. Two months later the children are seen again. Dr. Dobson disapproves of the examination of children at the age of 13 years, because they often leave before reaching that age. She would prefer examination at the age of 12, a further advantage being that children not fitted for "half timers" could be weeded out. Dr. Dobson described the treatment of the different diseases at the school clinic in Bradford. All children suffering from contagious diseases, pediculosis, offensive otorrhœa, &c., are excluded from school by the medical officer and are not re-admitted without a medical certificate. Dr. Dobson strongly advocated treatment in a school clinic on the following grounds: (*a*) Insufficiency of former methods. The Bradford children have for nearly 15 years been inspected and the parents notified of defects, but it was found that only 33 per cent. had received adequate treatment. (*b*) Government grant is influenced; attendance at the school clinic counts as a school attendance. (*c*) The cases are cured in the shortest possible time, attendance at the clinic being enforced by the attendance officer. (*d*) Daily treatment can be given. Special departments of many hospitals are only opened once or twice a week. The daily cleansing of such conditions as septic ears renders them no longer a source of danger to the health of the rest of the class. (*e*) By increasing the interest of the work a better class of officer will be attracted to it. Finally, Dr. Dobson proceeded to describe the open-air school. The stay of the child is prolonged until recovery, as shown by blood count or other proof, has taken place.—Dr. Frances M. Harper advocated the use of trained nurses to replace the attendance officer in the absence of a school clinic. She considered that too much stress was laid on schedules. More freedom should be given. Great care should be taken to secure the coöperation of the children themselves. The teaching of hygiene was of great importance. The syllabus was too abstract and theoretical. Instruction in cleanliness and decency should be insisted upon. The children should be instructed in the use of the tooth-brush and handkerchief, and their hair should be inspected adequately.—Dr. Katharine R. Drinkwater described her methods of examining the children. Upon re-examining the children she found that only 33 per cent. had received satisfactory treatment. —Dr. Lillie Johnson, Dr. Catherine Chisholm, and Dr. Mary Davies also discussed the paper.

Reviews and Notices of Books.

The Hygiene of School Life. By RALPH H. CROWLEY, M.D. Lond., M.R.C.P. Lond. London: Methuen and Co. 1910. Pp. 403. Price 3*s.* 6*d.* net.

THIS is, on the whole, an excellent book, and it appears at the right moment. Dr. Crowley has had exceptional opportunities of studying the medical supervision of elementary schools, as he acted for some time as medical superintendent to the Bradford Education Committee; and Bradford (as in many other matters of hygiene) has been in front in the medical supervision of its schools. The volume is strictly limited to the consideration of elementary day schools; boarding schools of any class whatever do not come within its range.

The author has recently received an appointment in the medical department of the Board of Education, but he is careful to point out that the views and opinions which he has expressed are purely personal and carry no official sanction or weight. In fact, it appears that had it been possible he would have withdrawn his book from the press; but in our view it is fortunate that this course was not pursued. The views of Dr. Crowley as to the range and executive methods necessary in the application of treatment for ailing school children are very advanced. Everything is to be provided at the public expense. For medical treatment the special "school clinic" is the only effective machinery. The provision of school meals occupies an important space, and the chapter on this subject is full of well-arranged details and carefully considered general economics. There is a short but excellent account of school baths and the advantages of the system of compulsory school bathing, carried out under proper supervision, and with inspection of delicate or ailing children. This section includes a brief *résumé* of the report on the arrangements found in various German towns, presented by the assistant education adviser, Dr. F. Rose, and Dr. J. Kerr, medical officer (Education) London County Council, to the Education Committee of the London County Council, 1908. The new developments of elementary education involve those who would consider them closely in difficult problems of sociology. Individualist thinkers may have doubts, and grave doubts, as to the ultimate wisdom of feeding and clothing (for Dr. Crowley claims clothing also) all school children at the expense of the community, but good arrangements for bathing are cheap on a large scale, impossible in the homes of the poor, and of enormous benefit to the rising generation who may enjoy them.

An interesting section is that on the Open-air Recovery School; this system, first inaugurated at Charlottenburg in 1904, provides a daily refuge for convalescent, anæmic, or delicate children who are incapable of returning to ordinary school life, and whose only alternative is to drift from bad to worse in the possibly insanitary and certainly unsuitable surroundings of a close and crowded town. We recently commented in a leading article on a report to the Sheffield education authority which forms an excellent rider to Dr. Crowley's account of this system.

There is no part of the volume of higher interest to the general medical reader than that dealing with infectious diseases. In this chapter the difficult and constantly recurring question of the closure of schools is most judiciously handled, and proper attention is given to the dangers from infective disease involved when a very early age of first attendance at infant schools is encouraged. A proper regard is shown for that most serious of school epidemics, measles, but the author does not attach sufficient importance to the epidemic intensity or variations in virulence of this disease. Probably there is no epidemic prevalent in Great Britain, except small-pox, which presents such differences in violence, and the epidemic value should be recognised early, both by medical officers and by school authorities. In respect of vaccination Dr. Crowley comes to a definite and deliberate conclusion as far as the hygiene of school life is concerned. He says: "Whatever may be the *pros* and *cons* of vaccination, there is no disputing the fact that a school composed of children, all well vaccinated, need be in no fear of trouble from small-pox." Such a pronouncement will be welcomed by all sensible persons. By the way, we must protest against the use of the word "schoolmen" on p. 261 (as meaning officials engaged in schools), seeing that the word has the sanctity of a special use.

The final sermon on the "Parent and the State" will probably not appeal to the poorer members of a professional class who are overwhelmed with increasing taxation and nervous at the prospect of the institution of a State service wherein their own work will be exploited. To them the theory advanced by many writers even in our own ranks may seem paradoxical—that the way to teach parents their duty to their children is to relieve them of all those duties except the one of driving them each morning to school, there to be taught, cleaned, clothed, fed, disciplined, and doctored. We do not say that this is exactly Dr. Crowley's creed, but we think that the justification for such views could be found in his pages.

Lehrbuch der Nervenkrankheiten (*Text-book of Nervous Diseases*). Edited by Dr. HANS CURSCHMANN of Mainz. With 289 illustrations. Berlin: Julius Springer. 1909. Pp. 977. Price M.24.

THE impetus given to the study of diseases of the nervous system by the advances made in the investigation of the physiology and pathology of nerve structures has made it a matter of great difficulty to deal with them adequately within the compass of a general text-book of medicine. Neurology has become an important specialty with a very extensive literature. An up-to-date text-book is therefore highly essential in order to afford the general practitioner and the general physician an opportunity of studying the present state of knowledge in regard to any given disease of the nervous system with which he may have to deal without having to delve into special monographs. The book before us gives a fairly full study of diseases of the nervous system by a number of German physicians of distinction and presents the German point of view. Although numerous authors are quoted no references are given, and the work of English neurologists receives insufficient recognition.

The book is divided into 12 sections. The first deals with the general diagnosis of nervous diseases and is written by Dr. S. Schoenborn of Heidelberg. Much stress is laid upon the value of a careful history in case taking, as being of special value in regard to cases of nervous disease. The various symptoms and the manner of investigating them are categorically considered. The second section is devoted to diseases of the peripheral nerves and is contributed by Dr. H. Steinert of Leipsic. They are divided into two groups—the destructive and the neuralgic. The general etiology and pathological anatomy of the former are first considered, and then the clinical characters of paralysis of the individual cranial and spinal nerves are described in some detail and illustrated by diagrams and by reproductions of photographs. Multiple neuritis and certain special forms of neuritis, such as those due to lead and to the diphtheritic toxin, are also dealt with. In this section a brief account is appended of Landry's paralysis. The various neuralgias and their treatment are next described.

Diseases of the spinal cord form the subject of the third section, which begins with a description of the normal and pathological physiology of the cord by Dr. Max Rothmann of Berlin, who gives some interesting and useful tables and diagrams. Dr. Schoenborn begins the study of the system lesions with descriptions of tabes dorsalis and Friedreich's disease, both of which are admirable. The pathogenesis of the former disease is critically discussed. Dr. Schoenborn arrives at the conclusion that the radicular meningitis theory of Nageotte is that which at present is the most plausible. The remaining system lesions are carefully described by Professor Fr. Jamin of Erlangen. The accounts of disseminated sclerosis, syringomyelia, and hæmatomyelia are given by Professor H. Schlesinger of Vienna, who, as might be expected, gives admirable studies of these conditions. Traumatic affections of the cord, the various compression paraplegias (including those due to tumours of the cord and its membranes), syphilitic affections of the cord, and myelitis are all discussed by Professor Finkelnburg of Bonn in a clear and practical manner. An interesting study of the affections of the conus terminalis and the cauda equina, well illustrated by diagrams indicating the various forms of anæsthesia occurring in these conditions, is contributed by Dr. L. R. Müller of Augsburg.

The fourth section consists of an interesting and well-arranged study of the myopathies, including also myasthenia pseudoparalytica, a myotonia congenita, and Thomsen's disease. The fifth section comprises a review of the normal and pathological physiology of the brain, by Professor Hugo Liepmann of Berlin, and includes a full and detailed consideration of the various forms of aphasia. In the same section are included the descriptions of the various forms of cerebro-spinal meningitis by Professor Hugo Starck of Carlsruhe; a full study of cerebral tumour, cerebral abscess, and non-suppurative encephalitis, by Professor Max Lewandowsky of Berlin; of cerebral vascular lesions, by Professor C. Hirsch of Göttingen; and of general paralysis of the insane and of epilepsy, by Professor R. Gaupp of Tübingen.

The sixth section is contributed by Professor J. Ibrahim of Munich, and contains a careful presentation of the organic nervous diseases of childhood. The seventh section, by Dr. Fr. Pineles of Vienna, under the heading of Hyperkinetic Affections, contains descriptions of chorea, tetany, paralysis agitans, tremor, occupation neuroses, the tics and spasms, and paramyoclonus. The eighth section, by Professor Aschaffenburg of Cologne, is devoted to the psychasthenic conditions; the ninth, by Dr. Müller of Augsburg, to the affections of the sympathetic nervous system; the tenth, by Dr. Hans Curschmann, to vasomotor and trophic diseases; and the eleventh to toxic conditions of the nervous system. This is contributed by Dr. F. Quensel of Leipsic, and includes descriptions of poisoning by various organic and metallic poisons. The last section, by Professor Fedor Krause of Berlin, is devoted to the operative treatment of nerve diseases and contains the data for cranio-cerebral topography, with accounts of the various operative procedures available for lesions of the brain and its membranes, the cord, and the nerves.

We can commend this volume as a useful work of reference, practical and authoritative in character. The printing, illustrations, and binding are also of a better quality than is usual in foreign text-books.

Diseases of the Stomach. By S. H. HABERSHON, M.A., M.D. Cantab., F.R.C.P. Lond. London: Cassell and Co., Limited. 1909. Pp. 565. Price 9*s.* net.

THIS work is intended to be a manual for practitioners and students. It commences with a chapter on the anatomy of the stomach, which is well written and gives briefly all the important anatomical information which it is necessary for the medical man to know before he can properly appreciate the symptoms and complications of the various gastric diseases. There are some excellent diagrams and plates illustrating in a very clear manner the different anatomical points. The chapter on the physiology of digestion contains a good account of the physiology of the digestive secretions, and the recent work on this important subject is fully discussed. In this chapter there is no reference to the important part played by the motor functions of the stomach in aiding digestion, and nowhere in the book is there any reference to the recent important investigations which have been made by means of X ray examinations after a meal containing harmless bismuth salts. Since the size of the stomach and its motor functions in various pathological conditions can be so clearly demonstrated by these methods, it is to be hoped that reference will be made to them in a future edition. There are excellent chapters on diets, and very useful information is given to the medical practitioner on the dietetic treatment of various gastric conditions. The author shows an intimate acquaintance with and experience of the various articles of diet which have to be resorted to in the treatment of many cases of gastric disorders, and a very useful summary is given of the composition and uses of the more important commercial preparations which are used for dietetic treatment.

The chapter on the examination of the gastric contents needs considerable revision in the chemical portion. The description of Töpfer's test is inaccurate ; also the description of the application of Günzberg's reagent in testing for free hydrochloric acid is very imperfect. There is no description of a good clinical method for estimating free and combined hydrochloric acid in the gastric contents. Several methods are given, but the author does not state on which he advises reliance to be placed. It is to be hoped that in a future edition of the work the modified Volhard process for estimating free and combined hydrochloric acid will be included.

The symptoms and treatment of the various diseases of the stomach are well described, and the author gives his readers the benefit of his great clinical experience. The subject matter of this portion of the work is illustrated by several excellent plates. In the diagnosis of diseases of the stomach it seems to us that the author does not attach sufficient importance to the routine examination of the gastric contents after a test meal. There is scarcely any mention of this method of examination under the diagnosis of gastric ulcer. In the diagnosis of gastric cancer the description of the chemical composition of the gastric contents is imperfect. There is no mention of the value of quantitative estimations of the free and combined hydrochloric acid, and the marked diminution of the ferment activity is not laid stress upon.

The book will certainly be of value to the practitioner and student, and there is much useful and valuable information in it. We have indicated the places where it seems to us improvement can be made in the expectation that in a late edition certain revisions will be made.

Serums, Vaccines, and Toxins in Treatment and Diagnosis. By WM. CECIL BOSANQUET, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician to the Charing Cross Hospital ; and JOHN W. H. EYRE, M.D., M.S. Dunelm, F.R.S. Ed., Bacteriologist to Guy's Hospital. Illustrated. Second edition, thoroughly revised. London : Cassell and Co. 1909. Pp. 362. Price 7*s.* 6*d.* net.

THE original edition of this valuable little volume appeared in 1904, and in the preparation of that edition Dr. Eyre had a considerable part in selection and revision of material, though his name did not appear on the title-page. In the issue of this edition Dr. Bosanquet has wisely associated Dr. Eyre with himself as collaborator, for the subject is now so vast, and shifts so constantly in theories and details, that its complete survey is almost beyond the accurate range of a single mind.

The study of immunity is complex, and its study has been rendered unnecessarily difficult by the adoption of a whole code of new technical phraseology. The introduction of such new terms has probably been favoured by the diverse nationalities of those working in this new field and the diverse languages in which they have recorded their researches ; but the result has not tended in the direction of a simple exposition of facts and theories to minds who come fresh to the subject. But here lies the value of Dr. Bosanquet's book : no one can fail to follow his explanation of even the more complicated aspects of immunity. His style of writing is so simple and lucid that he is not even hampered by the strait limitations of space which his publishers have probably imposed. To the many who seek a readable and trustworthy guide to an important subject on which they may have little knowledge this text-book may be unhesitatingly commended.

The bulk of the text has not been much altered in the new edition, but it has been carefully revised and brought up to date. The most important addition is a survey of the subject of opsonins, which is complete, careful, and judicial in estimation. The authors maintain the view that the existence of the "stimulins" of Metchnikoff and Leishman is not proven, and that increase in opsonic value is due to diminution of bacterial resistance. In the consideration of the vexed question of phagocytosis in the absence of serum they adopt the opinion, which is probably a highly judicious compromise, that phagocytosis does occur in the absence of serum but probably only to a very slight extent. In order to find room for this and much other new matter it has been necessary to cast aside a good deal of introductory matter which Dr. Bosanquet handled extremely well in his first edition ; but this matter was largely historical, and should be fairly familiar to every well-informed student of modern pathology. But we regret that it has been necessary to omit certain excellent material. The life-history of the tetanus bacillus is of the highest importance in a proper conception of the disease, and the sketch given in the earlier edition was too good to have been discarded. But as one of the most subtle arts in other games is the discard, the editors have shown great tact in unloading their hand, if so flippant a simile may be allowed. They have shed all sorts of theories and a number of "submicroscopic discoveries" which have not acquired proper confirmation, and the selection which they have made of material for the groundwork of future knowledge is trustworthy and judicious.

Scientific and Biological Researches in the North Atlantic. By R. NORRIS WOLFENDEN, M.D. Cantab. London : Rebman, Limited. 1909. Pp. 234. Illustrated. Price 10*s.* 6*d.* net.

FOR a good sailor there are few better ways of taking a holiday than in a sailing boat. The size and rig matter little. There are the charm and constant novelty of the sea, whether it be fine and calm or needs all one's seamanship to keep afloat at all. Nearly everything, too, has to be learnt about the ocean, its currents, its temperature, its inhabitants, and yet for lack of scientific training the yachtsman very rarely makes use of his opportunities for adding to the modicum of knowledge which we already possess. Much credit is due to Dr. Norris Wolfenden, who has spent some part of his leisure in accumulating a vast number of observations which are not only useful now but will prove more useful in the future when they have been correlated with the work of other observers. The book contains the results of cruises made in the *Walwin* and the *Silver Belle*, the one a small cutter of less than 40 tons, the other a ketch yacht of 130 tons. The earlier trips were made round the Shetland Islands in the Faeroe Channel in 1899-1902 ; the later ones in the neighbourhood of Gibraltar, whilst in 1907 Dr. Wolfenden cruised to Norway by way of Shetland. The first sets of observations were made independently of any central organisation, but when the North Sea Fisheries Investigation Committee began systematic work in 1902 Dr. Wolfenden endeavoured to connect the observations of the Scottish, German, and Scandinavian expeditions. His results show how much can be done by a private individual and at a comparatively small cost. He was fortunate in obtaining the services of a first-rate skipper and general manager in the person of Captain Buchan Henry of Shetland, and he estimates the expenses of a three months' voyage to be about £300. The secret of his success is partly revealed by the statement that "I was at some pains to obtain an equipment of the most perfect and modern description," but mainly to his own energy and enthusiasm.

The observations were directed towards the movements of the oceanic currents, the variations in the temperature of the ocean at varying depths, the salinity of the ocean, and variations in its gaseous contents as measured by the oxygen and carbon dioxide. The study of the fauna was directed chiefly to the plankton—the multitudinous floating life that is variously associated with particular waters, and that serves as food for a variety of fish. The observations on the movement of the ocean currents showed that not only in enclosed areas like the North Sea, where varying land influences are important, but in the open ocean itself the currents are constantly changing in direction and speed of movement, so that the same points of the ocean are occupied at different times by water derived from widely different sources. The movement varies greatly from season to season and from year to year. The observations made upon the oceanic flow through the Straits of Gibraltar were especially interesting. Dr. Wolfenden says that the effective width of the Strait is about 7½ miles and its depth about 200 fathoms. Two currents flow in opposite directions through it, the one inwards to the Mediterranean, the other outwards into the Atlantic. The plane of separation between the inflowing and outflowing waters lies at a depth of between 100 and 150 fathoms. The outflowing stream is the lower and is some 70 fathoms in depth. It first flows over the ridge in the floor of the Strait, and then, being of a higher salinity, it falls down, mixing rapidly with the fresher waters of the ocean until it reaches a depth of about 600 fathoms, after which the horizontal movement becomes more extensive than the vertical. At the time the observations were made it would seem that the influence of the Mediterranean water was inappreciable in the Atlantic west of about longitude 22° W. and below 1300 fathoms. Northwards the effect was still apparent at some distance above the latitude of Lisbon, and at the station where this observation was made there was a remarkable stratum of water salter and heavier than the water above and below it, lying at a depth of between 1000 and 1200 fathoms. The hydrographical results were worked out by Dr. H. N. Dickson at Oxford and his article is reprinted from the *Geographical Journal* for April, 1903, whilst the water analyses were made by Professor O. Peterssen at Stockholm. The biological observations were described by Mr. Holt and Mr. Byrne for the fishes, by Mr. W. M. Tattersall for the amphipods and isopods, and by Mr. G. P. Farran for the pyrosoma. There is a discrepancy as to the source of the Himantolophus rheinhardti, for Dr. Wolfenden says it was bought at Gibraltar, whilst Mr. Holt and Mr. Byrne say it was brought up in the *Silver Belle's* trawl. It is a fine specimen, well described and figured, and it is now in the Natural History Museum at South Kensington, as it is only the fifth known example of this remarkable genus of fish.

The book forms the first volume of the Memoirs of the Challenger Society. It is well printed, well illustrated, and is provided with a good sketch chart showing the routes of the *Silver Belle* from 1903–1907.

LIBRARY TABLE.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D. Lond. Eleventh edition. London: J. and A. Churchill. 1909. Pp. 695. Price 6*s.* 6*d.* net.—This comprehensive book has reached its eleventh edition, which fact is a sufficient review in itself. It contains a vast amount of information. We might suggest that in the doubtless forthcoming twelfth edition Dr. Hale White should modify the remarks about potassium salts n p. 121 and in other places. It is surely confusing to the student to be told, "When taken by the mouth, potassium salts are excreted as quickly as they are absorbed, so no effect is produced by the potassium ion, but this is really powerfully depressant to all nerve and muscle tissue, as is shown by local application or subcutaneous injection, in which case excretion is not nearly so rapid as absorption." Then on pp. 130–131 he is told of the internal use of potassium nitrate that it is a powerful cardiac depressant, and on p. 134 he is again told that "Sodium salts are not depressant to the cardiac, muscular, and nervous systems, and therefore are not poisonous like potassium salts." Surely it is a pharmacological fact that potassium salts administered by the mouth are more poisonous than sodium salts, and for a student it seems to us that the above passages taken together are confusing. In the section on opium we notice an admirable paragraph as to the diagnosis of opium poisoning from conditions offering similar symptoms—e.g., alcoholic poisoning and cerebral hæmorrhage. The fact that in a book of this size only such an atom of adverse criticism is required as that we have made in reference to the potassium salts is equivalent to columns of praise. Dr. Hale White's book remains one of the very best treatises on the subject.

First Aid to the Injured and Sick. By F. J. Warwick, M.B. Cantab., M.R.C.S. Eng., L.S.A.; and A. C. Tunstall, M.D. Edin., F.R.C.S. Edin. Sixth Edition. Bristol: John Wright and Sons; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 226. Price 1*s.* net.—We have spoken in praise of this little book upon several previous occasions, and can but repeat our praise of this the sixth edition. Some little new matter has been added, the number of illustrations has been increased, and six of them are now coloured. The chapter on Poisons has been rewritten, and altogether the book is one which can be safely recommended.

Some Common Remedies and Their Use in Practice. By Eustace Smith, M.D. Lond. London: H. K. Lewis. 1910. Pp. 112. Price 3*s.* net.—These papers are, the author informs us in his preface, reprinted from the *British Medical Journal* of 1908 and 1909. They deal with antimony, turpentine, iron, alkalies, antispasmodics, opium, and the salicylates in certain serous affections. They are sound and practical and may well be read in conjunction with Dr. W. Murray's "Rough Notes on Remedies." We are glad to note that Dr. Eustace Smith calls tartarated antimony an unjustly neglected remedy, for it is certainly one possessing great value. His paper upon opium and also the one upon the salicylates are most suggestive, and we cordially welcome the appearance of the papers in book form. In another edition the error of "Vinum antimonialis" on p. 5 should be corrected.

Spiritualism and Insanity. Pp. 53. Price, cloth, 1*s.* 6*d.*; paper, 1*s.* *Religion and Insanity.* By Charles Williams, L.R.C.P., L.R.C.S. Edin. London: The Ambrose Co., Limited. 1909. Pp. 117. Price, cloth, 2*s.* 6*d*; paper, 1*s.* 6*d.*—These two little books may well be considered together. As to the first, it is an *exposé* of the dangers of Spiritualism, and as Mr. Williams states that he was at one time closely connected with Spiritualism as the president of a local Spiritualistic society, he naturally came much into contact with Spiritualists. He gives it as his own opinion that Spiritualism, by weakening and destroying the will-power, eventually leads to insanity in many cases. Whether it does this or not, Spiritualism is, where not a pure piece of charlatanry, an unwholesome and abnormal mental influence. The advice of Jerome Cardan to his son is as true now as it ever was: "Nolite credere vos daemones alloqui, aut mortuos videre, sed nec tentate, multa enim latent." "Religion and Insanity" is a plea for the use of religious influences in cases of insanity. We said upon a previous occasion that, in our opinion, the English Church might well imitate the Roman Church in the careful way in which the latter trains her priests in the matter of mental troubles, and we can but repeat that remark again. The temperament which is prone to be upset by the worries inseparable from everyday life is just that which is likely to lead to insanity. A kindly word of advice from one experienced in the various forms of mental distress may be of inestimable value. But there must be the experience. We have always felt the clergy might render help in a class of case which is now very difficult to aid, but they must be properly trained if they are to supplement medical work in this direction.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A DEBATE ON SYSTEMATIC INSTRUCTION IN PSYCHIATRY.

AN Extraordinary Comitia was held on March 3rd, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

A communication was received from the Secretary of the Royal College of Surgeons of England reporting proceedings of the Council on Feb. 10th last.

The following communication was received from the Medico-Psychological Association of Great Britain and Ireland:—

SIR,—I am instructed by the committee of the Medico-Psychological Association of Great Britain and Ireland to approach the universities and other examining bodies on the subject of post-graduate instruction in Psychiatry.

It has long been felt by those most intimate with the subject, that there is in this country no adequate systematic instruction in psychiatry. The evils of this neglect become year by year more manifest. This association is impressed with the urgent necessity for post-graduate teaching in psychiatry in medical schools, and for the granting of a special diploma to candidates after examination, as has already been done with such conspicuous success in public health and tropical medicine. The position of psychiatry as a branch of medicine is unsatisfactory; it is not properly affiliated to other departments of medicine, to their mutual detriment; and under present conditions cannot make full use of those modern methods of research which have resulted in such advances in general medicine.

Young medical men on their appointment as medical officers to asylums find themselves face to face with work and problems of which they have had no previous knowledge, and in preparation for which they can obtain no systematic and scientific training or teaching. As is well known, lectures on psychological medicine and pathological laboratories have been established here and there, and in one or two universities chairs of experimental psychology have been founded; but there is no systematic course of instruction and no recognised diploma at the end of such course. It is submitted that the time has now arrived when such a course and diploma should be established in the principal medical schools of this country, and a diploma in the subject should be instituted by the examining bodies. My association is of opinion that the institution of a diploma would impose a high standard of acquirement on the officers of asylums, would stimulate the scientific study of insanity, and would have an effect in widening and deepening our knowledge of the subject, comparable with the effect produced in public health and tropical diseases by the institution of diplomas in these subjects.

In this letter it is unnecessary to enter into details as to the time required for this post-graduate work and the subjects to be studied; probably each university and examining body will form its own views on these points. I may say, however, that my association considers that the minimum period should be one year; that, provisionally, the subjects should be divided into (*a*) compulsory and (*b*) optional; that in the former should be included (1) anatomy, physiology, and pathology of the nervous system; (2) psychology, normal and morbid; (3) clinical pathology; (4) clinical neurology; (5) psychiatry—systematic, clinical, and medico-legal. The optional subjects suggested are—(1) experimental psychology; (2) bio-chemistry; (3) bacteriology; (4) comparative anatomy and physiology of the nervous system; (5) eugenics. It is suggested that only one optional subject be required of candidates. The council of my association respectfully asks that its proposals may receive earnest consideration, so that in the near future it may be possible to place the teaching of psychiatry on a sound scientific basis, and so bring it into line with other special departments of medicine in this country.

I am, Sir, your obedient servant,
CHAS. MERCIER, President (1908–09).

To the Secretary, the Royal College
of Physicians, Pall Mall
East, London.

The PRESIDENT, in asking Dr. Mercier to open a discussion on the subject, remarked that the proposal to grant a diploma in psychiatry opened up a very large and important question. There seemed to be a tendency to establish various specialties on similar grounds, and there was a danger in a course of this kind of losing touch with general medicine, so that the problem might easily arise as to where such propositions might end. He referred to the proposal that had previously been before the College to grant a diploma in tropical medicine. After long and careful deliberation it had been decided not to grant a diploma but to attach a certificate to the diploma of those candidates who showed an adequate knowledge on that subject. He therefore thought that careful consideration would be required before coming to a conclusion on the matter then before the College.

Dr. C. A. MERCIER moved the following resolution:—

That a committee be appointed to settle the conditions under which a post-graduate diploma in psychiatry shall be granted by this College.

He said that he had signed the letter as a ministerial act in his capacity as President of the Medico-Psychological Assotion, but did not commit himself personally to approval of all its details. With its main tenour, however—the desire to obtain a Diploma in Psychiatry—he was in heartfelt accord. It was an undoubted and deplorable fact that psychiatry was lagging behind other departments of medicine and had not participated as much as other departments in the striking advances that have been made in the last few decades. Without doubt this was in part due to the inherent difficulty of the subject, but it was due also in no small degree to the fact that the junior staff of asylums who, by reason of wealth of material, abundant leisure, and freedom from financial cares, were in an exceptionally favourable position for research, were deterred from undertaking research by lack of incentive. No scientific work that they might do in any way bettered their position, increased their reputation with their employers, or assisted them to promotion. Moreover, so little importance was attached to knowledge of insanity by those who appointed the heads of asylums that medical men were sometimes placed in this position without any knowledge of insanity at all, and without having had any previous experience of the insane. The institution of a diploma in this subject could scarcely fail to have the same effect that it had had in the department of Public Health, of educating public bodies into an appreciation that special knowledge was necessary and ought to be required of persons appointed to these responsible posts. There was, he thought, no more justifiable specialty in the profession of medicine than that of psychiatry. Former occupants of the chair adorned by their present President had admitted to the speaker their entire want of knowledge of the subject, and in doing so had not derogated from their high position. Like Esau, Psychiatry had seen its younger brother—that Jacob, Public Health—step in before it and supplant it in its birthright. Objections had been raised that this diploma might depreciate the value of the Licence, but he would point out that what was asked for was a post-graduate diploma. It was not intended—it would be impracticable if it were intended—to close the junior posts to Licentiates of this College; but it was felt that the possession of a special diploma ought to be a very high recommendation, if, indeed, it did not in time become, as he hoped it would become, a necessary condition for appointment to the higher posts in asylums. They were confronted with the fact that the committee of management of the two Colleges had reported unanimously against the institution of a diploma in tropical medicine and had advised the institution of a mere certificate instead. That report must be allowed due weight, but they had heard none of the reasons for the report; and he thought that report ought not to weigh with them unless they were assured that the two cases were, as the lawyers say, on all fours with one another. It might very well be that the reasons for refusing a diploma in tropical medicine did not apply to the case of psychiatry. He ventured to point out that the diploma in public health had been an unqualified success. It was eagerly sought after and taken by large numbers of medical practitioners. Was that the case with the certificate in tropical medicine? Was not the certificate in tropical medicine something of a failure? He moved that a committee be appointed to settle the conditions under which a diploma in psychiatry shall be granted by this College.

Dr. R. PERCY SMITH, in seconding the motion, said that instruction in psychiatry in this country was very imperfect, that the usual three months' course of lectures with a minimum of eight clinical demonstrations required of the student before qualification, and of which only the most diligent students made full use, could not be regarded as other than rudimentary. The greater number of examining bodies did not exact from candidates for their qualifying examinations any knowledge of mental diseases. He was not speaking of higher examinations such as the Membership of the College or the M.D. of London, which latter can now be taken in mental diseases and psychology. The result was that a man entering on general practice found himself very ignorant of insanity. The object of the Medico-Psychological Association in suggesting a special diploma in psychiatry was to raise the standard for those specially engaged in the treatment of the insane, who wish to rise to the higher posts in asylums. While this country has been foremost in the personal and humanitarian treatment of the insane, other countries were outstripping us in facilities for clinical and pathological research and for teaching, and in the adequate medical staffing of asylums. The presence of psychiatric clinics in cities abroad in connexion with universities and general hospitals gave them an advantage. The institution of a special diploma to be regarded as a post-graduate qualification, which perhaps might in future be regarded as compulsory before promotion to higher posts in asylums, was looked upon as one means of furthering advance in the scientific study of insanity. Psychiatry might be fairly regarded as equal in importance to public health, in which subject the names of over 600 holders of a special diploma were in the College list. The recent establishment by the College of a certificate in tropical medicine instead of a diploma could not be regarded as a success. For many years the Medico-Psychological Association had granted a special certificate in psychological medicine after examination and had connected with it the valuable Gaskell prize and medal, but the certificate of a medical society could never have the importance of a diploma granted by such a body as the College. The Medico-Psychological Association might, however, claim to have done pioneer work in this matter, and it was hoped that the College would go further and lead the van in the institution of a special diploma. It was not proposed that a man should take this diploma before entering on asylum work, but after it had been seen that he was adapted for it and before promotion to the highest posts.

Dr. T. Claye Shaw said that for a great number of years he had insisted both in lectures and clinical teaching upon the importance of the study of psychology in a wide and comprehensive manner. To merely practise the treatment of insanity without a knowledge of psychology was like studying pathology without a grounding in physiology. The present treatment of insanity was in a parlous way, because many of those placed in the most responsible positions were very ignorant of psychology and the scientific aspects of the conditions of insanity, probably because the teaching and examination in the higher branches of the subject had not been sufficiently appreciated by the higher and authoritative boards. It seemed desirable that the College of Physicians should give recognition to the importance and the necessity of a more profound study of the subject in question. He did not agree that the governing bodies of asylums were indifferent to the scientific side of the subject, and he believed that if they understood that an authority like the College of Physicians insisted upon thorough competence in those who had to treat the patients they would appreciate the endeavours to attain it and would liberally grant such measures as were necessary for its accomplishment. He instanced the case of the London asylums where large grants had been made for the study of the pathology of insanity, laboratories provided, and money grants given for scholarships to those who took up the special line. He was aware that one of the medical societies did give a certificate for special study in the subject of psychiatry, but it possessed no authority, and therefore lacked the prestige which would be conferred by a diploma issued by the College of Physicians. He thought that any want of interest in psychiatry among the junior staff of asylums was due mainly to the general indifference with which the study of the higher branches of the subject was met, and he urged that whereas there was at present very remote prospect of advancement for the juniors they would feel that the provision of a higher and more distinctive qualification would entitle them to greater consideration for advancement and would save them from being left to haphazard selection. The public welfare demanded the highest accomplishments in this department of medical practice, and this could only be obtained by the compelling force of an authority such as this College possessed. He concluded by earnestly commending the proposed scheme to the sympathetic consideration of the Fellows.

Dr. G. H. Savage said that at first he felt disinclined to support the suggestion of a diploma in mental medicine, but on further consideration he thought it would be beneficial. The University of London now granted an M.D. in the subject. He felt that lunacy practice was a very special one and that there was a very large and increasing body of men who were entering it as a life's work. He would not wish for the diploma to be considered except as the result of post-graduate work. The Medico-Psychological Association granted a certificate and had special honours examinations, but a diploma from the Royal College of Physicians would have much greater weight. He did not wish to prevent men not having the diploma from being appointed as assistant medical officers to asylums, but he hoped that after a year or more at an asylum it should be recognised that an assistant should prepare for the diploma examination. He believed this would be of great service as a stimulus to work. The older superintendents were good managers and that was about all; their knowledge of pigs was greater than that of pathology, and he wished to place English psychiatric medicine on a right and higher level than it had been. Again, when he said that he had had over 3000 applications from doctors for resident nervous and mental patients, it showed the necessity for men who have to treat such cases having something more than the knowledge required for a pass qualification. It seemed to him that there was reason enough to grant this diploma as a stimulus to assistant medical officers, as a guide to those who wish to place mental cases of a slight degree under skilled and proper care. It would be for the good of the profession and a gain to the public.

Dr. S. Coupland supported the resolution as tending to advance the study of mental diseases in this country, which in some respects had fallen behind other civilised States. He also felt sure that his colleagues on the Lunacy Commission sympathised with this view. For himself he regarded the proposal as likely to prove a valuable incentive to the clinical study of insanity, hitherto too much neglected in asylums, although of late years there had been a notable improvement in this respect, especially in the County of London. The records in asylum case-books were for the most part very meagre, simply complying with the statutory obligation to note the progress of a case at stated intervals, whereas it was obvious that in many of the insane the manifestations varied almost from day to day, and that much could be learnt from closer study and detailed record. Every encouragement should be given to asylum medical officers to pursue scientific study and research, and it was gratifying to note the growing desire, as evinced by the proposal before the College, to utilise to a far greater extent than formerly the clinical and pathological material in which these institutions abounded. In his own comparatively brief experience he had observed that the old idea of the asylum as merely a place of retreat for the segregation of the insane was being replaced by the recognition of its value as a hospital where cases of mental disorder could be studied as well as treated. He believed that the College would be doing much to advance this idea by conferring a diploma on those who had fully availed themselves of the opportunities afforded by asylum work, and that such encouragement in the study of a difficult and highly specialised branch of medicine would be of great benefit to the community.

Dr. Norman Moore said: Our Licence is a guarantee to the public that its holder has received the education and attained the knowledge necessary to enable him to begin to practise his profession. It does not testify to prolonged experience but only to a sufficient experience for that purpose and also to the training which renders the holder competent to enlarge his knowledge in every or in any part of the medical art. If in the interests of the general public medical men ought to know more psychiatry, then that increased knowledge should be obtained by adding to the medical curriculum and not by depriving our Licentiates of one of the ways in which they are entitled to earn their living. It must be remembered that the minimum medical curriculum is five years and that a large proportion of men require six years to attain their qualification, and that it is therefore a very serious matter to add another subject, while, of course, every kind of knowledge is valuable. It is right, too, that having worked out the curriculum and passed his examination a man should not after qualification find his way into various fields of work barred by the necessity of taking a special diploma such as this now proposed in psychiatry. The competence of a Licentiate for employment in any particular post may be proved by testimonials granted by those who have had opportunities of observing his work. Something has been said about a prospective examination inducing medical officers of asylums to work, but are examinations the best way of encouraging work at all times of life? Has not one often heard of men in universities who rightly longed to be free from the trammels of examinations in order that they might work thoroughly at some particular subject? A special diploma in psychiatry would necessarily be taken to indicate that Licentiates of this College who did not possess it were unfit to consider or to treat cases of mental disease and would thus take away their undoubted right to practise in every part of the medical art.

Sir WILLIAM S. CHURCH said that he was rather uncertain as to the exact intentions of those who supported the resolution. If it were proposed to establish a compulsory diploma in psychiatry he thought the suggestion was one which required the fullest consideration for those practising in the study and treatment of mental disease. All students were required to show a certain amount of knowledge in psychological medicine, and if such a degree were granted it might suggest that students obtained no such knowledge. If, however, only a post-graduate or honour diploma were suggested the objections he had named would not be so strong.

Dr. F. WARNER, Dr. M. CRAIG, and Dr. B. PIERCE having spoken in support of Dr. Mercier's motion, the PRESIDENT pointed out that Dr. Mercier's resolution assumed what was the question really before the College. It must first be decided whether the College should grant the diploma before the conditions of such a diploma could be considered.

Dr. F. J. SMITH proposed the following amendment, which was seconded by Dr. FREDERICK TAYLOR:—

> That a committee be appointed to consider the letter from the Medico-Psychological Association of Great Britain and Ireland and report to the College.

After some remarks from Dr. W. P. HERRINGHAM, Dr. H. G. TURNEY, Dr. A. E. GARROD, and Dr. J. E. SQUIRE, the amendment was put to the College and carried, and being put as a substantive resolution, was carried almost unanimously.

The PRESIDENT then dissolved the Comitia.

BRITISH MEDICAL BENEVOLENT FUND.

FIFTEEN cases were considered at the February meeting of the committee and grants amounting to £135 made to 13 of the applicants. Appended is an abstract of the cases relieved:—

Widow, aged 39 years, of M.D. R.U.I. No income; for several years has acted as a housekeeper without salary in return for a home for herself and son—a boy who has recently gone to Epsom College. Is now endeavouring to obtain a paid post. Relieved 11 times, £131. Voted £10.

Widow, aged 63 years, of L.R.C.P., L.R.C.S. Edin. No income, and finds increasing difficulty both to obtain and to do needlework, by which she has partially supported herself for many years. Relieved 11 times, £117. Voted £12.

Daughter, aged 48 years, of late M.R.C.S. Eng. No income; dependent for shelter on brother-in-law whose means are very slender. Has undergone three grave abdominal operations and is unfitted for any permanent occupation. Relieved once, £10. Voted £12.

Daughter, aged 59 years, of late M.R.C.S. Eng. Used to be a governess, but now suffers from epilepsy which quite prevents occupation. Is given a home by a brother, a retired clergyman, who can ill afford it. Relieved twice, £22. Voted £10.

Widow, aged 60 years, of L.F.P.S. Glasg. Quite unprovided for at husband's death. Supports herself and an invalid daughter by selling sweets on commission. Relieved twice, £36. Voted £12.

Widow, aged 45 years, of M.B., B.Ch. Aberd. Has supported herself by nursing, but at present is incapacitated by ill health and dependent on a sister and children who can ill afford to help. Relieved twice, £15. Voted £10.

Widow, aged 40 years, of L.R C.P. Edin. Since husband's death several years ago has acted as a caretaker to a surgery, living free of rent but receiving no salary. Is given slight help by relations and endeavours to earn a little by painting. Three children, two at institutions, and the youngest, aged 8 years, a cripple, living at home. Voted £10.

Wife, aged 47 years, of L.R.C.P., L.R.C.S. Edin. Asks for help because of the total incapacity of her husband, whose means have been exhausted by a long illness and who has been confined to bed for the last six months. Three children, aged 14–10 years. Only source of income a small weekly allowance from a medical sickness fund. Voted £12.

L.R.C.P., L.R.C.S. Edin. Has been entirely incapacitated by illness for the last two years and is dependent on two sisters who keep a small school. Three children, aged 30–28 years, who with difficulty support their mother. Voted £10.

Widow, aged 53 years, of M.B., C.M. Aberd. Receives a few shillings a week from a small house and earns a few pounds in the summer by taking boarders if obtainable. Is not in good health and asks for help to obtain a short change which she is strongly advised to have. Voted £5.

L.S.A., aged 59 years, used to practise in South Africa, but after acting as a civil surgeon during the war found it impossible to re-establish himself owing to the influx of medical men. Obtained some temporary work in this country, but contracted X ray dermatitis, and is at present incapacitated. Children only help to a very slight extent. Voted £10, with leave to apply again if necessary in six months' time.

Widow, aged 70 years, of M.R.C.S. Supported herself for several years by acting as companion, but finds it increasingly difficult to obtain engagements. No income, no children. Relieved five times, £45. Voted £10.

Widow, aged 61 years, of L.F.P.S. Glasg. No income; no children. Receives home from a friend in return for such services as she can render. Health indifferent. Relieved once, £12. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

CAXTON CONVALESCENT HOME, LIMPSFIELD, SURREY.—On March 5th the annual meeting of the supporters of this home for all connected with the great printing industry was held at the St. Bride Institute, Mr. C. J. Drummond, vice-president, presiding. The report congratulated the subscribers on the success which had attended the work of the home during the past year, over 135 convalescents having passed through. The committee earnestly appeals for financial help to liquidate the building debt of £900 incurred for extensions. The report was adopted and the officers were re-elected.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Feb. 24th, with Dr. F. H. Champneys in the chair. A recommendation from the Penal Cases Committee in regard to a certain midwife was that she should be cautioned as to her methods of practice, and "especially as to discontinuing attendance on the tenth day in cases where the patient is then not well." The solicitor to the Board said it had been argued that if a patient could not get up a midwife should not cease attendance. Mr. E. Parker Young pointed out that the wording might be misunderstood in the case of a midwife who ought to send for a doctor. After the chairman had observed that a midwife should not leave a patient who was ill it was agreed that the words should be altered as follows: "especially as to her duty with regard to advising medical help in a case where the patient is not well." A letter was considered from the clerk of the Council transmitting a copy of a report by Dr. S. Monckton Copeman, medical inspector of the Local Government Board, on an outbreak of pemphigus occurring in the practice of a midwife. The Board decided that the Privy Council be asked to furnish copies of the report for the use of members of the Board. A letter was considered from the Local Government Board transmitting a copy of the proposed circular to boards of guardians dealing further with the payment of medical practitioners summoned on the advice of a midwife in cases of emergency, and with the supply and training of midwives. The Board decided that the Local Government Board be thanked for its letter, and that it be informed that the Central Midwives Board approves the proposed circular. A letter was considered from the Registrar of the University College of South Wales and Monmouthshire applying for permission to hold the written examinations at the College at Cardiff, with forms of undertaking signed by Professor D. Hepburn, Dr. E. J. Maclean, and Mr. H. T. Samuel, the proposed supervisors. The Board decided that permission be granted. A letter was considered from Mr. C. E. Longmore, clerk of the Herts county council, forwarding a copy of a resolution passed by the county council as to the conduct of the penal business of the Board. A draft letter to be sent to local supervising authorities asking their opinion as to the suggestion of the Herts county council that on the hearing of a charge against a midwife the local supervising authority should have the conduct of the case was settled, and the Board directed that the letter be circulated to the local supervising authorities.

THE LANCET.

LONDON: SATURDAY, MARCH 12, 1910.

The Compulsory Notification of Epizootic Diseases.

AN Order with the short title "Animals (Notification of Disease) Order of 1910" has been issued by the Board of Agriculture and Fisheries, which marks an important step in the public control of infectious disease in animals. The Order is made under the Diseases of Animals Acts, 1894 to 1909, and it applies only to those diseases which have already been scheduled under the Acts—namely, cattle plague, contagious pleuro-pneumonia of cattle, foot-and-mouth disease, sheep-pox, sheep-scab, swine fever, anthrax, epizootic lymphangitis, rabies, glanders and farcy (Article 1). By the terms of this Order, which will come into operation on April 1st next, a veterinary surgeon or veterinary practitioner registered under the Veterinary Surgeons Act of 1881, who in his private practice is employed to examine an animal or the carcass of an animal must, if he is of opinion or suspects that one of the above-mentioned diseases exists therein, notify an inspector of the local authority. He must also, in the event of the disease being cattle plague, contagious pleuro-pneumonia of cattle, foot-and-mouth disease, sheep-pox, swine fever, epizootic lymphangitis, or rabies, notify a police constable of the police area, who must transmit the information by telegram to the Board of Agriculture and Fisheries, addressed "Agrifi, London" (Article 2). It should be explained that for administrative purposes the police act as inspectors under the Diseases of Animals Acts. It would follow from this Order and a perusal of the portions dealing specially with the diseases last mentioned, that the Board of Agriculture considers the questions involved of such importance from an epizootiological point of view that it desires to be immediately notified of outbreaks or suspected outbreaks, and it is of interest to observe that five of the diseases—namely, cattle plague, foot-and-mouth disease, contagious pleuro-pneumonia of cattle, epizootic lymphangitis, and rabies—have all been successfully stamped out of Great Britain under the policy of the Board.

Article 2 also provides that on receipt of notice an inspector of the local authority shall transmit the information to the local authority, and in the case of anthrax and glanders and farcy also to the medical officer of health of the sanitary district in which the animal or carcass is. The latter part of the section is a useful provision for the purpose of warning the public health authorities that a dangerous disease of animals which is communicable to human beings exists in their district, and the information may obviously assist in the formation of an important diagnosis in a human patient. We might have considered this article to be more complete had rabies and foot-and-mouth disease been included in the list to be notified to the medical officer of health, but the omission seems to be of less consequence since these diseases have been stamped out of the country, and very elaborate precautions are taken by the Board to prevent them being reintroduced. By providing in its Orders that medical officers of health are to be notified of cases in their districts of disease in animals of a kind communicable to man the Board of Agriculture has taken the first step in a policy which might with advantage be made reciprocal. There are many cases of anthrax in man which are contracted by direct contact with a diseased carcass, and the majority of cases of glanders in human beings are due to contact with a diseased horse. It is by no means always that the veterinary health authorities have heard by notification of the existence of the disease on the premises where the presence of a diseased animal has led to a human being becoming infected, and early information that such a thing has occurred would expedite inquiry regarding the existence of other cases amongst the animals. The provision for notification in this Order is in addition to any notification prescribed by any existing Orders of the Board dealing with the diseases concerned. These make it obligatory, under penalty, for the owner or person in charge of an animal affected, or suspected of being affected, with the disease to which the Order applies to notify a police constable of the police area in which the animal is, and the same applies to a person having had such an animal in his possession or under his charge. The new Order further provides that when a local authority receives under this Order or otherwise information of the existence or suspected existence of disease in the carcass of an animal which died or has been slaughtered in the district of another local authority, it shall forthwith transmit the information to the other local authority. Not the least important article of the Order deals with the fee for notification, and states that a veterinary surgeon or veterinary practitioner who notifies disease under and in accordance with this Order is entitled to receive a fee of 2*s.* 6*d.* from the local authority for each notification, but it is provided that only one fee will be payable for a report relating to two or more animals or carcasses examined at the same time on the same premises.

The similarity between this Order and the Infectious Disease Notification Act is apparent, and as that Act has had important bearings on the practice of State medicine, so we may expect this Order to inaugurate a new phase in the history of the public responsibilities of the veterinary profession. Its evolution can be traced in a previous Order of the Board of Agriculture and Fisheries, the proceedings of the Royal College of Veterinary Surgeons, and those of the Public Control Committee of the London County Council. The previous Order of the Board was the London (Notification of Glanders) Order of 1906, which applied only to the County of London, and related only to the notification of glanders. No payment of a fee, however, was provided for, as the Board at that date had no power to prescribe one. For some time there had been a feeling in the veterinary profession that in the absence of an Act or Order providing for compulsory notification of disease its members were placed in a very awkward position, for while desiring to aid the authorities by informing them of cases of contagious disease occurring in their practice, their doing so was liable to be looked upon as a breach of professional confidence by their clients. The Royal College of Veterinary Surgeons, however, protested against the 1906 Order on the principle that a compulsory professional service should be provided for by at least a nominal fee. A deputation from the College waited on the Public Control Committee of the London County Council and pointed out that the profession felt aggrieved that the principle of a fee had not been recognised, and this the more because the Board had expressed themselves in favour of the principle and had suggested the insertion of a clause empowering payment in the next General Powers Bill. It was then resolved by the Public Control Committee to apply for the necessary powers. With the object of extending compulsory notification to the country at large and to any disease of animals if thought necessary, Lord CARRINGTON, President of the Board of Agriculture and Fisheries, introduced a Bill in the House of Lords in September, 1909. This Bill became the Diseases of Animals Act, Chapter 26, which is dated Nov. 25th. The Act provides that a fee not exceeding 2*s.* 6*d.* shall be paid to veterinary surgeons or veterinary practitioners for notification of disease, and that the diseases for which a fee shall be paid and the amount of the fee not exceeding 2*s.* 6*d.* shall be in accordance with an Order made under the Act, such as has now been issued.

The veterinary profession are very favourably disposed to the new position thus created, and it should receive a welcome from all medical officers of health. The connexion between infectious diseases in man and animals has not yet received the close study that is its due, and both scientific and administrative collaboration is undoubtedly desirable between sanitarians and veterinarians. The story of plague has given us a terrible lesson in the epizootic origin of epidemics, and in this country it seems probable that human glanders is of increasing occurrence. The whole question of animal tuberculosis obviously concerns medical men and veterinary practitioners in almost equal proportion, and we could multiply instances to show the close relationship that should exist between the public practice of the two professions.

◆

The Cause of Beri-beri.

FROM time to time during the past year we have laid before our readers in these columns the results reported in respect of the investigations into the origin of beri-beri carried out at the Medical Research Institute of the Federated Malay States by Dr. HENRY FRASER and Dr. A. T. STANTON (vide THE LANCET of Feb. 13th and 20th, May 8th, and Oct. 9th, 1909). These investigators have now embodied their most recent conclusions in a paper which was read on Feb. 18th before the London Society of Tropical Medicine. Their previous work in the Malay Peninsula, it may be remembered, had confirmed the view that the occurrence of beri-beri was intimately associated with the consumption of white rice, and that neither the parboiled variety nor yet the rice prepared in Malay fashion by primitive methods of pounding or winnowing gave rise to the disease. Their researches went to prove also that beri-beri is not a "place disease," that it is not communicable from man to man, that it is not due to the use of stale or deteriorated rice as such, nor to a poison derived from decay; and that it is not due to a specific organism, fungus, mould, germ, or spore.

In THE LANCET of Oct. 9th, 1909, we commented on the previous interim report issued by the experts of the Medical Research Institute. At that time their attention was being more particularly directed to the chemical analysis and histological examination of rice derived from various sources. In parboiled rice, remnants of the pericarp remain attached to the rice grains, whereas in white rice the pericarp and the layers subjacent to it are polished away in the process of milling. Parboiling renders the rice grain tougher and less friable, so that the peripheral layers cannot be removed so readily as in white rice. In these layers thus retained in parboiled rice are contained most of the aleurone and oily material present in unbroken rice. At one stage of the inquiry there appeared to be a suggestion that this difference in the amount of fat in the two kinds of rice might be found to account for the development of the disease. The deficiency of fat theory of the origin of beri-beri has been advanced by some experts, and the experience of the Japanese navy seemed to afford support to the hypothesis. But Dr. FRASER and Dr. STANTON have now come to the conclusion from their own observations, supported by a series of experiments on domestic fowls, that a deficiency of fat does not afford a complete explanation of the origin of beri-beri. Experiments with fowls have clearly showed that these animals, when fed on various sorts of rice, were sensitive to differences in them, and it was established that this reaction might be taken as an indicator of the beri-beri producing power of a given rice. Rices were available which were known to have caused the disease in man, and when fowls were fed with them polyneuritis gallinarum was developed, this malady being truly analogous to beri-beri in the human subject. Other fowls kept under identical conditions but fed on parboiled rice remained healthy during the whole period of the experiment. Parboiled rice, which had been subjected to exhaustion with hot alcohol and then dried in the sun to free it from alcohol, when given to fowls produced polyneuritis just as white rice did. It was therefore inferred that something in the outer layers which are milled away in white rice and retained in parboiled rice could be added to white rice to prevent its giving rise to beri-beri. From a rice mill at Singapore were obtained (1) a quantity of original "padi" then being milled, in this case a partially husked padi imported from Indo-China; (2) a quantity of the finished product as it came from the machine; and (3) a quantity of the polishings from the same rice. Fowls fed on the unmilled rice for five weeks remained healthy, while fowls fed on the milled rice during the same period developed polyneuritis. Further, fowls fed on milled rice and also with some polishings made into an emulsion and conveyed by a tube into their crops remained perfectly well. It was likewise shown that fowls fed on the original padi after it had been prepared by a native woman in Malay fashion remained healthy. The inference drawn from these experiments is that it is the milling process which is at fault, and that in that process something is removed which is essential to the maintenance of the normal nutrition of nerve tissue. At this point of the investigation it was decided to determine the amount of phosphorus, calculated as phosphorus pentoxide, in the various kinds of rice, and it soon became apparent that the phosphorus content of the different rices varied with their known harmful influence: that is, the less phosphorus contained in a given rice the more likely it was to cause polyneuritis gallinarum in fowls, and, on the other hand, the higher the phosphorus content the less liable was the rice to produce that disease. On analysis a sample of parboiled rice, which though given for some weeks to fowls failed to produce any effect on their health, was found to contain 0·469 per cent. of P_2O_5; a sample of white rice which had produced polyneuritis in fowls yielded only 0·277 per cent. of P_2O_5, while a sample of rice polishings used in the form of emulsion in the experiment mentioned above was found to contain no less than 4·2 per cent. of P_2O_5. The cause of beri-beri is, therefore, put down by these experiments to be an insufficient amount of phosphorus in the articles of food forming the dietary. It is interesting to mention in this connexion that at a recent meeting of the German Society of Tropical Medicine Dr. H. Schaumann conjectured that beri-beri would ultimately be found to be a disease of metabolism associated with a diet deficient in organically combined phosphorus.

The results of the investigations carried out by Dr. Fraser and Dr. Stanton are summarised as follows: Beri-beri is associated with a diet of which white rice is the staple article; this white rice as produced in the mills loses substances which are essential for the maintenance of the nutrition of nerve tissue; these substances exist in adequate amount in the original grain, and in superabundant quantity in the polishings from white rice; the estimation in terms of phosphorus pentoxide of the total phosphorus present in a given rice may be used as an indication of the beri-beri-producing power of such rice when forming the principal constituent of a dietary. The prevention of the disease will be achieved by substituting for the ordinary white rice a rice in which the polishing process has been omitted or carried out to a minimal extent, or by the addition to a white rice diet of articles rich in those substances in which such rice makes default. One such article, which is cheap and readily obtained, is the polishings from white rice. The use of parboiled rice will achieve a like result provided the polishing process is not carried beyond the limited extent now customary. These results are extremely interesting and important; and all who have concern with the prevention of this hitherto mysterious disease will look forward eagerly for the full report which has been promised by Dr. Fraser and Dr. Stanton.

National University of Ireland.—The Senate of the National University of Ireland has recognised St. Patrick's College, Maynooth, as a constituent College of the University.

The Diagnosis of Tuberculosis by Means of the Deviation of Complement.

The application of the Bordet-Gengou phenomenon of the deviation of complement by means of an antigen and its antibody to the diagnosis of disease has proved fruitful in more than one direction, notably in regard to syphilis by means of Wassermann's reaction, and also in hydatid disease. The same method has been employed as a diagnostic procedure in tuberculous disease by M. Marmorek.[1] We have received a copy of a paper giving the results of the application of this test to a series of cases by M. A. Bergeron.[2] He obtained by its means results which he claims are very encouraging, since they agreed with the clinical findings in 204 out of 213 cases. The principle of the test depends upon the fact that an antigen in the presence of its specific antibody can combine with it through the agency of a third thermolabile substance, which exists in all serums and is known as complement. If to the mixture of antigen, antibody, and complement be added a second antigen and its specific antibody, their combination will be prevented, owing to the absence of free complement, if this has been all utilised in the previous reaction. To apply the test the filtered urine of the patient is used as the first antigen, since according to M. Marmorek it contains the tuberculous toxin in cases of active tuberculous disease. For antibody the simple antituberculous serum of M. Marmorek is used—i.e., a serum specially prepared for this purpose by the immunisation of horses against the tubercle bacillus. The complement employed is that of guinea-pig's serum; the indicator or second antigen is supplied by a 1 in 10 dilution of sheep's red corpuscles, and the antibody by the serum previously heated to 56° C. of a rabbit rendered immune to sheep's corpuscles. The details of the method of procedure are: in a sterile small glass tube 0·2 cubic centimetre (four drops) of fresh filtered urine is placed with 0·3 cubic centimetre (six drops) of antituberculous serum and 0·05 cubic centimetre (one drop) of fresh guinea-pig's serum. The mixture is left in the incubator at 37° C. for one hour. At the end of this time 0·3 cubic centimetre of a 1 in 10 dilution of sheep's red corpuscles is added, together with that quantity of hæmolytic serum which is necessary to destroy these corpuscles in 45 minutes. The mixture is again returned to the incubator for an hour and then examined for hæmolysis.

M. Bergeron divided the 213 cases in which he has applied this test into three groups—the first comprising the tuberculous cases; the second those in which there was a suspicion clinically that the disease might be tuberculous; and the third the non-tuberculous cases. In the first group there were 133 cases, 131 of which showed either a complete absence of hæmolysis or a partial degree. Only two cases gave total hæmolysis and both were apyretic; the first appeared to be the subject of a torpid or quiescent form of the disease, but the second, dying from a non-tuberculous affection, was nevertheless found to show definite bacillary lesions. Among these 133 cases there were 114 cases of pulmonary tuberculosis, all with more or less fever, and 14 cases of serous membrane tuberculosis, the remainder being cases of osseous, intestinal, and renal tuberculosis. In the second group, comprising the suspicious cases, there were only six patients and these gave varying results. In the third group, that of cases clinically non-tuberculous, there were 74 patients, of whom 67 gave complete hæmolysis. The cases comprised instances of influenza, pneumonia, broncho-pneumonia, emphysema, enteric fever, rheumatism, and other general and local ailments. Seven of the cases showed a partial hæmolysis only, giving an indication not in agreement with the clinical features of the patients. M. Bergeron therefore concludes that the method is of value, but that it is not infallible.

---

[1] La Presse Médicale, No. 2, Jan. 6th, 1909.

[2] Ibid., Jan. 1st, 1910.

A paper on the same subject is recorded in the *Comptes Rendus des Séances de la Société de Biologie* of Jan. 15th by M. D. Jacobson. This observer has tried to render the reaction more sensitive by using a smaller quantity of complement, so that there shall be less likelihood of any remaining over from the first antigen-antibody combination. He therefore employed half a drop of guinea-pig's complement instead of a drop. He examined 160 urines—68 from non-tuberculous cases and 92 from patients suffering from that disease. Of the 68 non-tuberculous cases 66 gave complete hæmolysis with half a drop of complement. Among the 92 tuberculous cases 38 showed complete or partial absence of hæmolysis with a whole drop of complement. The remaining 54 gave complete hæmolysis. They were afebrile cases in good general condition, with latent or strictly localised lesions. On testing them with half a drop of complement 38 showed partial or complete absence of hæmolysis. M. Jacobson concludes that even in latent tuberculous disease, where there is no evidence of general intoxication, small quantities of toxin may occur in the circulation, and may be able to be demonstrated on using smaller quantities of complement instead of the quantity originally recommended. These observations are of considerable interest, and the method may prove to be of great practical value in diagnosis, since it has the merit over the recent diagnostic procedures involving the use of tuberculin on the patient that it does not produce any disturbance of the patient and can be carried out in the laboratory.

Annotations.

"Ne quid nimis."

MEDICINE, LITERATURE, AND BULWER-LYTTON.

When in the winter of 1854 Sir Edward Bulwer (afterwards Lord) Lytton addressed the Associated Debating Societies of Edinburgh, of which he had been made honorary president, he dwelt on the fascination possessed by the healing art, particularly on its physio-psychological side, for all cultured minds, and concluded by offering a prize for the best essay on the inter-relations of the mental and the corporeal constitution of man. The successful competitor, among many drawn from every academic faculty, was the clinical assistant of Professor Hughes Bennett, Dr. John Glen, whose essay published in the following year held the field till further research, physiological and psychological, had wrought a radical change in the whole subject. Throughout his long and laborious life, indeed, Lord Lytton seldom ceased to be under the spell of the fascination on which he dwelt so eloquently, and Mr. Escott's brilliant monograph [1] comes opportunely, not only to revive interest in the author of "My Novel" with its admirable character sketch of Dr. Riccabocca, but also in the list of names, medical and surgical, associated with the theory and practice which found favour in the "thirties" and subsequent decades of last century. Quite early in the volume we are introduced to Dr. Elliotson, who, apart from the mystic side of his productivity, did much careful and suggestive work on the action of drugs, besides, by precept and practice, contributing largely to clinical resource, and who, moreover, laid the world under incalculable obligation by saving the life of Thackeray, whose gratitude finds measurable and touching expression in the dedication of "Pendennis." A later chapter makes the reader acquainted with the gifted Budd family, at least three of whom rose to high and wide reputation far beyond their West of England birthplace and sphere of activity—one of whom performed for Bulwer-Lytton and Benjamin Disraeli a service not less vital than Elliotson achieved for the author of "Vanity Fair." Bearing more or less directly on the healing art, the physical, particularly the chemical and bio-chemical, sciences, as Mr. Escott points out, had irresistible attractions for his hero, whose "Caxtoniana" are fraught with sympathetic allusions to Mary Somerville and Michael Faraday, and to their influence in widening and extending the mental horizon of the contemporary world. Not that all this genuine interest in the medical art and its congeners was unaccompanied with error, or for that matter with dangerous fallacy. In fact, the enthusiastic amateur, with his lapses into practice "adopted in haste and repented of at leisure," had his counterpart in Bulwer-Lytton, with his impulsive resort to quackery, till hard-earned experience taught him the truth of the adage that as "the amateur lawyer has a fool for his client and the amateur divine a quack for his priest and a gull for his congregation, so the amateur consultant has a dupe for his patient." Mr. Escott, as the conscientious biographer, makes no concealment of his hero's tendency to fads, as throwing light on that love of premature generalisation which to some extent mars the skilful plot, the vivid portrayal of character, and the finished, scholarly style which still reward perusal of his earlier work. Not till later in life, when the years that bring the philosophic mind had sobered and steadied his judgment, did Bulwer-Lytton make a full revelation of his powers in "The Caxtons," "My Novel,' "Kenelm Chillingly," and "The Parisians"—works which form a counterfoil, nay, a positive rebuke, to a great deal that is profusely turned out and eagerly read in contemporary fiction. Abandoning the high *priori* road which starts from no premises and leads to no conclusion, he settled down to the study of real life in its typical developments, giving scope for the first time to the well-trained intellect which made Thackeray say of him (as Mr. Escott reminds us), "I would gladly give half of my reputation to be able to put the other half on a basis of scholarship and literature equal to Bulwer-Lytton's." This tribute, honourable alike to its author and its recipient, was worth reproducing, if only to attract the public to an author whose prose and verse, covering a wide and varied field of human experience, constitute for the careful reader something of a liberal education," conveying much useful, if recondite, knowledge, historical and social, and conducing to the masculine and robust development of character traditionally associated with the English name.

---

[1] Edward Bulwer, first Baron Lytton of Knebworth. By T. H. S. Escott. London: George Routledge and Sons. 1910. One volume. Price 7*s*. 6*d*. net.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

The annual meeting of the President and General Council of King Edward's Hospital Fund for London was held at Marlborough House on March 10th, His Royal Highness the Prince of Wales, President of the Fund, being in the chair. In order that there may be as little delay as possible in the distribution of the money at the disposal of this Fund a meeting of the council, which is really a preliminary annual meeting, is held at the end of each year, and the salient points of the proceedings on Thursday last will be found in our Annus Medicus for 1909 (The Lancet, Dec. 25th, p. 1927) and in our issue for Jan. 1st of the present year (p. 59). The total receipts for the year 1909 were £258,926 3*s.* 2*d.* This sum was made up as follows: Donations, £12,145 6*s.* 11*d.*; contributions to capital, £279 3*s.* 10*d*, together with £13,782 5*s.* 8*d.* net profit on realisation of securities; annual subscriptions, £23,615 2*s.* 7*d.*; contribution of the League of Mercy, £19,000; from the Lewis estate (exclusive of interest), £75,000; legacies (including interest on Lewis legacy), £46,401 18*s.* 5*d.*; interest from investments, £68,502 5*s.* 9*d.*; together with £200 from the trustees of the Bawden fund. The amount distributed was £150,000, being an increase of £10,000 over the sum distributed in 1908. The total sum distributed amongst hospitals, convalescent homes, and consumption sanatoriums since the foundation of the Fund now exceeds £1,000,000, the exact figure (after deducting grants to the extent of £4659 16*s.* 7*d.* that have been allowed to lapse) being £1,134,916 8*s.* 5*d.*

PURPURA HÆMORRHAGICA DUE TO BENZOL POISONING.

In the *Bulletin* of the Johns Hopkins Hospital for February, Dr. R. Selling has reported a remarkable series of cases of benzol poisoning, which show the danger to which workers with this substance are exposed and that removal from its influence may not be sufficient to prevent a fatal result. The cases occurred among workers employed in the "coating room" of a factory for the manufacture of tin cans. A mixture of rubber, resin, and colouring matter dissolved in commercial benzol was used as a substitute for solder. 23 hands were employed in the room: 5 men as machinists, 4 girls as inspectors, and 14 girls between the ages of 14 and 16 at the coating machines. Amongst the latter most of the cases, and all the serious ones, occurred. One half of these girls fed the can covers to the machines, which automatically coated them about the margin with a thin layer of the mixture, while the other half removed the covers. The covers were then piled in trays, inspected, and allowed to dry by the evaporation of the benzol. Ten gallons of benzol a day were used. In spite of wide open windows and excellent ventilation a strong odour of benzol pervaded the neighbourhood of the machines and a weaker odour the rest of the room. The following is an outline of one fatal case. A medical practitioner noticed on June 1st, 1909, that a girl, aged 14 years, whose mother he was attending for pneumonia, had marked pallor and a purpuric eruption, though she felt well. Soon afterwards hæmorrhages occurred from the mouth and nose, and she was admitted into the Johns Hopkins Hospital on June 28th. She had been working at the coating machine for about four months during which she had no symptoms. She ceased work in consequence of her mother's illness. About a month before admission she noticed blue spots on her arms and legs which came out slowly, a few at a time. Soon afterwards bleeding from the gums, nose, and throat commenced. A few days before admission there was severe hæmorrhage from the throat, which was controlled with difficulty. For a week she had been in bed, the chief symptoms being weakness and giddiness. On admission she was well nourished, but her skin showed a waxy pallor, and her mucous membranes were very pale. There was a general eruption of macules from 1 to 3 millimetres in diameter, varying in colour from purplish-red to blue. On each shin was a large ecchymosis. The gums were slightly bleeding, but were not spongy. Extending from the left tonsil to the right anterior pillar of the fauces was a brown necrotic-looking mass surrounded by an inflamed border. This had been the site of severe hæmorrhage, which was controlled by the application of ferrous sulphate. The edge of the liver was felt 2 centimetres below the ribs. The fundi were pale and showed numerous hæmorrhages and neuro-retinal œdema. Continuous but slight oozing of blood from the mouth and throat took place and a few fresh purpuric spots appeared. Blood examination showed 1,090,000 red corpuscles and 480 white per cubic millimetre, and 11 per cent. of hæmoglobin. The temperature ranged from 99·8° to 104·6° F. On July 3rd the patient passed into a state of stupor, from which she could not be roused, and death occurred on the 6th. The necropsy showed fatty degeneration of the heart and liver and an aplastic condition of the bone marrow. Two other girls were also admitted into the hospital with similar symptoms, of whom one died. Examination of the other employees of the coating-room showed that two men and two girls had a few purpuric spots but were free from other symptoms. Blood examination revealed in them slight anæmia and leucopenia (the leucocytes varying from 3900 to 5200). A series of similar cases which occurred in a factory at Upsala for the manufacture of bicycle tyres has been described by Santesson.[1] Benzol was used as a solvent for the rubber. In these cases there was a marked purpuric eruption and four were fatal. It is noteworthy that the disease may progress in spite of the withdrawal from the influence of the poison.

THE MONTH OF FEBRUARY.

The month of February of this year differed greatly from the corresponding period in 1909 both in England and on the continent of Europe, the temperature having been as much as 4° or 5° higher in many parts of this country, about 7° at Paris, Rome, Florence, and Biarritz, and 9° at Berlin. Throughout England and the adjacent regions of France it was also much wetter, rain falling with great frequency, and the total amount being far more than the normal. In spite of the frequent rain, however, fine, clear intervals were so numerous that over the kingdom generally the sunshine exceeded the average. In London (Westminster) the total number of hours (54) was 30 hours in excess of the normal for February. At Torquay, which appears to have been the brightest spot in the kingdom and also one of the most rainy, the climatic conditions were still more remarkable. The sun shone during 117 hours, which is only seven hours less than its record for February, while the total amount of rainfall was as much as 5·91 inches. Only one day passed without a measurable quantity of rain, and the very appreciable amount of 0·04 inch or more fell on 23 days. The total of 5·91 inches has only been exceeded in February once during the past 34 years. The Scilly Isles maintained their unrivalled reputation for equability of temperature, the mean range between the day and night being only 6° and the highest temperature 52° in the shade. All the resorts in Southern Europe experienced greater warmth during the daytime, but the nights at Scilly were much milder than those at Nice, as mild as those at Biarritz and Palermo, and nearly as mild as those at Naples and Palma. The night temperature on the south-west coast of England generally was about equal to that of Florence and Nice. At Lisbon, Algiers, and Malta the temperatnre of the nights was as high as that of the afternoons in the warmest part of this country. Although Berlin was very mild for the time of year, it was colder than any part of the English Midlands, and Brussels was colder than Harrogate. The driest resorts in the southern regions were Lisbon, Nice, and Palma, the last named recording rain on only three days, while the wettest were Brussels and Biarritz, where rain fell on at least 24 and 20 days respectively.

---

[1] Archiv für Hygiene, 1897, p. 336.

ALCOHOL AS A FOOD.

IN spite of an immense amount of experience and investigation the value of alcohol in the treatment of disease still remains a subject of acute controversy. The modern tendency is to restrict its field of utility, and some authorities even go so far as to deny that it is of any use as a stimulant and regard it simply as a narcotic. That in a limited quantity it is a food is open to less doubt. In the last few years some important investigations have been made on the subject, principally by German writers. They are embodied in a useful paper contributed to the *Yale Medical Journal* for January by Dr. M. M. Scarbrough. The combustion of a moderate amount of alcohol, say, a quart of claret, 7 ounces of whisky, 1½ quarts of beer, or 2½ ounces of absolute alcohol yield about 500 calories of energy, about a fifth of the energy required by a person at rest. The first question that arises is, What proportion of alcohol taken by the mouth is utilised, and what wasted? Recent American investigations show that when 6 or 7 ounces of whisky are taken 98 per cent. is oxidised and 2 per cent. escapes by way of the breath, urine, fæces, or skin. German investigators, such as Rosemann, assert that as much as 13 ounces of whisky are thus consumed by the body. How does the availability of the energy yielded by alcohol compare with that of other foods? In the case of proteins 22 per cent. escapes in the urine as incomplete oxidation products, and 8 per cent. in the fæces, unused. Fats are oxidised to the extent of 95 per cent. and carbohydrates to the extent of 98 per cent. Thus alcohol stands on the same plane as sugar and starch in its availability for the production of energy. The question may be asked, Does alcohol interfere with the digestion and metabolism of other foods? Chittenden and Mendel found that in dilute solutions it does not retard the digestion of protein. Admitting that alcohol is oxidised in the body like other foods, is its energy utilised or wasted? On substituting alcohol for an equivalent amount of fat or carbohydrate in a diet just sufficient for the needs of the body wasting does not follow, showing that the alcohol is utilised. This is also proved by the fact that alcohol, like carbohydrate, has a fat-sparing action. When added to diet only sufficient to maintain weight it will cause the subject to gain weight. Further, like carbohydrate and fat, alcohol is a protein-sparer. This was proved last winter at Yale by experiments made by Dr. Hilditch on himself under the direction of Professor Mendel. Kochmann has recently shown that alcohol given subcutaneously in moderate amounts to starving rabbits prolongs life, and therefore suggests the subcutaneous administration of alcohol in various diseases. Is alcohol a source of muscular energy? This cannot be proved, but there is no reason to suppose that muscle cells cannot burn alcohol as they do other foods. However, there is evidence that strenuous muscular work, such as athletics, is better performed without alcohol. This is explained as due to the effect of alcohol on the nervous system. In what circumstances is alcohol valuable as a food? Dr. Scarbrough thinks it is valuable in many conditions of malnutrition, as it does not require digestion and is easily and readily absorbed. Further, it is one of the few foods which can be given subcutaneously. Its administration per rectum ought also not to be forgotten, as it is more readily absorbed even than glucose and weight for weight yields more energy. Lastly, but of great importance, is the use of alcohol in severe diabetes. For years this was known clinically, but whether the value of alcohol was due to its action as a drug or as a food was not known. In 1906 Benedict and Török in studying the origin of the acetone bodies in diabetes substituted alcohol for fat in the dietary and found a marked decrease in the excretion of acetone, sugar, and nitrogen. At the same time Neubauer found alcohol of great use in severe diabetes. He gave daily 12 to 24 ounces of a wine containing 10 per cent. of alcohol and found regularly a decrease in the output of sugar, acetone, oxybutyric acid, and ammonia and total nitrogen. The value of the alcohol is due to the fact that the organism utilises it as a food, sparing fat and protein, at a time when the tissues cannot utilise carbohydrates. But, apart from diabetes and a few conditions of malnutrition, there is no evidence that alcohol is a better food than carbohydrates, and there is some evidence that it is inferior to them.

ENZYMES IN THE LAUNDRY.

THE word "laundry" suggests to the minds of many people "chemicals," and the laundryman, rightly or wrongly, is often blamed for the holes in our linen and other fabrics on the assumption that he employs corrosive bleaches. Bleaches, however, may be legitimately used for the purpose and without any harm to the fabric whatever so long as they are scientifically applied and scientifically removed. In many cases a fabric comes to pieces because of its own inferior structure and substance. Nowadays it is common enough to find showy goods dependent upon mineral loading or other foreign substances which form, so to speak, the skeleton of the flimsy material. Should the skeleton yield, as it may do, even to the bland influence of soap and water, the fabric, having lost its "bones," readily disintegrates and the laundryman is blamed for using "corrosive acids" or a machine which attacks material like the "devil"—that is to say, like the appliance which is used for breaking up old carpets and cast-off clothing in the manufacture of mattress stuffing. No doubt the laundryman is at fault sometimes, but on the whole he is liable to suffer severely from a misrepresentation of facts. One of the latest applications of science to laundry work, to which the stern critics of soda, chloride of lime, or borax can raise no objection, is the use of diastase of malt to dissolve out the starch in soiled starched goods preliminary to washing. As is well known, diastase has the power of rapidly liquefying starch, converting it into soluble dextrin and ultimately malt sugar, which may readily be washed out of the fabric. In these days, when such powerfully active preparations of enzymes are possible, the method is likely to become general, and its adoption will relieve the laundryman of the odium of being a "chemicaliser." Generally speaking, however, the hydrolytic action of the enzyme is the same as that of an acid, but the latter is likely to injure the fabric unless very carefully used. The biological process can do no harm, and some day perhaps chemical agents may be abandoned in favour of further biological processes which will produce the stiff linen without starch or borax.

THE TROPICAL DISEASES RESEARCH FUND.

IN no department of medicine have such signal advances been achieved of late years as in that of tropical medicine. Considering the comparatively small pecuniary encouragement which it has in the past received from the State for the purpose of scientific research, it is surprising to learn how much has been already accomplished. There are some signs that the Imperial and Colonial Governments are now more favourably disposed towards the efforts which are being made by the medical profession to prevent the ravages of tropical disease and to render some of our colonies more safely habitable. These remarks are prompted by the perusal of the recently issued annual report for 1909 of the Advisory Committee for the Tropical Diseases Research Fund. This committee was constituted in 1904, at which time the Imperial Government and various other bodies made themselves responsible for certain sums as annual contributions to the Research Fund for a period of five years. As that period terminated in 1909 the committee had to face the possibility of some at least of the contributors discontinuing their subscriptions. Fortunately, all the previous subscribers have agreed to renew their contributions for another period of five years, and there is also some prospect of further payments being received towards the fund from certain of the smaller British colonies which have not hitherto contributed. The total amount of revenue at the disposal of the Advisory Committee in 1909 was £3470, of which £1000 were contributed by the Imperial Government, £500 by the Government of India, £200 by the Rhodes trustees, and £1770 by various colonial Governments. The expenditure during the year amounted to £3333, of which £1383 were voted to the London School of Tropical Medicine, £1000 to the Liverpool School of Tropical Medicine, £750 to the University of London, and £200 to the University of Cambridge. Most of the money granted to these institutions was devoted to payment of the salaries of special professors or lecturers on tropical medicine, protozoology, parasitology, and economic entomology, also towards defraying part of the expenses of laboratories in which research work is carried out. It is obvious that much good is likely to follow this expenditure of money for special instruction in the various branches of tropical medicine to medical men about to proceed to our colonies and dependencies. In our opinion this wise expenditure is likely to bear good fruit in future years. No grant was made from the fund in 1909 towards the costs of the sleeping sickness investigations in Uganda for the reason that money for this purpose was forthcoming from other sources. Reference is made by the Advisory Committee to the work of the Sleeping Sickness Bureau, which in its opinion has amply fulfilled the hopes which were expressed in the report for 1908 concerning it. The Australian Institute of Tropical Medicine, towards the establishment of which the committee in 1908 contributed £400, has now been definitely constituted and a director appointed. Adequate contributions for its future maintenance will be obtained in Australia; the Universities of Sydney and Melbourne are also interested in the matter. A small bacteriological laboratory under the charge of a skilled bacteriologist has been established in the island of St. Lucia, and the Advisory Committee hopes to include in its report next year some record of the work done in the new laboratory. The committee was consulted by the Secretary of State for the Colonies as to a proposal to enlarge the Medical Research Institute for West Africa at Lagos, and plans were ultimately passed for extension of the building at an estimated cost of £2350. The committee has been greatly interested during 1909 in the question of malaria and its prevention. Appended to its report is a copy of a circular despatch which the Colonial Secretary addressed in March of last year to all the tropical colonies in which malaria is prevalent. Enclosed with the despatch was a reprint of a letter to the editor of the *Times*, by Professor W. Osler of Oxford University, on the subject of "Malaria in Italy: a Lesson in Practical Hygiene." Replies were invited from the various colonies as to the extent to which preventive measures against malaria had been carried out. The answers received show that on the whole a good deal had been done generally to combat the disease. Special attention was directed to the reply from Ceylon, containing as it did full and excellent statistics on the subject. Mention is also made that in Mauritius much had been done at a comparatively small outlay. In the colonies as elsewhere progress is hindered for want of funds and also by the attitude of many native races respecting measures for their own and others' benefit. An instance of this may be quoted from the report of Dr. D. M. Macrae, medical officer of the Bechuanaland Protectorate, who says that little can be done until the natives are educated up to some civilised ideas of disease and its prevention. At present they are largely in the hands of wizards and impostors, and notwithstanding a century of zealous missionary work among them and 25 years of administrative control the Bechuanas remain exactly where they were. Even the great medical missionary David Livingstone, who spent 13 years teaching them, was inclined to regard them as a "lost race." Hundreds of children and adults, says Dr. Macrae, have perished among the native population whose lives could certainly have been saved by the administration of quinine, yet though this drug is always within reach the natives somehow prefer to die rather than take any "white medicine." The committee append reports on the excellent work done at the Schools of Tropical Medicine in London and Liverpool; the report of the professor of protozoology at the University of London; an account of the work performed by the research student in entomology at the University of Cambridge and in the Quick Laboratory; a report on work done in the experimental treatment of trypanosomiasis under the supervision of a subcommittee of the Royal Society; and reports on the work at the several colonial laboratories, which have been sent in accordance with requests made by the Secretary of State for the Colonies. In these appendices are given the full details of the investigations carried out, and of the papers published in connexion with the grants made by, and under the supervision of, the committee.

CEREBRAL ABSCESS AND BRONCHIECTASIS.

IN the *Review of Neurology and Psychiatry* for February a case is reported by Dr. Edwin Bramwell of Edinburgh which presents unusual and interesting features. A man, aged 53 years, who had suffered from bronchiectasis for more than two years, complained one day of headache and giddiness. On the following day he had an epileptic fit, preceded by a visual aura, which was likened by the patient to the sensation one might expect if a bright light from a mirror were flashed into the eyes from time to time. A second identical fit followed two days after the first. Examination revealed a right homonymous hemianopsia for white, complete in extent but only relative in degree. Further, the patient was unable to recognise a red object as red to the right of the middle line. There was no visual aphasia of any sort, nor were there any other focal symptoms. The optic discs were normal. The diagnosis of abscess in the left occipital lobe was made, but increase in the severity of the pulmonary symptoms made operation inadvisable. Death ensued six weeks after the first cerebral symptoms had appeared. At the necropsy a bilateral cellular bronchiectasis was found, with a secondary localised empyema. In addition to certain other intracranial lesions which need not be specified, an abscess of about the size of a walnut was discovered situated in the second and third left temporal convolutions, immediately anterior to the lateral occipital sulcus. Microscopical examination showed that the inflammation round the abscess had extended into the optic radiations. The interest of the case lies in the association of cerebral abscess with pulmonary disease and in the rarity of hemiachromatopsia as a symptom. The infrequency of the former of these is amply evidenced by the conclusions of the late Dr. G. I. Schorstein, who stated [1] that of 3700 necropsies at the Brompton Hospital during the years 1882 to 1904 inclusive, and of over 10,000 post-mortem examinations at the London Hospital from 1894 to 1904, there were only 19 cases of cerebral abscess associated with pulmonary disease. In his opinion, based on a consideration of further statistical data, bronchiectasis is the most frequent pulmonary antecedent of brain abscess. In the 19 cases the average duration of life from the appearance of the first cerebral symptoms was only ten days. Visual auræ in association with organic brain disease are indicative of cortical changes involving the occipito-parietal region, a subject to which attention has recently been directed by Sir William Gowers.[2] The existence of a hemiachromatopsia, coupled with a less pronounced hemianopic defect for white, is a phenomenon the exact significance of which is not yet clearly established, though it has been observed with some frequency. While it is possibly the case that the colour-blindness in the half field is due to the reduction in the light sense, hemiachromatopsia may occur by itself, sometimes when the optic tract or chiasma has been pressed on. Swanzy supports the view that a relative cortical hemianopia is a manifestation of a lesion of less intensity than that which causes cortical hemianopia, and in the present instance this interpretation of the symptom is probably correct.

ELECTROLYTIC DISINFECTANT.

SEVERAL sanitary authorities were invited on March 3rd to inspect the latest development of the plant installed at Poplar some years ago for the production of electrolytic disinfectant on a scale sufficient to supply the borough with fluid for ordinary disinfectant purposes. Considerable advances have been made since the plant was first laid down, and the present satisfactory stability of the electrolysing machine and of the fluid produced is due to the zeal and energy of the medical officer of health of the borough, Mr. F. W. Alexander. There used to be trouble with the original tanks adopted and the electrolysers, but now these have been replaced by porcelain containers which have overcome some peculiarly trying difficulties. There is an ingenious arrangement also by which the electrolysed fluid is stirred and kept uniform by electric motor paddles, and an improvement has been gained in the preparation of hydrate of magnesium, the addition of which serves to keep the electrolysed fluid perfectly stable. In Poplar the supply of current is on the three-wire system, so that one generator can be attached to the positive and the other to the negative pole, the neutral points being on the top and the "live" points below, and consequently "short circuiting" is avoided. The fluid, the disinfectant action of which depends upon the presence of active hypochlorites, is remarkably stable and is giving great satisfaction in sanitary practice. It is further an insecticide as well as a germicide and deodorant. One of the latest applications of the electrolysed fluid has been to clean the water in the swimming baths. The cost of production is comparatively small, and the improved plant works continuously without, it is said, giving any trouble.

HENOCH'S PURPURA ASSOCIATED WITH INTUSSUSCEPTION.

ONE of the most striking forms of purpura is that to which the name of Henoch has been attached. While it cannot be said that our knowledge of the etiology of the several varieties of purpura is by any means complete, the evidence at present available appears to point to the presence in the blood-stream of some toxin which, by damaging the capillary walls, leads to a localised effusion of blood. The source of these toxins is, however, not always easily determinable, but when we find that one striking variety of purpura is associated with marked intestinal symptoms, and often with definite intestinal lesions, we are justified in thinking that the bowel is, in these cases at least, the source from which the toxin has been derived. There is perhaps at the present time a certain tendency to designate as Henoch's purpura all cases of purpura manifesting intestinal symptoms, and it is not easy to draw a well-defined boundary-line so as to mark off typical cases of Henoch's purpura from other varieties of the disease. It has been shown that in a certain number of the reported cases of Henoch's purpura an intussusception has been found to be present and demonstrated by operation. In the present issue of THE LANCET appears a record of an important case which was under the care of Dr. F. W. Collinson of Preston, which is remarkable both for the association of purpura with an intussusception and also for the recovery which followed enteric resection. The patient was a child, 4 years old, who developed two attacks of purpura on the legs at an interval of a day or two, on each occasion accompanied by abdominal pain. During the second attack the pain in the abdomen was so severe that the child was taken to the Preston Infirmary, where Dr. Collinson operated and found an irreducible enteric intussusception. This was excised, and by means of two Paul's tubes the bowel both above and below the resection was fully drained. Four days after the first operation the abdominal wound was reopened and end-to-end anastomosis was performed. Complete and rapid recovery followed, and we must congratulate Dr. Collinson on his success. The treatment of an irreducible intussusception in a child is extremely difficult. Complete resection and immediate anastomosis of the ends are nearly always followed by death, when the operation is performed on a small child ; moreover, immediate anastomosis does not usually lead to rapid emptying of the large amount of accumulated fæcal matter, and any attempt to empty the distended bowel before completing the anastomosis could only serve by prolonging the operation to diminish the chances of the child recovering. We consider that the expedient adopted by Dr. Collinson was fully indicated in the circumstances, and in a matter like this each surgeon is justified in adopting that procedure which in his own opinion is best calculated to lead to the recovery of the patient. One risk of delaying the union of the bowel is the fear that wasting may result from the diminution of the absorbent area of the small intestine. This danger was obviated in the case we have quoted by the early performance of the operation of intestinal anastomosis. It is to be hoped that all cases in which intussusception is associated with purpuric eruption will be placed on record. Further, if a case of acute purpura should manifest severe intestinal symptoms the possibility of the presence of intussusception should be borne in mind, though it must not be forgotten that in cases of Henoch's purpura localised patches of œdema may occur in the intestines and give rise to the appearance of blood in the stools.

---

[1] Abscess of the Brain in Association with Pulmonary Disease, THE LANCET, Sept. 18th, 1909, p. 843.

[2] Special Sense Discharges from Organic Disease, THE LANCET, Dec. 18th, 1909, p. 1806.

IN a leading article last week we stated inadvertently that the new premises of the Royal Society of Medicine were to be situated at the corner of Cavendish-square and Henrietta-street. They are to be within a few yards of that site, at the West end of Henrietta-street on the north side, with a frontage on Wimpole-street. We are glad to hear that the building fund already amounts to £5250, and would remind our readers that £30,000 are required.

Dr. A. Howard Pirie, chief assistant in the X ray department at St. Bartholomew's Hospital, has been appointed by the council of the Röntgen Society as their delegate at the International Congress of Physio-therapy to be held in Paris at Easter.

THE report of the Inspector under the Inebriates Acts 1879 to 1900, for the year 1908 has been issued by the Home Office as a Parliamentary paper (Cd. 5044).

THREE cases of plague, with 1 death, were reported from Mauritius during the week ending March 3rd.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 10th, 1832.

FOREIGN VARIETIES.

To the Editor of THE LANCET.

SIR,—Having spent the last summer months in visiting the Parisian hospitals, I beg to communicate to you some observations that I have been enabled to make.

I am, Sir, yours,
C.F.* M.D. M.A.

* The signature has been authenticated.—ED. L.

BITTER TASTE OF QUININE.

Delicate women and children have at all times shown a dislike to bitter mixtures or pills. It has been found impossible to persuade children to take quinine; it is therefore a desideratum to know, that bark can be administered in a tasteless mixture. Cinchonine is perfectly tasteless when saturated with sulphuric acid; the bitter taste is perfectly disguised. Dr. Carron conceived the idea of applying it to practice, and has always succeeded in curing intermittent fever (the most rebellious) in children who could not be induced to take the sulphate of quinine. Put four grains of cinchonine into a spoonful of syrup, or orgeat, or other syrup, which the patient will find perfectly tasteless. Let the mouth be well rinsed; mix a glass of sugar and water, acidulated with Eau de Rabel, or sulphuric acid. The bitter mixture forms in the stomach.

H. S., aet. four years and a half, inhabiting a marshy country, attacked by a tertian. For six weeks injections of the sulphate of quinine have been used without success. The little fellow obstinately refusing to take the infusion or pills, cinchonine was administered as above, three times a day, with the happiest result; it was continued for three days after to ensure success.

SINAPISMS.

Mr. Faure, apothecary of Bourdeaux, has found that acids rather diminish than augment the irritating action of mustard, by preventing the formation of its volatile oil, which constitutes its virtue. This oil does not pre-exist in the flour of mustard; water is a necessary element to its formation. Sinapisms must then be prepared with water instead of vinegar, to render them active. M. Trosseau, who attends at the Hotel-Dieu for M. Recamier, has long observed the above action, but was ignorant of the cause.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Georg Jochmann, Director of the Department for Infectious Diseases in the Rudolf-Virchow Hospital, and Dr. Franz Müller, *privat-docent* of Pharmacology, have been granted the title of Professor.—*Breslau:* Dr. Freiherr von Pirquet, who was formerly in Vienna and is now Professor in Baltimore, has been appointed Professor of Children's Diseases in succession to Professor Czerny.—*Freiburg:* Dr. Hans Schelble has been recognised as *privat-docent* of Children's Diseases.—*Dorpat (Yurieff):* Dr. Landau has been recognised as *privat-docent* of Anatomy.—*Genoa:* Dr. Ernesto Bozzi has been appointed Extraordinary Professor of External Pathology.—*Jena:* Dr. Martin Zade has been recognised as *privat-docent* of Ophthalmology, Dr. Wilhelm Brüning as *privat-docent* of Otology and Laryngology, and Dr. Thiemann as *privat-docent* of Surgery.—*Kharkoff:* Dr. V. I. Chagovets of Tomsk has been appointed Extraordinary Professor of Pharmacology.—*Marburg:* Dr. A. Bauereisen has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Modena:* Dr. Lugaro, Extraordinary Professor of Neurology and Psychiatry, has been promoted to an Ordinary Professorship.—*Rome:* Dr. Eugenio Cassini has been recognised as *privat-docent* of Surgery.—*Strasburg:* Dr. A. von Lichtenberg has been recognised as *privat-docent* of Surgery.

MUNIFICENT GIFT TO THE UNIVERSITY OF LIVERPOOL.—On March 5th Mr. W. H. Lever, who has succeeded the late Sir Alfred Jones as chairman of the Liverpool School of Tropical Medicine, gave a luncheon at his residence, Thornton Manor, Cheshire, which was rendered memorable by an announcement that he had made a gift, representing a cash value of £102,000, to various branches of activity associated with the University of Liverpool. Mr. Lever, in a speech of welcome to his guests, said that having been appointed chairman of the School of Tropical Medicine he would do all he could to further the interests of the school. There could be no nobler idea than to make the tropics into a white man's country. Mr. Lever alluded to the fact that late last summer Lever Brothers completed the final settlement of the last action against the *Daily Mail* and other newspapers controlled by certain people in London. The result was that Lever Brothers secured £91,000 in damages. He told his solicitor at the time that he never intended that any of the money should go to himself. He had now got this money and had been looking around to see what he could do to get rid of it, and he thought of the University. Arrangements had been made with the owners of the old Bluecoat School at the rear of the pro-Cathedral for a lease for a number of years. During that time the University could have the option of purchasing the school for approximately £24,000. At any time when the University declared that it would exercise that option he would pay the money. If the school was not found suitable, or for any reason the University decided not to exercise that option, then he would pay £24,000 to build a structure adjoining the University in which certain faculties could be accommodated. In the meantime, while the Council of the University was considering whether it should exercise the option, he would pay the rent of the school. In addition to that he desired that three things with which he had been associated in connexion with the University should have some money found for them. In regard to the School of Tropical Research, that was going to be dealt with in some other way; at any rate, changes were taking place which enabled them to lay that on one side. There were the School of House and Town Planning, the School of Tropical Medicine, and the School of Russian Studies. It is interesting to know that the School of Tropical Medicine will benefit to the extent of £800 a year from the munificence of its chairman.

THE REFORM OF POOR-LAW MEDICAL RELIEF.[1]

BY C. THACKRAY PARSONS, M.D. LOND.,
MEDICAL SUPERINTENDENT, FULHAM INFIRMARY.

[THE first section of Dr. Parsons's paper was devoted to showing how great a proportion of pauperism is due to physical and mental incapacity, as many as 60 per cent. of the paupers under relief in England and Wales in January, 1908, having been found to be unable to earn their own living on that account. Besides those actually disabled by ill-health, those dependent upon them also became destitute through their afflictions, which accounted for a great deal more of the total pauperism. Dr. Parsons proceeded to describe the various methods in which the Poor-law gives medical relief, and in speaking of the increasing number of paupers who are treated in institutions he mentioned that 10·38 per cent. of all the deaths in the country in 1908 occurred in workhouses and workhouse infirmaries as against an average of 7·67 in the decade 1893–1902. He continued as follows :—]

It is obvious from a consideration of the effect sickness has in producing permanent incapacity and pauperism that it is to the interest of the community to ensure that medical relief, once it has been decided to give it, should be of such a character as to restore the individual as quickly as possible and as completely as possible to a wage-earning capacity. Judged from this point of view, the medical relief provided by Poor-law authorities, both in rural and urban districts, and even in its best form, that of the separate infirmary, has many and most serious defects. Without wishing to minimise these defects in the slightest—and I shall return to them in detail shortly—it is only fair to point out that the Poor-law authority has made some attempt at least to make provision for the treatment of the sick poor in every parish throughout the length and breadth of England and Wales. In this respect it stands in happy contrast with the sanitary authorities, so many of whom have grossly neglected their duties in the cognate work of the prevention of sickness and of the treatment of infectious disease. It is a curious fact that the Minority Commissioners, in their trenchant criticism of the Poor-law medical system, have done less than justice to the boards of guardians, whilst they have praised altogether too highly the work of the sanitary authorities. It is unfair to compare the few energetic sanitary authorities not with the few and energetic Poor-law authorities, but with the general mass of them. Over half the superficial area of England and Wales the rural district councils are both sanitary and Poor-law authority. And, inefficient as is the provision these councils have made for their sick poor, they have neglected still more their sanitary work, and have made absolutely no provision for isolation hospitals for the treatment of patients suffering from infectious disease,[2] obviously one of their most elementary duties. But, what is even more extraordinary is that, even in London and the large provincial towns where the public health service is most efficient, the sanitary authorities, with very few exceptions, have failed entirely to make any provision for the hospital treatment of phthisis, measles, whooping-cough, chicken-pox, puerperal fever, epidemic diarrhœa, erysipelas, and venereal disease—infectious diseases which directly caused more than 13 per cent. of the total number of deaths in 1908. They have equally failed to provide for the treatment of such contagious diseases as ringworm, ophthalmia, and scabies. In the case of all these diseases practically the only provision made for isolation has been made by the Poor-law authority, and patients suffering from them are often sent into the infirmary simply to prevent the spread of the infection to others. In the case of whooping-cough, measles, epidemic diarrhœa, and venereal diseases most sanitary authorities have not even taken the trouble to make them notifiable. Up to last year the same statement would have been true of phthisis, and it is interesting to note that long before most sanitary authorities interested themselves in phthisis, the medical officers of Fulham, St. Marylebone, and other London infirmaries were isolating their phthisical cases, and issuing leaflets to them, laying stress upon the infectiousness of the disease, the necessity of fresh air for its treatment, and the best methods to prevent the spread of the infection. Another curious fact is, that the authority which has dealt most efficiently with the hospital treatment of scarlet fever, diphtheria, enteric fever, ringworm, and ophthalmia, and the methods and hospitals of which have formed models for sanitary authorities to copy—viz., the Metropolitan Asylums Board—is a Poor-law authority. It is quite incorrect therefore to say, as the Minority Commissioners do, that the Poor-law medical service takes no thought for the prevention of disease. Even the ordinary clinical work of the Poor-law is in one sense preventive. The treatment of rheumatic fever, and the operative treatment of adenoids, varicose veins, and hernia—to take only a few examples—are directed as much to the prevention of future incapacity as to the relief of present suffering. It is unnecessary to labour the point further, and to draw attention to the gross neglect of sanitary authorities to carry out the duties laid upon them by the various Acts dealing with public health, or to the annual complaints in the report of the medical officer of the Local Government Board of the neglect of sanitary matters on the part of sanitary authorities and their officers, or to the inefficiency which springs from the fact that most medical officers of health are dismissible at the will of the local authority, a disability which does not apply to the Poor-law medical officer. Enough has been said to show that, with all its defects, the medical work of boards of guardians is better provided for and carried out than the medical work of sanitary authorities.

Nevertheless, the defects of the Poor-law medical service are many and grave. Firstly, both the Majority and Minority Reports draw attention to the fact that in too many cases patients do not seek or do not obtain medical relief until they have reached a stage when cure can no longer be expected. Many of the chronic cases in infirmaries and workhouses, now a permanent charge upon the community, might have been restored to a wage-earning capacity if they had received efficient medical treatment in the early stages of their illness.

Secondly, the service suffers from the fact that it is underpaid and understaffed. Several of the witnesses before the Royal Commission laid stress upon this. Mr. A. Fuller in his evidence says : "It is undeniable that the majority of medical officers, in or outdoor, are paid salaries miserably inadequate."[3]

Thirdly, the provision for the institutional treatment of the sick is often insufficient for their proper treatment. It will be convenient to consider this provision, firstly, in the small rural workhouses, and secondly, in the larger workhouses and separate infirmaries.

The provision for the sick in many of the rural workhouses seems to be extremely bad. Dr. J. C. McVail visited 16 such workhouses for the Royal Commission on the Poor-laws, and his report is a grave indictment of the condition of things he found in them. How many of the sick in workhouses are being treated under the unsatisfactory conditions he describes it is impossible to say. In 11 of 34 sick wards in rural workhouses he found the cubic space per bed definitely lower than the already low standards prescribed by the Local Government Board; in one case the allowance was only 269 cubic feet per bed. In at least 5 out of 14 rural workhouses the hot-water supply was more or less defective, a state of things which renders the proper administration of sick wards practically impossible. In other cases the arrangements for bathing and ventilation were inadequate or inconvenient. The most serious complaint against these rural workhouses depends, however, upon the inadequacy of the arrangements made for the medical treatment and nursing of the sick. The medical work is performed by a visiting medical officer, who, as in the case of the district medical officers, is usually underpaid, and has to provide all the drugs he uses out of his already inadequate salary. Dr. McVail points out that there is no provision of medical appliances or of instruments or appliances for operations in these workhouses.[4] The natural result here, as in the case of the district medical officer, is, according to the evidence given by the Local

---

[1] Part of a paper read at the Central Poor-law Conference at the Guildhall, London.

[2] Report of Royal Commission on the Poor Laws, p. 858.

[3] Royal Commission on the Poor-laws, App., vol. ia., p. 444 (25).

[4] Dr. McVail's Report, App., vol. xiv., p. 27.

Government Board inspectors and others, that the sick inmates do not receive the medical supervision and treatment which they require. Dr. McVail states that the nursing staff was insufficient in the majority of the rural workhouses he visited.[5] This statement is borne out by the evidence and reports of the Local Government Board inspectors. The serious nature of this condition of things is enhanced by the fact that in most of these rural districts no provision for the isolation of infectious cases has been made, and the provision of voluntary hospitals is quite inadequate. The Minority Commissioners say that this state of affairs, with its attendant preventable suffering and its potentialities for the creation of permanent incapacity and pauperism, exists over nearly half the superficial area of England and Wales.[6]

In some urban districts the condition of the sick wards in the workhouses is very little, if any, better than that of those in rural districts. Taken as a whole, however, there is a very great improvement, which reaches its highest development in the separate infirmaries of London and a few provincial towns. These separate infirmaries are so important a development, hold out so much promise of good, and present so many points for criticism, that it will be necessary to consider them in some detail. In some of them the arrangement and equipment of the wards are nearly all that could be desired, being better than in many of the older voluntary hospitals. Individual boards of guardians are, indeed, deserving of the highest praise for the courage which has led them to incur the heavy initial expense necessary to build and furnish a hospital in accordance with modern views of what is required in construction and equipment. Such praise is all the more their due because their enlightened action has often been the grounds for an outburst of abuse and ignorant criticism by the press. The only objection of any weight to these buildings is that, under present circumstances, they contain many chronic and incurable cases which could be treated quite as well in simpler buildings. Their value in the treatment of acute cases is, however, sufficient justification for their erection. It would appear to be an axiomatic proposition that if the community is to provide for the treatment of the sick poor it should devote its money chiefly to energetic treatment of those cases in which there is reasonable prospect of restoration to health, whilst reserving for incurable cases only such accommodation as is necessary to render their lot as comfortable as is possible. Yet the London newspapers covered the Hammersmith guardians with abuse for providing a modern hospital at a cost of £350 per bed for the treatment of patients, most of whom were curable under good conditions, whilst they chronicled without comment or with praise the fact that the Metropolitan Asylums Board had provided an asylum for imbeciles and dements, nearly all of whom were incurable, at a cost per bed approximately the same.

Unfortunately, however, all the separate infirmaries do not exhibit the same high standard of construction and equipment. In some, and especially in some of the older ones, one finds too often many sanitary defects, such as old and worn wooden floors with wide crevices between the planks, painted or distempered brick walls, the irregular surface of which it is impossible to keep free from dust, insufficient heating, ventilation, or lighting, and an absence of proper linen cupboards, of day-room accommodation for convalescent patients, and of proper bed-pan flushing sinks, &c. Some of them do not possess an operating theatre, and although in all of them all drugs and medical appliances are supplied by the guardians, often without any discussion on the simple requisition of the medical superintendent, still some are deficient in modern appliances necessary for exact diagnosis or for special forms of treatment. A table in Dr. McVail's report shows how individual infirmaries vary in this respect. In connexion with all such comparative tables it should be remembered that even in London the infirmaries vary very much in the character of the cases they contain. Some have far more senile and chronic patients and fewer surgical cases than others. For instance, in 1906 the number of deaths per 100 occupied beds varied from 20 at the City of London Infirmary to 129 at Fulham, whilst the average duration of each patient's stay was 113 days at the former infirmary and 40·4 at the latter.

I have prepared the following table showing how many of 28 metropolitan (including West Ham) and of 7 provincial Poor-law infirmaries possess certain appliances and arrangements necessary for treatment and diagnosis:—

Metropolitan infirmaries.	Operating theatre.	Open-air wards for phthisis.	X ray apparatus.	Radium applicator.	Electric bath.	Apparatus for faradism and galvanism.	Bacteriological laboratory.	Finsen lamp or similar appliance.	Milk steriliser.*	Apparatus for medical gymnastics.	Incubator for infants.
Camberwell	+	+	+	—	+	+	+	+	+	—	—
Fulham	+	+	+	—	+	+	—	—	—	+[1]	+
Lewisham	+	+	+	—	+	+	+	—	+	—	—
St. Marylebone ...	+	+	+	—	—	+	+	—	+	+[2]	—
West Ham	+	+	+	—	—	+	—	+	+	—	+
Islington	+	+	+	—	—	+	+	—	—	—	—
Kensington	+	+	—	—	—	+	+	—	+	—	—
Poplar and Stepney Sick Asylum ...	+	+	—	—	—	+	+	—	+	—	—
St. George's-in-the-East	—	—	+	+[3]	—	+	—	—	+	—	+
Chelsea	—	+	—	—	—	+	+	—	+	—	—
Hammorsmith ...	+	+	+	—	—	—	+	—	—	—	—
Lambeth	+	+	—	—	—	—	+	—	+	—	—
Paddington	+	+[4]	—	—	—	+	—	—	+	—	—
Southwark	+	+	—	—	—	+	+	—	—	—	—
St. Pancras, South...	+	—	+	—	—	+	+	—	—	—	—
Bermondsey	+	—	—	—	—	+	+	—	+	—	—
Shoreditch	+	—	—	—	—	+	+	—	+	—	—
Bethnal Green ...	+	—	—	—	—	+	+	—	—	—	—
St. Pancras, North	+	+	—	—	—	—	+	—	—	—	—
Woolwich	+	—[5]	—	—	—	+	—	—	+	—	—
Wandsworth	+	—	—	—	—	+	—	—	+	—	—
Woolwich	—	+	—	—	—	+	—	—	+	—	—
Central London Sick Asylum	+	—	—	—	—	—	—	+	—	—	—
City of London ...	+	—	—	—	—	+	—	—	—	—	—
Greenwich	—	—	—	—	—	+	+	—	—	—	—
Holborn	+	—	—	—	—	—	—	—	+	—	—
Mile End	—[6]	+	—	—	—	+	—	—	—	—	—
St. George's Hanover-square ...	+	+	—	—	—	—	—	—	—	—	—
Total—28 infirmaries	23	17	9	1	3	22	16	3	16	2	3

* In some infirmaries the milk for the infants is bought ready sterilised.

Remarks.—[1] Plinth and rib-stooi. [2] Boards for Frenkel's exercises. [3] On loan. [4] For males only. [5] Now building. [6] Operating theatre in contemplation.

Provincial infirmaries.	Operating theatre.	Open-air wards for phthisis.	X ray apparatus.	Radium applicator.	Electric bath.	Apparatus for faradism and galvanism.	Bacteriological laboratory.	Finsen lamp or similar appliance.	Milk steriliser.	Apparatus for medical gymnastics.	Incubator for infants.
Bristol (Eastville) ...	—	—	—	—	—	+	—	—	+	—	—
Bradford	+	—[1]	+	—	—	+	+	—	+	—	—
Birmingham	+	—[2]	—	—	—	+	+	+	—	—	—
Liverpool	+	+	+	+	+	+	+	+	+	—	—
Manchester	+	—	—	—	—	+	+	—	—	—	—
Nottingham	+	+	—	—	—	+	+	—	+	—	—
Sheffield	+	+	—	—	—	+	+	—	+	+	+
Total—7 infirmaries	6	3	2	1	1	7	6	2	5	1	1

Remarks.—[1] Sanatorium at Eastby. [2] Few beds on balconies.

It will be seen that great differences exist in the equipment of individual infirmaries, and the difference is even greater than the table indicates. In some cases, for instance, the operating theatre, the phthisical wards, and the bacteriological laboratory are excellently arranged and equipped, whilst in others the arrangements are more primitive and less satisfactory. The most striking points about the tables are that five of the London infirmaries still possess no operating theatre, 11 of them no open air wards for phthisis, and 12 of them no bacteriological laboratory. It is curious, too, how few have an X ray apparatus, and how few have any apparatus for electric baths, or for regulated exercises, especially when it is remembered how many cases of chronic nervous disease and chronic joint disease, capable of benefiting by such methods of treatment, are found in these infirmaries. Very few also (I have no exact figures) possess any means of giving massage, radiant heat, or hot air treatment to such cases. The reason is to be found in the fact that the London infirmaries are so understaffed, both as regards medical men and nurses, that it is difficult to carry out the ordinary ward work, and there is no staff available for these special methods of treatment.

---

[5] Idem, p. 28.

[6] Report of the Royal Commission on the Poor-laws, p. 858.

The following table shows the medical and nursing staff in most of the London infirmaries and the number of beds :—

Infirmary.	Number of beds.	Medical staff.	Nursing staff (excluding matrons and assistant matrons).	Number of beds in Infirmary to each member of medical staff.	Number of beds in Infirmary to each nurse.	Other work done by medical staff.
Bethnal Green ...	669	4	89	167·5	7·5	Workhouse, 1430 beds.
Bermondsey	640	3	71	213·3	9·0	—
Camberwell	828	6	128	138·0	6·4	Workhouse, 867 beds; Children's Homes, 538 beds.
Sick Asylum, Cleveland-street	264	2	32	132·0	8·2	—
Chelsea	423	3	53	140·0	7·7	Workhouse, 1015 beds.
City of London ...	511	2	53	255·5	9·6	Workhouse, 511 beds.
Fulham	500	4	70	125·0	7·1	Workhouse, 727 beds; Children's Home, 80 beds.
Hackney	641	3	72	213·6	8·9	Workhouse, 1401 beds; Children's Home, 137 beds.
Holborn	613	3	62	204·5	9·8	—
Hammersmith ...	400	3	49	133·3	8·1	Workhouse, 520 beds.
Islington	800	3	113	266·6	7·0	—
Kensington	667	3	72	222·3	9·2	Workhouse, 1284 beds.
Lewisham	401	3	50	133·6	8·0	Workhouse, 543 beds; Children's Home.
Lambeth	679	5	88	135·8	7·7	Out-Relief Districts, 1–4.
Mile End	469	2	48	234·5	9·7	Workhouse, 502 beds.
Poplar and Stepney Sick Asylum ...	770	4	96	192·5	8·0	—
Paddington	284	3	35	94·6	8·1	Workhouse, 670 beds.
Southwark	786	4	100	196·5	7·8	—
St. Marylebone ...	744	3	79	248·0	9·4	—
St. Pancras, North	542	3	73	180 6	7·4	—
St. Pancras, South	400	3	50	133·3	8 0	Workhouse, 1583 beds.
West Ham	741	4	107	185·2	6·9	—
Wandsworth	667	4	92	154·5	7·2	—
Woolwich...	304	2	40	152·0	7·5	Workhouse, 619 beds; Children's Home, 38 beds.
Whitechapel	590	3	44	196·6	13·4	Workhouse, 755 beds; Children's Homes.
Shoreditch	515	3	56	171·6	9·0	Workhouse, 792 beds.
St. George's-in-the East	394	2	39	197·0	10·1	Workhouse, 768 beds.

In comparison with these figures it may be noted that in the large London hospitals the average number of beds to each nurse varies from 2·0 to 2·6. It is often urged as a justification of the small nursing staff at Poor-law infirmaries, as compared with voluntary hospitals, that the number of chronic cases in the former makes a large nursing staff unnecessary. This argument is unsound. Bedridden and helpless senile, paralytic, and rheumatoid arthritic cases, such as occur so frequently in infirmaries and are never kept in hospitals, require much more nursing than any ordinary acute case. Again, much of the work that is performed by the students in hospitals has to be carried out by the nurses in infirmaries. As to the inadequacy of the medical staff, the table speaks for itself. It is obviously impossible for one man to examine and treat in accordance with modern methods 150 to 200 patients. No one familiar with the elaborate methods of diagnosis and treatment modern research has placed in the hands of medical men can doubt that this understaffing leads to the detention of patients for an unnecessary length of time and to some of them receiving inadequate treatment. This understaffing has another serious consequence in that it renders it extremely difficult for the most energetic medical officer to keep in touch with the rapid advances now taking place in medical science. Yet any failure to do so must result in serious consequences to the patients entrusted to his care. It is an extraordinary fact that notwithstanding the greatly increased range and complexity of a medical man's work to-day as compared with 30 years ago, the indoor Poor-law medical officer is actually expected to look after more patients to-day than he did then. The following table shows this[1] :—

—	1875.	1907.
Poor-law medical officers in workhouses and infirmaries (England and Wales) ...	747	1,016
Number of indoor paupers Jan. 1st	156,000	282,000
Number of indoor paupers to each medical officer	209	277

But understaffing is not the only evil from which the indoor medical service suffers. Like the outdoor medical service it suffers from the inadequacy of the salaries paid. It is obvious that in the case of separate infirmaries their efficiency and their economical administration depend very much upon the medical superintendent. If the patients are not to suffer, he should be a man with wide knowledge of and experience in his profession, and with special skill as an operative surgeon, and if efficiency is to go hand in hand with economy, as should be the case, he must be a man of exceptional administrative skill. To attract such men the salaries should be such as to compare favourably with those paid to similar officers under the Metropolitan Asylums Board and the London County Council. Unfortunately, such is not the case. The salaries paid to medical men in the infirmary medical service are almost invariably considerably less. It is depressing to the whole service to find one London board of guardians appraising the value of its medical superintendent at £300 per annum—a salary less than that of the senior assistant medical officer at the fever hospitals of the Metropolitan Asylums Board and at the asylums of the London County Council. A pernicious system has arisen by which the medical superintendent is remunerated partly by salary and partly by extra fees, the most important of which are the fees derived from the examination of lunatics. These fees vary very greatly with the different infirmaries, so that of two medical superintendents receiving the same nominal salary, one may be receiving, by the addition of extra fees, an adequate remuneration whilst the other is greatly underpaid. The position of the senior assistant medical officer, whose post is a most important one as he takes charge of the infirmary in the absence of the medical superintendent, is even worse. His salary is inadequate, he is not allowed to marry, and his chances of promotion are extremely small and depend more upon influence and chance than anything else. The consequence is these posts are, as a rule, held by young and inexperienced men, the best of whom naturally leave the service after two or three years' tenure of office.

In considering the medical staff of the Poor-law infirmaries, one thing which strikes one at once is the absence of any specialist staff such as is possessed by the voluntary hospitals. As a rule the medical superintendent specialises in some branch of medicine or surgery, usually being forced from the exigencies of his position to devote himself to operative surgery, and, not infrequently, the assistant medical officers take up some specialty, but it is obvious that this is a very imperfect solution of the problem. Some provincial boards attempt to meet the difficulty by staffing the infirmary with junior medical officers and appointing one or more visiting physicians and surgeons. This system in no way meets the requirements of the case and possesses many serious disadvantages. Its advocates claim for it that it reproduces at the infirmary the same system of medical attendance as has proved successful at the voluntary hospital. This is not the case. The visiting physician or surgeon at a hospital, in charge usually of 35 or 40 beds, knows every one of his cases, diagnoses, and directs the treatment of each. In the case of a Poor-law infirmary with 1000 beds or more, and a visiting staff attending for a couple of hours on alternate days, as is the rule, this is a physical impossibility. The treatment of practically all the cases is in the hands of the assistant medical officers, who are usually recently qualified and inexperienced men, and the visiting staff can see and advise on only a very small proportion of the patients. A physician or surgeon with hospital appointments and a private practice simply has not the time to give for the proper supervision of a large infirmary as well. Many other disadvantages arise from the absence of a resident medical superintendent of age and experience with a permanent interest in the infirmary and a sense of responsibility.

---

[1] Public Health and Social Conditions (Blue-book), p. 57.

It has been suggested that a solution of the difficulty would be found in arranging that the voluntary hospitals should take all acute and curable cases and the Poor-law infirmaries all the chronic and incurable cases. The simplest answer to that is, that the voluntary hospitals have not enough beds to treat even the acute and curable cases which go to them at present. Their beds are always full, patients often have to wait days, and sometimes weeks, before a bed can be allotted to them, and cases which cannot wait are often sent on to the nearest Poor-law infirmary for treatment. Cases of burns, of appendicitis, of pelvic inflammation, of miscarriage, of cellulitis and erysipelas, of cut throat, of stricture, of fractured legs, pneumonia, acute bronchitis, meningitis, &c., have all been sent to my own infirmary from voluntary hospitals owing to this want of beds. In London the accommodation of the voluntary hospitals would have to be about doubled to enable them to take over the acute cases from the infirmaries. The cost of this alone would be enormous. Necessarily, since the guardians would have to pay for their cases, it would be their duty to insist upon some share in the administrative control of the hospitals, and the medical staff would insist upon being paid for their work for the guardians. Under such circumstances the hospitals would lose their voluntary basis and become State-aided hospitals. There may be two opinions as to the desirability of such a change, but there can be hardly any doubt that the time is not yet ripe for it.

The only practical solution of the problem—and the time has arrived when a solution must be found if the Poor-law patient is to be adequately, and therefore economically, treated—involves the enlargement of the present areas of Poor-law administration. The cost of equipping and staffing the special departments necessary would be prohibitive for single boards of guardians, and the number of patients in each union would be insufficient to justify it. With enlarged areas the cost would be reduced to a minimum and the whole of the Poor-law patients could be adequately treated without the expenditure of much money on new buildings. To take London as an example of what could be done. With the unification of the parishes and unions of London it would be possible to arrange a very complete system of classification of the sick contained in the infirmaries, fever hospitals, lunatic asylums, and workhouses. Some of the workhouses and older infirmaries could be used for the treatment of the senile and infirm class and of chronic incurable cases, including quiet dements, not requiring much medical treatment or nursing. The relief given to the asylums in this way would obviate for many years the building of new ones. The better infirmaries could be used for the treatment of acute and curable cases. Expenditure could thus be concentrated upon those who would benefit by and repay it most. At certain of these infirmaries wards could be devoted to, and properly equipped for, the treatment of special diseases.

It should be a condition of the appointment that the medical superintendents of these acute infirmaries should be men with wide general medical knowledge and experience who had specialised in either general medicine or surgery. In addition there should be a small number of specialists, devoting their whole time to the work, and recruited, if possible, from the service, each of whom would have charge of wards devoted to his specialty in some one or other of the acute infirmaries. It would be possible to send appropriate cases to these wards from other infirmaries, and in addition the services of such specialists should be available at any infirmary for cases it might not be desirable or necessary to transfer. The operative work at infirmaries where the medical superintendent was a physician could be done by one of the surgical medical superintendents, and *vice versâ*. It would probably be convenient to have a general physician and surgeon on the central body of specialists which would include also at least an ophthalmic surgeon, a surgeon for the ear, nose, and throat, a gynæcologist, a radiographer, and several dentists. In addition, whilst every acute infirmary should have a small laboratory for clinical pathological, and bacteriological work, it would be necessary to have a central laboratory with a skilled staff for special investigations. Other directions in which the specialisation of institutions would be found advantageous and economical suggest themselves at once. It would be easy to adapt one or more of the infirmaries to receive measles, whooping-cough, and chicken-pox, thus ridding the other infirmaries of diseases which it is so difficult to isolate properly in them; another might receive all maternity cases; a third might be utilised to receive all nervous cases; a fourth all gouty, rheumatic, and similar joint cases; a fifth all skin cases; and special arrangements would be made naturally for phthisis.

The great point is that the immense gain in efficiency which would result from this specialised treatment of different diseases could be brought about by the utilisation of existing buildings. In many cases no structural alterations would be needed; in others small adaptations would meet the whole necessities of the case. Though this system of classification and of specialism would be most easily worked in London on account of the concentration of an immense population in a small area, there would be no difficulty in arranging a similar scheme in the large provincial towns. In the rural districts it would be possible to convert one or more of the existing institutions into acute infirmaries as might be required. In many of these areas it would not be necessary to have a specialist whole-time staff, but arrangements could be made to call in specialists as required, or, in some districts, to transfer the case to London or to some other large town, where a Poor-law specialist staff was available. Other advantages of this enlargement of Poor-law areas would be that it would make for a more uniform treatment of the sick poor. Some areas would be better administered and equipped than others, but throughout each large area there would be a general uniformity of treatment, and, there can be no doubt, a general levelling-up of the worst institutions to the best in the area. There would also be a removal of the anomaly which exists now of some infirmaries and workhouses being overcrowded whilst neighbouring ones are not full.

[Dr. Parsons proceeded to discuss the question of what body is best suited to take over the administration of Poor-law medical relief and advanced arguments in favour of its concentration under one committee of the county council, which should also have control of the public health and lunacy work of the county and which would coördinate the work of the medical officers of health, the district medical officers, and the infirmary medical officer. He continued:—]

Under these conditions there will grow up in each county a large public medical service, which, if it is properly staffed, paid, and graded, with promotion occurring according to merit, and with inducements held out to its members to specialise, will attract ambitious and keen men to it.

Lastly, the clerk to the new medical committee of the county council or of the new county body should be a medical man chosen from amongst the senior men of the service. So many medical points would come before such a committee that no one else would be competent to advise it.

A medical man in this position would be able to save the committee many costly mistakes. The lines, then, upon which I think the Poor-law medical service should advance are: 1. The encouragement of the sick poor to seek medical aid at the earliest possible moment. The applicant for medical relief should be able to go straight to the Poor-law medical officer, and the necessary inquiry into his suitability for the receipt of medical treatment at the public expense should be considered afterwards. 2. The provision of all drugs and medical and surgical appliances by the Poor-law authority. 3. The increase of the attractions of the Poor-law medical service by increasing its emoluments and by encouraging its members to specialise. 4. The improvement and specialisation of existing institutions and their staff. 5. The enlargement of the present Poor-law areas to enable these improvements to be carried out economically. 6. The coördination of the Poor-law medical service, the asylum service, and the public health service under one body.

THE RECENT MALARIA CONFERENCE IN SIMLA.

WE published last week an abstract of a circular letter addressed by the Secretary to the Government of India to the secretaries to the Provincial Governments covering the official report of the proceedings of the Imperial Malaria Conference held at Simla in October, 1909. We now publish the resolutions and recommendations made by the Conference and printed at the end of the official report.

I.—SCIENTIFIC INVESTIGATIONS.

1. That the Conference is much impressed with the need of further knowledge of the following subjects and recommends that steps be taken without delay for their systematic investigation :—1. The distribution of malaria. 2. The epidemiology and endemiology of malaria including (*a*) meteorological and physiographical conditions, and (*b*) the life-history of malaria-bearing mosquitoes. (3) The physiological and therapeutical action of quinine and other remedies for malaria.

2. A critical examination of the vital statistics of each province should be undertaken with the object of ascertaining the different degrees of prevalence of malaria and the areas which may be regarded as typical for the purpose of further test and investigation. In this connexion the Conference invites attention to the researches conducted by Captain Christophers in the Punjab.

3. Vital statistics are now collected by villages and are compiled by areas such as *thanas* and *taluks* which are often so large as to obscure the true distribution of malaria. The Conference are of opinion that local governments should provide for compilation by some smaller units, such as villages, village unions, *zails*, patwari's circles, &c. The figures thus compiled need not be published, but should be kept on record at convenient centres.

4. The Conference considers that the existing vital statistics of provinces will throw much light on the distribution and relative prevalence of malaria if the figures for fever are corrected by the results of test inquiries in selected typical areas. Such test inquiries should be carried out in every province by a special staff under careful supervision.

5. Where investigations into the epidemiology and endemiology are undertaken, special attention should be paid to tracts in which malaria is not endemic with the object of discovering the reasons why such localities are free from the disease.

II.—AGENCY BY WHICH INVESTIGATIONS SHOULD BE MADE.

1. The Conference having learnt that the Government of India will appoint a Central Scientific Committee to direct and coördinate investigations, and that they will also appoint at the request of local governments or on the recommendation of the Central Committee officers to carry out investigations, recommends that a local organisation to work in consultation with this Central Committee be constituted in each province. The nature of such organisation should be settled by the local government, and may take the form of the Sanitary Board.

2. A Conference consisting of the members of the Central Committee and a delegate from each local organisation should be held annually at such place as may be convenient for the purpose of reviewing the work done and preparing a programme of future work.

III.—PRACTICAL MEASURES.

A.—Extirpation of Mosquitoes.

1. As the extirpation of the anopheles mosquito is obviously the most complete and satisfactory solution of the malaria problem the Conference recommends that investigations be continuously carried on with the object of ascertaining by what methods this can best be done at a cost which is not prohibitive.

2. The Conference makes the following recommendations regarding the measures for extirpation or reduction of mosquitoes which have been placed before them :—

(1) *Drainage :* (*a*) In urban areas where the existing surface drains are found to be the chief breeding place of anopheles mosquitoes, a properly graded surface drainage is a most important antimalarial measure. (*b*) Though in rural areas the construction of any system of masonry drains is impracticable on account of the cost, yet it is advisable to improve the surface drainage in malarious localities by removing obstructions and filling up depressions in which water stands and anopheles mosquitoes are known to breed. (*c*) Both in villages and towns the lowering of a high subsoil water level when practicable is an antimalarial measure of primary importance. The deliberations of the Conference have shown that it will not be possible to protect rural areas by any scheme of drainage which is financially practicable, but it has been found that in some highly malarious tracts the level of subsoil water has been materially lowered with great permanent benefit by drainage operations, the cost of which was not prohibitive. Similar schemes should be investigated in each province for highly malarious localities. (*d*) The Conference is unable to make any general recommendation regarding the prohibition of wet cultivation in close proximity to dwelling houses, for while there is evidence of good results having been obtained by that measure in some localities, there is also clear evidence that malaria is in no way a necessary consequence of irrigating land near towns and villages. Every case of the kind requires separate investigation. When it is established that malaria in a town is due to anopheles mosquitoes breeding in wet cultivation in the immediate vicinity, such cultivation should be prohibited or restricted whenever possible. (*e*) In Italy some success has been attained in filling up marshes by turning rivers on to them and thus reclaiming them by successive deposits of silt, and the Conference draws attention to this method. (*f*) The clearance of jungle and the thinning of over-dense tree growth are desirable in all places in the neighbourhood of habitations where these conditions impede drainage and shelter mosquitoes.

(2) *Oiling.*—Treatment with petroleum should be restricted to small collections of water which contain the larvæ of anopheles mosquitoes, and cannot be filled up or drained.

(3) *Fish.*—It should be ascertained by inquiry and experiment whether the breeding of anopheles mosquitoes is greatly checked by the presence of fish in tanks and other collections of water; and if this is found to be the case endeavours should be made to introduce suitable fish where their presence is likely to prove beneficial, and to afford protection to them where they exist.

B.—Quinine Treatment and Prophylaxis.

1. The Conference adopts the conclusions of the subcommittee regarding the quantity of quinine required (i) for treatment of malaria, and (ii) as a prophylactic. (*a*) Quinine should be given in the form of sulphate or hydrochloride for adults; (*b*) for children some palatable form, such as tannate, is recommended.

2. Generally speaking, the method of selling quinine by treatments is to be preferred to that of selling by the dose, but in order to meet the wants of the poor it is advisable that both systems should be maintained. It is suggested that the ordinary size of the tablet should be one of 5 grains, which is the proper prophylactic dose for adults.

3. The agency for the sale of quinine should not be limited to postmasters, but the services of all grades of officials should be utilised; special attempts should be made to induce private vendors to engage in the business; and the educated classes should be asked to organise means of spreading a knowledge of quinine among the lower classes. The rate of commission should be liberal.

4. In order to disseminate a knowledge of quinine as widely as possible, recourse may properly be had to moveable camps, itinerant dispensaries, leaflets, notices and advertisements, especially in the vernacular papers, and to teaching in all grades of schools.

5. The free distribution of quinine should as a rule be resorted to only in the case of severe epidemics. This rule will be open to exceptions at the option of local governments, especially in backward tracts where quinine is unknown, and in the case of school children in malarious tracts and during the malaria season for prophylactic purposes, provided that arrangements can be made to secure that the quinine is actually taken.

6. General measures of quinine prophylaxis, such as the sale of Government quinine by all available agencies and the dissemination of a knowledge of the benefits it confers, should be carried out as widely as possible. More specialised and expensive methods, such as moveable camps and the distribution of free quinine to adults and children, should ordinarily be confined to selected areas.

7. The Conference is informed that the maximum output of the Indian factories is limited to 100,000 pounds of sulphate of quinine, which would be sufficient to treat about 3,000,000 people; and that the world's supply has for some years been stable at 1,000,000 pounds, or enough to treat about 30,000,000 people. These facts have an important bearing on the possibility of treating malaria by quinine. In the event of the supply from the Government factories proving insufficient, it will be necessary to purchase quinine in the open market. In any case the Conference think hydrochloride of quinine should be procured by purchase and should not at present be manufactured in the Government factories. It is desirable that the area under cinchona should be increased.

C.—Education.

1. The local organisation in each province should frame a scheme for instructing the inhabitants of malarious tracts regarding the main facts connected with malaria. Such instructions should be given by lectures, illustrated if possible by magic lantern slides, and by leaflets, and pamphlets in the vernacular languages. Private medical practitioners should also be invited to disseminate a correct knowledge of the subject.

2. The Education Department should arrange to include in text-books, lessons on malaria and hygiene, and to give similar instructions in normal schools.

3. The Conference strongly recommends the constitution of divisional and district committees of the nature suggested by Sir Herbert Risley, and of local societies similar to the league started by Mr. King with such success in Gurdaspur. Such committees and societies should consist of both officials and non-officials.

D.—Sanitary Staff.

It is desirable that the Sanitary Department should be organised with reference not only to general sanitation, but also to the suppression of malaria.

E.—Finance.

1. Each local government should be invited to make a special allotment of funds every year for the investigation of the problems connected with malaria and measures of prevention.

2. The Conference recognise that the amount of this allotment will depend upon the state of the provincial finances, but they would urge that the prevention of malaria has a strong claim upon all surpluses and increases of revenue.

3. Municipal councils and local boards should also be urged to set apart funds for the prevention of malaria.

MAISON BARLIER

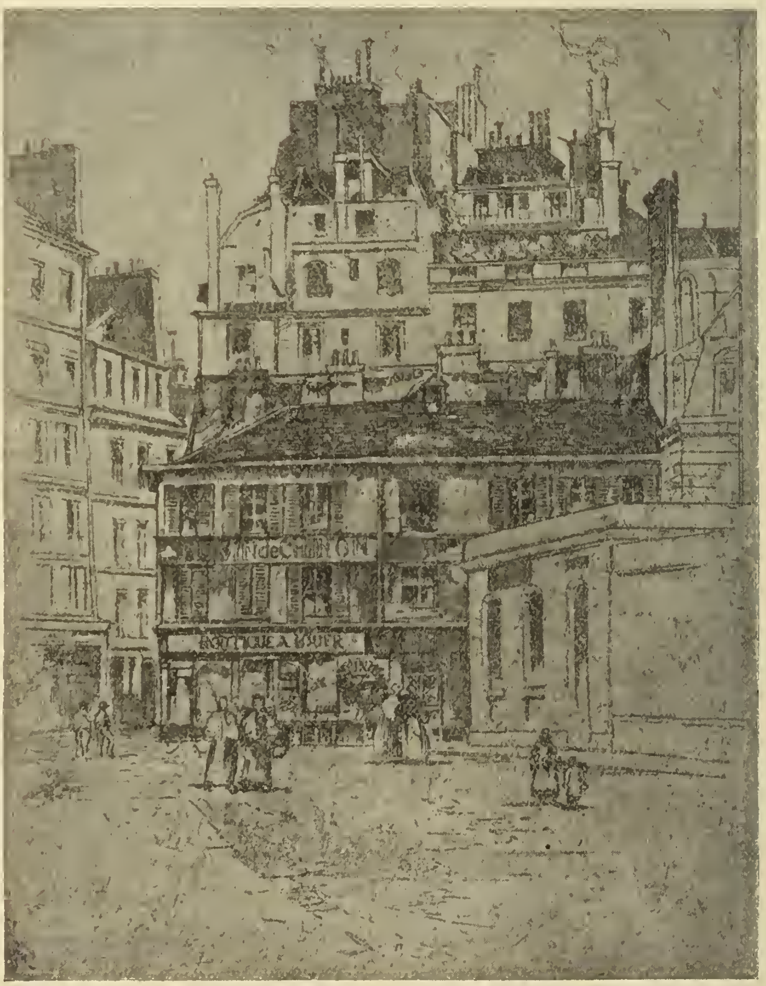
(RUE DE L'ABBAYE, PARIS).

BY H. MACNAUGHTON-JONES, M.D.

THE Maison Barlier was built in the meadows of St. Germain des Prés—formerly the scene of the celebrated Foire de St. Germain—including Notre Dame des Augustins, St. Serverin, St. Julien Le Pauvre, and St. Germain des Prés—churches where the early monk physicians held their meetings and stored their treasures before they acquired a building of their own. The fairs at first were mostly devoted to the sale of sacred objects as figures of saints and religious pictures, or in honour of a dead saint; but in time they became purely commercial, and offered pleasurable attractions for students and others. That of St. Germain was the oldest and most important fair in France. It was held as far back as the twelfth century. But for some time there was a restriction placed on these fairs, until Louis XI. in 1482, by letters patent, authorised the monks to re-establish their fair, and in 1486 they constructed on the ground belonging to the Hôtel de Navarre as many as 340 booths for the use of the merchants. In 1512 they were repaired and modified by the Abbé Guillaume Briconnet, but on March 16th, 1762, they were destroyed by fire. After this the fair was held in a large quadrilateral walled-in space, with a great court, and it was constructed so as to accommodate a large number of merchants. The fair was the scene of great gaiety and conviviality—"du vin et toujours du vin, belle etait la coutume du temps. La Foire St. Germain etait un champ toujours ouvert à la galanterie! C'est encore Scarron qui nous apprend :—

> 'Foire, ou l'on vend moins d'affiquets
> Que l'on vend de chair humaine,
> Sous le pretexte des bijoux.'"

From an inscription under an old engraving of the seventeenth century we find that it commenced on the 3rd of February, and lasted for 15 days, and was often prolonged beyond this. The merchants held their tenancies from those who, at the beginning of the century, owned the Abbaye St. Germain. The spot on which the building was erected was originally called the "Jardin de Nesle."



Maison Barlier (from an etching by Katherine Kimball). The site of the ancient fair of St. Germain, and the meeting place of the ancient monk physicians and the resort of the medical students in the sixteenth and seventeenth centuries.

Thither occasionally went the King and Queen with all their court. Indeed, to this brilliant rendezvous went all grades of society of every calling and occupation, from the artisans and exquisitely dressed courtesans to the court favourites. It was always a condition to the privilege of taking a lady to the fair that the gallant should make her a present. Nor were pickpockets any idler in those days or less apt than they are at present. "Especially," says Nemeitz, "have you to be careful of those who cry at the entrance, 'Gardez vos poches.'" At night the fair was brilliantly lighted and the crush sometimes was enormous. Hither the Portuguese and Spanish brought their chocolate, first introduced by Alphonse Louis du Plessis, brother of Cardinal du Richelieu, the Portuguese having special privileges in regard to its sale. But for ages before the conquest of Mexico by Spain the Mexicans had drunk their "Chocolatl" from their "choco" tree (Theobroma cacao), "latl" signifying water, not the compound chocolate mixture as we now know it. The use of chocolate was then very popular, and in 1663 the Medical Faculty endorsed this use by its approval. The very nutritious and sustaining properties of this highly charged carbohydrate and nitrogenous, heat-giving food are best known to our mountain climbers and long-distance runners. Coffee was then, we are told, regarded as a "curiosity." It became better known through the patronage of Marie Theresa, Spanish Consort of Louis XIV. Armenians served it at the fair of St. Germain.

It is interesting to note that the Arabic name given to coffee was "gahweh," which signified wine, showing that the Easterns early recognised its stimulating properties.

The story of coffee takes us into the misty past of Ethiopia, its *seeds*, not berries, as they are often erroneously called, having been first imported into Europe (Batavia) from Abyssinia and Arabia. Few realise that the beautiful evergreen from which these seeds are obtained is a most attractive tree, very different in its wild state, when it reaches to over 20 feet in height, to that which we see in hot-houses, nor has it the pyramidal shape which it is made to assume in cultivation. Its snow-white flowers, nestling in the axils of its leathery, oblong leaves, exhale a delightful perfume, the deep scarlet fruit making exquisite contrasts for the greater part of the year, as the trees continue in blossom for some eight months. The Armenians who served up the coffee in the booths at the fair of St. Germain were probably better instructed in the preparation of the seeds than most of our modern cooks. They used the Mocha beans and roasted these themselves. Nor was the coffee adulterated with chicory and caramel and many other substances which alter its flavour and impair its dietetic value, the proper roasting of the beans, influencing as it does their weight, volume, and aroma, being the main factor in the successful preparation of coffee. The Austrian or Norwegian peasant can give our English cooks many points in "making a cup of coffee." The latest innovation in this beverage—viz., the abstraction of the alkaloid caffeine from the bean—has imported a new element into the value of coffee. One can speak from experience that the flavour and refreshing properties are preserved and the objectionable physiological and therapeutical effects of caffeine are absent.

The "Mount Parnassus" of the medical students' song, with its well-known chorus, "Toujours, toujours, vous avez tout, mon cœur," was probably in the near neighbourhood of, though not comprised in, the original enclosure of the fair. It may have been some elevation in the neighbourhood of the Boulevard Montparnasse, near the Observatory at the end of the Boulevard Mont St. Michel, where it crosses the Boulevard Montparnasse and where the famous students' ball, the Bal Bullier, is still held.

For much of this information I am indebted to René Fauvel's "Les Étudiants de Médecine de Paris sous le Grand Roi," and to Miss Katherine Kimball (Royal Society of Etchers), a print of whose excellent etching of the Maison Barlier, exhibited in the Salon in 1908, accompanies this descriptive sketch.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8691 births and 4650 deaths were registered during the week ending March 5th. The annual rate of mortality in these towns, which had steadily declined in the four preceding weeks from 17·0 to 14·7 per 1000, further fell to 14·5 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these towns averaged 15·5 per 1000; the mean rate in London during the same period was also equal to 15·5. The lowest reported annual rates of mortality in the 76 towns last week were 7·0 in West Hartlepool, 7·8 in Willesden, and 8·0 in Reading; the rates in the other towns ranged upwards, however, to 21·4 in Burnley, 22·1 in Birkenhead, 22·7 in Swansea, and 23·9 in Wigan. In London the recorded death-rate last week did not exceed 14·4 per 1000. The 4650 deaths registered in the 76 towns last week showed a further decline of 52 from the numbers in recent weeks, and included 328 which were referred to the principal epidemic diseases, against numbers declining from 361 to 266 in the five preceding weeks; of these 328 deaths, 111 resulted from whooping-cough, 88 from measles, 50 from diphtheria, 32 from diarrhœa, 29 from scarlet fever, 17 from enteric fever, and 1 from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases was equal to 1·0 per 1000, against 1·0 and 0·8 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in East Ham, Walthamstow, Tottenham, Derby, Wolverhampton, or in 7 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·3 in Hastings, 2·4 in Middlesbrough, 3·8 in Birkenhead, and 3·9 in Burnley. The fatal cases of whooping-cough in the 76 towns, which had been 162, 135, and 100 in the three preceding weeks, rose again last week to 111, and caused annual death-rates equal to 1·1 in Rhondda, 1·3 in West Hartlepool, and 1·6 in Barrow-in-Furness. The deaths from measles, which had been 71 and 49 in the two previous weeks, rose to 88 last week; the highest annual rates from this disease last week were 2·1 in Ipswich and in Birkenhead, 2·2 in Hanley, and 2·4 in Burnley. The 50 deaths referred to diphtheria showed an increase of 16 upon the number in the previous week, and caused death-rates equal to 1·2 in King's Norton, 1·5 in Middlesbrough, 1·7 in Portsmouth, and 1·8 in Tynemouth. The 32 deaths attributed to diarrhœa were fewer than in any recent week. The 29 fatal cases of scarlet fever showed a decline of 3 from the number in the previous week, but included 3 in Birmingham and 2 each in Leicester, Nottingham, and Burnley. The 17 deaths referred to enteric fever showed a slight increase; 2 were returned in Nottingham, Liverpool, Wigan, and Leeds. The fatal case of small-pox occurred in Newcastle-on-Tyne. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily declined in the 20 preceding weeks from 2819 to 1765, were 1766 on Saturday last; 211 new cases of this disease were admitted to these hospitals during last week, against 215 and 193 in the two preceding weeks. The Metropolitan Asylums Hospitals contained but one case of small-pox on Saturday last. Of the 1346 deaths registered in London last week, 290 were referred to pneumonia and other diseases of the respiratory system, against 425, 395, and 348 in the three preceding weeks; these 290 deaths were 159 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 37, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 49 other smaller towns; the 37 uncertified causes of death in the 76 towns last week included 7 in Liverpool, 5 in Birmingham, 3 in South Shields and in Gateshead, and 2 both in St. Helens and Preston.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 912 births and 590 deaths were registered during the week ending March 5th. The annual rate of mortality in these towns, which had been equal to 17·7 and 16·2 per 1000 in the two preceding weeks, rose again slightly to 16·3 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these towns averaged 17·7 per 1000, and exceeded by 2·2 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 10·6 and 12·0 in Paisley and Edinburgh, to 18·1 in Dundee, 18·6 in Leith, and 27·6 in Greenock. The 590 deaths from all causes in the eight towns last week exceeded by 2 the number returned in the previous week, and included 79 which were referred to the principal epidemic diseases, corresponding with the number in the previous week. These 79 deaths were equal to an annual rate of 2·2 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 1·0 per 1000. These 79 deaths in the Scotch towns last week included 40 from measles, 14 from diarrhœa, 12 from diphtheria, 6 from "fever," 5 from scarlet fever, and 2 from whooping-cough, but not one from small-pox. The 40 fatal cases of measles corresponded with the number in the previous week, and included 28 in Glasgow, 6 in Leith, 3 in Greenock, and 2 in Edinburgh. The 14 deaths attributed to diarrhœa exceeded by 5 the number in the previous week; 6 occurred in Glasgow, 3 in Aberdeen, and 2 in Dundee. The deaths referred to diphtheria, which had been 13, 7, and 8 in the three preceding weeks, rose again to 12 last week, and included 9 in Glasgow. The 6 deaths referred to "fever," of which 3 were returned in Glasgow and 3 in Greenock, corresponded with the number in the previous week. Three of the 5 fatal cases of scarlet fever occurred in Glasgow. The 2 deaths from whooping-cough were fewer than in any recent week. The deaths in the eight towns referred to diseases of the respiratory system, which had been 135 and 97 in the two previous weeks, rose again to 114 last week, but were 60 below the number returned in the corresponding week of last year. The causes of 22, or 3·7 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 652 births and 495 deaths were registered during the week ending March 5th. The mean annual rate of mortality in these towns, which had been equal to 22·8 per 1000 in each of the two previous weeks, declined to 22·4 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these Irish towns averaged 22·4 per 1000, whereas the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1910.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†	Deaths of infants under one year to 1000 births.‡
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,872,702	2	849	451	—	57	1	18	299	4	1681	4·5	—	57	17	45	148	—	6	1	42	316	0·8	5259	14·8	108
West Districts.																										
Paddington	153,004	—	16	14	—	1	—	—	9	—	40	3·4	—	2	—	3	—	—	1	—	4	10	0·9	151	13·8	118
Kensington	184,635	—	23	18	—	1	—	—	12	—	54	3·8	—	1	1	2	3	—	—	—	3	10	0·7	184	14·0	92
Hammersmith	127,413	—	28	12	—	2	—	—	3	—	45	4·6	—	3	—	3	—	—	—	—	1	7	0·7	140	14·9	108
Fulham	181,282	—	32	21	—	2	—	2	9	1	67	4·8	—	2	3	3	8	—	1	—	2	19	1·4	179	13·5	137
Chelsea	75,457	—	10	4	—	1	—	1	2	—	18	3·1	—	5	—	—	—	—	—	—	1	6	1·0	84	15·0	53
City of Westminster	167,233	—	31	19	—	1	—	—	3	—	54	4·2	—	1	1	—	—	—	—	—	1	3	0·2	146	12·8	133
North Districts.																										
St. Marylebone	125,195	—	7	8	—	1	—	—	7	—	23	2·4	—	—	—	1	8	—	—	—	—	9	0·9	133	14·7	88
Hampstead	95,729	—	12	1	—	—	—	—	3	—	16	2·2	—	5	—	—	—	—	—	—	—	5	0·7	77	11·8	73
St. Pancras	237,792	—	57	20	—	—	—	1	15	1	94	5·2	—	—	1	2	3	—	—	—	3	9	0·5	277	15·9	95
Islington	353,356	1	49	25	—	5	—	2	18	—	100	3·7	—	1	2	2	10	—	—	1	4	20	0·7	376	14·4	135
Stoke Newington	54,838	—	7	3	—	1	—	—	1	—	12	2·9	—	—	—	—	—	—	1	—	1	2	0·5	68	16·9	136
Hackney	239,979	—	34	23	—	3	—	1	11	—	72	3·9	—	6	—	1	8	—	—	—	2	17	0·9	236	13·3	104
Central Districts.																										
Holborn	53,142	—	4	4	—	—	—	—	5	1	14	3·4	—	—	—	—	3	—	—	—	—	3	0·7	65	17·1	63
Finsbury	94,578	—	10	3	—	—	—	—	7	—	20	2·8	—	—	—	1	2	—	—	—	—	3	0·4	143	20·4	109
City of London	17,132	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25	20·9	53
East Districts.																										
Shoreditch	114,387	—	14	15	—	4	—	—	11	—	44	5·0	—	2	1	2	3	—	—	—	2	10	1·1	160	19·1	108
Bethnal Green	131,579	—	12	9	—	3	—	3	15	—	42	4·2	—	3	—	1	1	—	—	—	4	9	0·9	183	18·3	142
Stepney	314,379	—	30	42	—	6	—	2	23	—	103	4·3	—	8	2	2	22	—	—	—	3	37	1·5	375	16·2	106
Poplar	172,432	1	42	14	—	3	—	1	11	—	72	5·4	—	4	—	2	13	—	—	—	—	19	1·4	213	16·6	141
South Districts.																										
Southwark	211,832	—	35	17	—	4	—	1	16	1	74	4·6	—	—	—	3	6	—	—	—	3	12	0·7	277	17·8	116
Bermondsey	127,238	—	22	12	—	2	—	—	15	—	51	5·2	—	—	1	3	3	—	—	—	1	8	0·8	154	16·2	101
Lambeth	327,074	—	84	29	—	1	—	2	17	—	133	5·3	—	1	2	4	6	—	—	—	3	16	0·6	328	13·5	82
Battersea...	188,222	—	45	30	—	4	—	—	12	—	91	6·3	—	4	—	1	1	—	—	—	1	7	0·5	189	14·1	114
Wandsworth	305,838	—	48	33	—	4	—	2	18	—	105	4·5	—	—	—	3	10	—	2	—	1	16	0·7	272	12·2	81
Camberwell	286,058	—	48	25	—	4	1	—	21	—	99	4·5	—	—	1	2	3	—	—	—	1	7	0·3	276	13·1	89
Deptford	119,642	—	35	4	—	—	—	—	13	—	52	5·7	—	5	—	1	15	—	—	—	—	21	2·3	153	17·6	175
Greenwich	112,935	—	16	12	—	1	—	—	11	—	40	4·6	—	4	—	—	14	—	1	—	1	20	2·3	127	15·0	173
Lewisham	164,899	—	67	24	—	2	—	—	2	—	95	7·5	—	—	1	3	2	—	—	—	—	6	0·5	127	10·4	59
Woolwich...	135,422	—	31	10	—	—	—	—	9	—	50	4·8	—	—	1	—	4	—	—	—	—	5	0·5	141	14·5	70
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for differences of sex- and age-distribution; the population of England and Wales is taken as the standard.

‡ The rates of infant mortality are *not* corrected on account of births occurring in institutions.

mean rate during the same period did not exceed 15·5 in the 76 largest English towns and 17·7 in the eight principal Scotch towns. The annual death-rate last week was equal to 25·2 in Dublin, 22·0 in Belfast, 23·3 in Cork, 25·2 in Londonderry, 13·7 in Limerick, and 17·5 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 18·9 per 1000. The 495 deaths from all causes in the 22 town districts last week showed a decline of 8 from the number returned in each of the two preceding weeks, and included 30 which were referred to the principal epidemic diseases, against 32 and 28 in the two previous weeks; these 30 deaths were equal to an annual rate of 1·4 per 1000; in the 76 English towns the mean rate last week from the same diseases did not exceed 1·0 per 1000, while in the eight Scotch towns it was equal to 2·2. The 30 deaths from these diseases in the Irish towns last week included 20 from whooping-cough, 6 from diarrhœa, 2 from enteric fever, and 1 each from measles and scarlet fever, but not one either from diphtheria or small-pox. The fatal cases of whooping-cough, which had been 20 and 17 in the two previous weeks, rose again to 20 last week, and included 11 in Belfast, 3 in Dublin, and 2 both in Limerick and Ballymena. Of the 6 deaths attributed to diarrhœa, 3 occurred in Dublin and 2 in Belfast. Both the deaths referred to enteric fever were returned in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 130 and 146 in the two previous weeks, declined to 118 last week. The causes of 21, or 4·2 per cent., of the deaths registered in the Irish towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., and in the eight principal Scotch towns it was equal to 3·7 per cent.

VITAL STATISTICS OF LONDON DURING JANUARY, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·5 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates had been 6·5, 5·8, and 5·4 per 1000 respectively. No case of infectious disease was notified last month in the City of London; the lowest rates were recorded in Paddington, Chelsea, St. Marylebone, Hampstead, Stoke Newington, and Finsbury; and the highest rates in St. Pancras, Poplar, Bermondsey, Lambeth, Battersea, Deptford, and Lewisham. Scarlet fever again showed a declining prevalence last month; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Poplar, Lambeth, Battersea, Deptford, Greenwich, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 1962 scarlet fever patients at the end of last month, against 2708, 2460, and 2329 at the end of the three preceding months; the weekly admissions averaged 198, against 325, 289, and 250 in the three preceding months. Diphtheria was slightly more prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease last month was recorded in Fulham, Shoreditch, Stepney, Battersea, Greenwich, and Lewisham. There were 883 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 958, 940, and 904 at the end of the three preceding months; the weekly admissions averaged 96, against 119, 104, and 97 in the three preceding months. The prevalence of enteric fever was rather less than that recorded in the preceding month; among the several boroughs this disease was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Battersea. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month was 62, against 78, 70, and 62 at the end of the three preceding months; the weekly admissions averaged 10, against 11, 10, and 8 in the three preceding months. Erysipelas was proportionally most prevalent in Holborn, Shoreditch, Bethnal Green, Bermondsey, Deptford, and Greenwich. The 18 cases of puerperal fever notified during the month included 3 which belonged to Bethnal Green and 2 each to Fulham, Islington, Stepney, Lambeth, and Wandsworth. The 4 cases of cerebro-spinal meningitis belonged respectively to Fulham, St. Pancras, Holborn, and Southwark.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Jan. 29th the deaths of 5259 London residents were registered, equal to an annual rate of 14·1 per 1000; in the three preceding months the rates were 11·3, 13·8, and 15·0 per 1000. The death-rates last month ranged from 10·0 in Lewisham, 10·5 in Hampstead, 11·4 in the City of Westminster, 11·6 in Wandsworth, and 12·6 in Camberwell, to 16·1 in Poplar, 16·2 in Stoke Newington, 16·7 in Deptford, 17·0 in Southwark, 18·1 in Bethnal Green, 18·2 in Shoreditch, 19·0 in the City of London, and 19·7 in Finsbury. The 5259 deaths from all causes included 316 which were referred to the principal infectious diseases; of these 57 resulted from measles, 17 from scarlet fever, 45 from diphtheria, 148 from whooping-cough, 6 from enteric fever, 1 from ill-defined pyrexia, and 42 from diarrhœa, but not any from small-pox. No deaths from any of these infectious diseases were recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in the City of Westminster, Camberwell, and Finsbury, and the highest rates in Stepney, Fulham, Poplar, Deptford, and Greenwich.

The 57 fatal cases of measles showed a decline of 117 from the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Chelsea, Hampstead, Hackney, Bethnal Green, Stepney, Poplar, Battersea, Deptford, and Greenwich. The 17 deaths from scarlet fever were 30 fewer than the corrected average number; of these 17 deaths, 3 belonged to Fulham and 2 each to Islington, Stepney, and Lambeth. The 45 fatal cases of diphtheria showed a decrease of 27 from the corrected average number; the highest death-rates from this disease were recorded in Paddington, Hammersmith, Fulham, Bermondsey, and Lewisham. The 148 deaths from whooping-cough were 42 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionately most fatal in St. Marylebone, Holborn, Stepney, Poplar, Deptford, and Greenwich. The 6 fatal cases of enteric fever were 15 fewer than the corrected average number; of these 6 deaths, 2 belonged to Wandsworth and 1 each to Paddington, Fulham, Stoke Newington, and Greenwich. The 42 deaths from diarrhœa showed a decline of 16 from the corrected average number; the greatest proportional mortality from this disease was recorded in Kensington, Paddington, Bethnal Green, Shoreditch, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 32·9 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 108 per 1000 last month. The lowest rates of infant mortality were recorded in Chelsea, Hampstead, Holborn, the City of London, Lewisham, and Woolwich; and the highest rates in the City of Westminster, Fulham, Islington, Stoke Newington, Bethnal Green, Poplar, Deptford, and Greenwich.

THE SERVICES.

The Changes in the Medical Department at the War Office.

It is now officially announced that Surgeon-General Sir Alfred Keogh, K.C.B., has been placed on retired pay, and that Surgeon-General William L. Gubbins, C.B., M.V.O., has been promoted from Deputy Director-General to Director-General. Consequent on these changes Colonel William Babtie, V.C., C.M.G., has been appointed Deputy Director-General with the temporary rank of Surgeon-General, and Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., has been appointed Colonel.

Royal Navy Medical Service.

The following appointments are notified:—Fleet-Surgeons: C. S. Woodwright to the *Roxburgh*, on recommissioning;

and A. S. G. Bell to the *Russell*, on recommissioning. Staff-Surgeons: F. Bolster to the *Duke of Edinburgh;* S. Roach to the *Pembroke;* C. B. Fairbank to the *Victorious*, on recommissioning; J. N. Robertson to be lent to the *Shannon*, temporarily; R. St. G. S. Bond to be lent to Chatham Dockyard, temporarily; R. Waterfield and G. S. Davidge to the *St. George*, on commissioning. Surgeons: H. A. Kellond-Knight to the *Bulwark*, additional; C. A. G. Phipps to the *Seagull*, and for torpedo-gunboats engaged in exercises; F. G. H. R. Black to the *Duke of Edinburgh*, on recommissioning; K. H. Hole to the *Russell*, on recommissioning; and C. R. Worthington to the *Defiance*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. Meek has been appointed to command the station hospital, Wellington. Lieutenant-Colonel R. J. Windle has had his appointment as physician and surgeon to the Royal Hospital, Kilmainham, extended to five years. Brevet-Colonel F. J. Lambkin, lecturer in syphilology at the Royal Army Medical College, London, has been selected for duty in South Africa, embarking about the middle of April. Brevet-Colonel R. H. Firth, instructor, School of Army Sanitation, Aldershot, has embarked for India. Major C. R. Elliott, sanitary officer, Cork District, has been appointed Sanitary Officer, Third (Lahore) Division, with effect from Feb. 1st. Lieutenant-Colonel H. Cocks and Lieutenant-Colonel H. P. G. Elkington have arrived home from India. Captain J. E. Hoar has been appointed to command the station hospital, St. Thomas's Mount, Madras. Captain E. G. Lithgow and Captain P. J. Dwyer have arrived at Aden for a tour of duty. Major E. M. Williams, Captain W. Bennett, Captain G. F. Sheehan, Lieutenant F. H. Bradley, Lieutenant A. L. Stevenson, and Lieutenant J. E. Ellcombe embarked for India on March 5th in the transport *Dufferin*. Lieutenant-Colonel S. W. Swabey, commanding the station hospital at Aden, has been granted seven months' leave from July 3rd next, and Captain R. G. H. Tate has been granted six months' leave from India from April 15th next. Captain Walter B. Fry is seconded for service with the Egyptian Army (dated Feb. 21st, 1910).

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel C. T. Hudson has been appointed Civil Surgeon (First-class), Bombay. Major E. R. Rost has been appointed to officiate as Senior Civil Surgeon, Rangoon, relieving Lieutenant-Colonel R. E. S. Davis, proceeding on leave. Major W. Molesworth has been appointed to the Medical Charge of the Divisional Staff and Establishments of the 9th (Secunderabad) Division. Major G. T. Birdwood, on completion of special duty inspecting the Dufferin Hospitals in the Central Provinces, has been selected to attend the special bacteriology course at the Pasteur Institute, Kasauli. Captain H. Boulton, in medical charge of the 31st Punjabis, has been granted one year's leave from India. Captain W. Tarr, on special duty in the Jubbulpore District, has been appointed to officiate as Civil Surgeon and is posted to the Chandra District in executive and medical charge of the Chandra District Jail. Captain D. N. Anderson, Officiating Civil Surgeon, Chandra, has been transferred to Nagpur on general duty. Captain S. T. Crump, whose services have been placed temporarily at the disposal of the Local Government, Burma, has been appointed for general duty at the Civil Hospital, Rangoon. Captain L. A. H. Lack, whose services have been placed at the disposal of the Lieutenant-Governor of Burma, has been appointed for special duty in connexion with the prevention of plague at Mandalay. Captain N. S. Sodhi has been appointed to the permanent medical charge of the 97th Deccan Infantry. The services of Captain R. K. White have been placed at the disposal of the Government of India for temporary civil employment in the Central Provinces. Captain Urwin has been selected for service in Bengal. Captain T. S. Ross, Special Health Officer, Madras Corporation, has been appointed Resident Surgeon, Madras General Hospital. Major C. M. Matthew has had his leave extended by six months. Lieutenant S. C. Chuckerbatty has been appointed to the officiating medical charge of the 48th Pioneers, and Lieutenant S. Sarkar has been appointed to the officiating medical charge of the 72nd Punjabis. Lieutenant H. H. King, Lieutenant V. B. Gokhale, and Lieutenant J. McD. Eckstein on completion of their courses of instruction at the Royal Army Medical College, London, left Southampton for India in the transport *Dufferin* on March 5th.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation):—Keith Buchanan MacGlashan (dated Feb. 1st, 1910); and George Barton McCaul (dated Feb. 2nd, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—Norman Scott Carmichael to be Lieutenant (dated Dec. 30th, 1909).

Attached to Units other than Medical Units.—Captain John Allison to be Major (dated Dec. 19th, 1909). Captain George Melville resigns his commission (dated Jan. 26th, 1910).

HYGIENE IN THE FRENCH NAVY.

The *Archives de Médecine Navale* in its January number publishes the report by Dr. Mercié, principal medical officer of the French Northern Squadron, on his inspections of the ships of that squadron in 1909. He is chiefly concerned about the ventilation of the rooms for wireless telegraphy, small spaces of about 250 cubic feet (say, 7 × 7 × 5) in which the operator on watch passes continuously, two hours at each turn by day and four hours at night, listening to the ticking of the faint Morse signals. To secure quiet this small office is carefully isolated from the rest of the ship by layers of felt, steel, and asbestos, and as openings must be few it is hard to ventilate it. An electric fan is provided, but Dr. Mercié notes that though every operator says that the fan is only very rarely stopped, he has himself, never once, in any ship, found that fan running. There are three difficulties: the fan makes a buzzing which hinders the recognition of signals, it creates in so small a place a fierce draught, and it sucks in unpleasant smells from outside—from the kitchen, for example. For all these difficulties remedies are suggested. Unfortunately, we are not told the pattern of the silent fan found in one of the ships. The confinement in these ill-ventilated offices has not yet, so far as known, developed any disease among wireless operators, but a monthly disinfection of these rooms with formalin is recommended. As to other matters, it is noted that in one ship sheets were issued to men sleeping in hammocks, but nobody wanted them, and they were only used folded as pillows. Steam disinfectors are generally fitted, and the bedding of the ship's company, particularly the sick, is disinfected at regular intervals. Filtration of distilled water has been at last, by order, discontinued. Such a sanitary inspection of ships must be of very great value, and we are constrained to wonder why no similar system is in existence in the English fleet. This is a matter to which the Inspector-General might well turn his attention, and we feel certain that the Admiralty would find that a proposal for the regular medical inspection of the ships would receive a great medical endorsement. Dr. Mercié observes that some of the French medical equipment is out of date. An English medical officer would have said it came from Nelson's time; Dr. Mercié dates it further back, to Colbert, the great administrator of the French navy in the seventeenth century. He thinks that in battle wounded will only be moved in something like the Kirker sleigh, and that all lifts will early be put out of gear, and, being useless in his opinion for battle, should no longer be fitted in ships. He observes that he tried to get petty officers instructed in "first-aid" on board their own ships; he himself found them most intelligent and eager to learn, but by the end of the year little instruction had been given, largely, as he says, by reason of "inertia, as much of captains ...... as of senior medical officers." In our navy this instruction is ordered and, we understand, carried out. In the last health report of the German navy it is said that care was specially taken to teach the principles of first-aid "at any rate to most of the crew," while the men of the ambulance party were in several ships taken off their other duties for 14 days or more, and sent to the sick bay to learn how to carry the wounded and attend to the sick.

BRITISH RED CROSS SOCIETY.

At the Abbey Hall, Reading, on Feb. 24th, Lieutenant Colonel Sir Richard Temple, C.I.E., delivered an address or the work of the Red Cross Society and the Voluntary Aic

Detachments. He pointed out that the society did not trench upon the work of the St. John Ambulance Association. The members of the association were the best recruits that could be got for the Voluntary Aid Detachments, and it had been arranged for members of a brigade to join *en bloc* under their own officers. Joining such detachments did not interfere with their ordinary duties. Those persons already qualified could join the detachment. A good beginning had already been made in Berkshire, and he hoped they would make it a success. The object of the Voluntary Aid Detachments was to give aid to the sick and wounded of the Territorial Forces.

A meeting was held under the auspices of the British Red Cross Society in the town hall, Okehampton, on Feb. 28th, with the object of stimulating the movement for the formation of a Voluntary Aid Detachment. Mr. J. S. C. Davis, county director, explained the scheme, remarking that the necessary training was not likely to make serious demands upon the time of members.

On March 1st, Sir Frederick Treves gave an address at Romsey, Hants, in the town hall. A branch of the Red Cross Society was started at the close of the meeting.

A public meeting has been held at Totnes for the purpose of forming a branch of the Red Cross Society in that town.

The Order of St. John of Jerusalem in England.

The following appointments have been made to the Order of the Hospital of St. John of Jerusalem in England: Robert Alexander Gibbons, M.D. Edin., Lieutenant-Colonel Frederick Henry Appleby, R.A.M.C. T.F. (from Honorary Associate), Major Robert James Blackham, R.A.M.C. (from Honorary Associate), to be Knights of Grace; and Major Charles Alfred Hodgetts, A.M.C. (Canada) (from Honorary Associate), Charles Joseph Copp, M.D. Toronto, and Major Harry Bridges Yates to be Esquires.

Good Service Rewards.

The £100 good service pension, rendered available by the death of Surgeon-General Madden, C.B., has been divided into two sums of £50 per annum, and awarded to Colonel J. Williamson, C.B., C.M.G., and Colonel J. F. Supple, C.B., respectively, both on the retired list, Army Medical Service.

Correspondence.

"Audi alteram partem."

THE PREVALENCE OF TUBERCULOSIS AMONG SCHOOL CHILDREN.

To the Editor of The Lancet.

Sir,—I have read with much interest your comments on the Annual Report of the Medical Department of the Board of Education. The subject is a new and developing one. There is great need of wisdom in the conception and prosecution of the programme of the medical inspection of school children. For the present it is impossible to lay much stress on facts elicited by a system of inspection which is not only new but necessarily unequal in the hands of different examiners.

Keeping that in view, I would crave your permission to elaborate somewhat the paragraph in which you refer to the prevalence of tuberculosis among school children. Manifestly the inequality of the present returns is traceable to the different standard adopted and the varying skill possessed by examiners. When you say, with reference to the small and unequal figures quoted as to the incidence of pulmonary tuberculosis, that possibly careful observation will show that the condition is far more common than is as yet believed, is not the statement perhaps ultra-cautious in view of facts already ascertained? You cite French authorities as "claiming to have detected tuberculosis in a very large percentage of Paris school children." Let me recall the even more remarkable statistics from the city of Vienna, published by Sluka and Hamburger, by von Pirquet, and by Monti and Hamburger. These observations go to show, alike by post-mortem examination and by results of the tuberculin test, that among school children, or more widely in children from 2 to 14 years of age, in the city of Vienna tuberculosis was determinable in from 40 to 50 per cent. throughout. In children from the eleventh to the fourteenth year dying from all sorts of causes no fewer than 70 per cent. were found to be tuberculous. Statistics from other continental centres might be cited, but you will allow me to bring the issue nearer home and to reiterate what I stated in a lecture before the Congress on Tuberculosis at Washington in 1908, and again in the address in medicine before the British Medical Association at Belfast last year with regard to observations made in Edinburgh.

The observations were in two series. The first series had reference to the frequency with which school children came under treatment at the Royal Victoria Dispensary for Consumption, Edinburgh. It showed that of the immense *clientèle* of patients attending that institution no fewer than 11 per cent. were children below 15 years of age. In keeping with this, it is found difficult to provide sufficient accommodation for the demands made on behalf of children for admission to the Royal Victoria Hospital for Consumption. Although the hospital is primarily arranged for adults, at the present time, out of a total of 100 patients, 18 are children between 6 and 15 years of age.

The second series included my personal examination of groups of children in various schools under the school board in the city of Edinburgh. The groups of children were selected at random by headmasters as representative of different ages, and strictly without reference to supposed delicacy or otherwise. In judging the cases I made use of three simple, definite tests. In every case the tests were applied by myself, and the results carefully noted by a colleague. The tests included: (*a*) palpation for evidence of glandular enlargement of the anterior cervical and supraclavicular areas (only cases showing at least a dozen such enlarged glands were included as positive); (*b*) percussion of the apices; and (*c*) auscultation of the apices. In the final determination I regarded as tuberculous only those children who afforded positive evidence in respect of *each* of the three tests. In every case, and in relation to each of the tests, if there was doubt I gave the child the benefit of the doubt. As a further correction, to exclude the possibility of error and over-refinement in diagnosis, I wrote off 15 per cent. of the whole. The net result is that no fewer than 30 per cent. of the children examined were found to present stigmata of tuberculosis.

It will be understood that these figures refer to clinically determinable infection, the majority of the cases being none the less in fairly good condition—just the sort of child who might be readily passed as requiring no detailed examination. The proportion of children suffering from pulmonary tuberculosis in aggressive form is, of course, very much less. While determination of the presently active cases is urgently called for with a view to their removal from school, the determination of minor degrees of tuberculous involvement is the ultimate goal to be obtained. Such conditions are *potentially* of little less importance than the others.

Of much significance in this connexion is the large increase of mortality which occurs during the period of school life. Thus, taking the mortality from pulmonary tuberculosis in Scotland during three successive quinquennia from 1891–1905, I find that while there is a remarkable decrease in the rate as between children under 1 year, and children under 5 years, amounting to 31·08 per cent. (1891–95), 29·03 per cent. (1896–1900), and 15·38 per cent. (1901–05), and while there is likewise a decrease in mortality between the ages of 5 and 9, amounting to 17·65 per cent. (1891–95), 25 per cent. (1896–1900), and 26·81 per cent. (1901–05), there is, contrariwise, a most striking increase in the death-rate of children from 10–14 years of age, the increase amounting in the respective periods to 90·48 per cent. (1891–95), 105·88 per cent. (1896–1900), and 90·63 per cent. (1901–05).

These facts are suggestive and of far-reaching importance. Evidence is rapidly accumulating that it is especially during childhood and school life that the tuberculous seed finds a nidus. An exact estimate of the incidence of tuberculosis in childhood is urgently needed, not alone in the interest of the child, but also in that of the population as a whole. This is a scientific and social question of the first moment. There is need for much greater refinement of examination with a view to the detection of the earliest changes. The usual training of the medical student in the diagnosis of pulmonary tuberculosis is faulty because it is concerned chiefly with the grosser signs yielded by advanced disease. He is seldom called to realise the meaning of the finer points in diagnosis. Moreover, he is taught too much to regard pulmonary tuberculosis as a disease of adolescent or adult life.

I confess to grave misgivings as to the worth of most of the figures based on the *routine* examination of school children, so far as they bear on the *actual incidence* of tuberculosis. I have little doubt that cases of aggressive disease are seldom neglected. That is another matter. But if the medical inspection of school children is to be regarded as of scientific validity in respect of the incidence of tuberculosis it is imperative that the standard of clinical training in this department should be raised.—I am, Sir, yours faithfully,

Edinburgh, March 5th, 1910. R. W. Philip.

SOLDIERS' TEETH.

To the Editor of The Lancet.

Sir,—The questions asked and answered in the House of Commons and the statistics quoted in the leading article in The Lancet of March 5th about the condition of the teeth of soldiers and their treatment emphasise the fact that something more is needed to be done for them than present regulations provide for, and having in view the pay of the soldier it is obviously the duty of the nation to take care of his teeth, and this not purely from the humanitarian point of view, but also that his efficiency may be maintained. Modern dental research is proving that the state of the teeth is much more largely concerned with the general health of the individual than was supposed to be the case. Both Germany and France are dealing practically with the question, and in England the Naval Medical Service has formulated a scheme that is working well. All the surgeons who enter at Haslar receive dental instruction from a specially appointed teacher, and no naval surgeon is now ignorant of operative dental methods. The Admiralty has established dental depôts at the principal home stations under the charge of civilian dentists, and each seaman can be, and in most cases is, examined at least once a year. This action on the part of the Admiralty may probably have resulted from the fact that Sir James Dick some years ago consulted some dentists holding official positions, who recommended the exact course which has now been put into practice. In your leading article you pointed out only too clearly that far too many recruits are rejected because of diseased teeth, and that many soldiers are invalided for a similar reason. Both these conditions should be materially changed, and it would probably be financially sounder to expend some money on making both recruits and soldiers fit for service than to reject them or invalid them.

There seem to be two possible methods of dealing with the problem: (1) the establishment of an Army Dental Department; or (2) requiring all candidates for entrance into the Army Medical Department to provide, *before* they can be accepted, a certificate of knowledge in operative dental surgery. The first method has been tried and failed, it having proved too costly, no doubt largely owing to those who were appointed having exaggerated the importance of their department and having been too extravagant in their demands. It is not probable that a similar course will be tried again. It is not just, however, that the service is to suffer because of this failure, and one probably due to those appointed rather than to the War Office authorities.

The following suggestions are made in the hope of helping to find a solution of the problem: 1. Each new candidate for commission to the Royal Army Medical Corps should *before* appointment be required to receive six months' training in operative dental surgery at a dental hospital. 2. That the War Office should ask the dental hospitals in the United Kingdom to establish a special course of instruction for such candidates, prosthetic dentistry to be excluded. 3. That the dental diploma-granting corporations who have dental examination boards should be requested by the Government to hold examinations on the subject and to grant a certificate of proficiency (not a diploma) to those who successfully pass the test; or, if felt desirable, the War Office could appoint special teachers and examiners and grant their own certificate on some such lines as is already done at Haslar. 4. That at each depôt one or more dentists, according to requirements, should be appointed with the title of dentist to His Majesty's Forces, who should be paid an honorarium to be inclusive of services and materials, in order that expenditure may be limited. These appointments, if announced in the *Gazette*, would, like appointments to hospitals, attract dentists to apply for them.

The army medical officers have charge of the health of the soldier; they should not neglect the treatment of the teeth, which are diseased more frequently than any other organ. Dental surgery, however, requires special education, and the medical officers should be required to obtain the necessary knowledge and skill to enable them to treat such diseased conditions. The supplying of artificial teeth should be treated in the same manner as the supply of artificial legs, arms, &c. The dentists who are appointed to His Majesty's Forces should be required to supply dentures at a small fixed charge to such soldiers as are sent to them by the respective medical officers.

The principal objections to these arrangements are probably as follows: (*a*) They would not be popular with the medical officers, who cannot be expected to be specialists in all departments of medicine. The unpopularity would soon cease if the authorities of the Army Medical Department made the dental course compulsory before the candidate was eligible for admission. While dental disease is far more common than any other its treatment is far more easily learned, and there are greater opportunities for learning it than for any other speciality of surgery. (*b*) That the certificate would be a degraded dental diploma. This, however, has no validity, because every medical practitioner is entitled to practise dental surgery. The certificate would only be a guarantee that he was able to do so satisfactorily.

I am, Sir, yours faithfully,

Cavendish-square, W., March 7th, 1910. Morton Smale.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of The Lancet.

Sir,—I appreciate the courtesy of Mr. C. Mansell Moullin's letter, but I cannot perceive that he has replied to my objection. He finds that 60 per cent. of his cases of gastric cancer gave a history such as is ordinarily accepted as diagnostic of pre-existing gastric ulcer. This large proportion is contrary to my experience and to that of many careful observers. My objection to his figures is that, being based on a highly specialised class of cases, they are fallacious. He refers to the "pathology of the living," but the point at issue has nothing to do with "the pathology of the living," because it is a purely clinical point except as regards the confirmation of the diagnosis of cancer, which no one will contend can be better attained by operation than by necropsy. He has quoted the results of other eminent surgeons. Let me give the experience of some well-known clinicians.

1. Sir William Allchin says: "In a person over middle life in whom dyspeptic symptoms such as anorexia, nausea, constipation, with discomfort at the pit of the stomach, and a growing weakness and anæmia are developing, the suspicion of gastric cancer should arise; and the significance of such symptoms would be greater if the patients have previously enjoyed good health."

2. Dr. Sidney Martin, whilst admitting, as everyone does, that a certain number of cases of gastric cancer are preceded by gastric ulcer, considers that "previous disease of the stomach has no special relation to the development of cancer."

3. Professor W. Osler and Dr. T. McCrae, in their analysis of 150 cases of cancer of the stomach, found that "in only four of our cases was there a history which pointed to gastric ulcer, and in none of them could such a condition be positively diagnosed."

4. Dr. S. Fenwick and Dr. W. S. Fenwick sum up their view as follows: "Cruveilhier was the first to point out that carcinoma is apt to attack the edge or scar of a simple ulcer, and the subsequent confirmation of this fact by Rokitansky, Dittrich, Brinton, and Hauser has led to the belief that a causal relationship exists between the two complaints. Thus, according to Lebert, 9 per cent. of all gastric cancers originate in this manner; but Rosenheim is disposed to reduce this estimate to 6 per cent. and Häberlin to 2·3 per cent. The widespread destruction of the tissues that results from a malignant growth usually obliterates every trace of a pre-existent ulcer or scar, and it is therefore necessary to surmise

the former presence of such a lesion from a history of severe pain or hæmatemesis. Out of 134 cases in which special inquiries were directed by us to this question, only four, or 3 per cent., admitted having suffered from symptoms of this kind prior to the onset of the fatal complaint. As this result tallies closely with our experience in private practice, we are inclined to believe that not more than 3 per cent. of all cases of gastric cancer are preceded by gastric ulcer."

Here, therefore, is a remarkable consensus of most authoritative opinion in favour of my contention. How can such an extraordinary divergence of view between Mr. Mansell Moullin and his fellow-surgeons on the one hand and these clinical authorities on the other be explained? Obviously there must be a fallacy somewhere, and one naturally turns first to examine the materials upon which the opposing statements are based. The operators, owing to their specialisation—even owing, also, to their wide reputation—are obviously supplied with a highly specialised class of cases, amongst which gastric ulcers, old and new, must bulk largely. The clinicians, on the other hand, are dealing with all sorts of cases of gastric cancer, unselected, with or without indications for operation. To my mind the inference is obvious. The operators, with their special material, largely composed of gastric ulcer cases, are not in a position to draw inferences with regard to cancer of the stomach in general.

Mr. Mansell Moullin, instead of fully considering this objection, raises a further point, on which again I regret that I must absolutely disagree with him. He says: "What I maintain is that cancer of the stomach originates *almost always on the site of some unhealed ulcer or scar, as it notoriously does in all other parts of the body.*" The italics are mine. Now this passage in italics seems to me to constitute a very sweeping statement, needing detailed consideration. In discussing it I will divide different regions of the body into two classes—viz., A, those in which there is no sufficient ground for such a statement; and B, those in which there seems at first sight to be some ground for it.

A. (This class is by far the more numerous.)

Breast.—Of 137 cases of mammary cancer examined by Mr. Roger Williams to ascertain this very point only 17·5 per cent. gave a history of previous mammary disease, a percentage probably not very different from that obtaining in non-cancerous patients, and in only 2 cases out of 137 did the cancer appear to originate in connexion with an induration.

Pharynx.—Sir Felix Semon and Dr. Watson Williams say: "The causes of malignant growths in this region are as obscure and ill-defined as are the causes of similar growths occurring in other parts of the body." Not a word is said by such acute and experienced observers of the origin of pharyngeal cancer from an ulcer or a scar.

Larynx.—The same authorities are also silent about the origin of laryngeal cancer from such lesions. Instead they say: "Heredity, excessive use of the voice, and long-continued irritation are commonly held to have some influence in their production; but the experience of one us (F. S.) who has had the opportunity of seeing an unusually large number of cases of malignant disease of the larynx, and has paid special attention to these factors, lends no support to these surmises. As a matter of fact, it is hardly ever possible to assign the cause of the occurrence of malignant disease of the larynx."

Œsophagus.—Cancer of the œsophagus is a common disease, ulcer of the œsophagus an uncommon one. Dr. H. D. Rolleston mentions only two cases of cancer developing in the scar of an œsophageal ulcer, which he says are referred to by Tileston.

Duodenum.—About ten cases have been recorded of duodenal cancer arising on the site of a pre-existing ulcer. "But," writes Dr. Rolleston, "ulcer cannot be an important factor in the causation of duodenal carcinoma, because ulcer is almost confined to the first part, whilst carcinoma is much more frequent in the second."

Rectum.—Mr. Harrison Cripps finds no indications of local predisposing causes.

Kidney, bladder, prostate, lung, and liver.—We have no knowledge of any preceding ulcerative or scarring process frequently leading to the development of primary cancer of these organs.

Lip.—The mere pressure of a clay pipe cannot be described as ulceration or scarring. Apart from such pressure, what frequent forerunner of cancer has been described in this situation?

Skin of the extremities.—Volkmann endeavoured to show that 88 per cent. of the cases of cancer arising in the skin of the extremities began in some pre-existing "lesion." Roger Williams, however, has shown that Volkmann's cases were not consecutive and that most of them were actually published by various observers to show the occasional association of cancer with pre-existing disease. Williams himself has analysed 40 consecutive cases of primary cancer of the skin in which special attention has been directed to the question of pre-existing disease. In only 11 was such disease found, and in 2 of these the lesion was not an ulcer or scar, but a wart; in 2 others the lesion was "congenital." Excluding only the two wart cases, we find that pre-existing disease occurred in only 22 per cent.

Penis.—I know of no claim as to frequent origin here from previous ulceration or scarring. Even the claim as to the influence of phimosis seems open to a good deal of discussion.

B.

Uterus.—It is a well-known fact that almost all cases of cancer of the cervix occur in women who have borne children and it has been inferred that the cancer resulted from scarring. But it should be remembered that if, as is stated, nearly 80 per cent. of women over 24 marry, in regarding the frequency in parous women, some allowance must be made for this fact. Further, and even more important, it must be remembered, if cancer is a parasitic disease (and who will be bold enough to deny that possibility?) the virgin uterus is scarcely accessible to invasion from without. Further still, it is noteworthy that, although presumably poor and rich alike are scarred after delivery, cancer of the cervix is comparatively rare amongst the rich. It is certain that many cases are seen to originate at points remote from the scars on the cervix where such exist. It would, at all events, I think, be exceedingly rash to use cancer of the uterus as an argument that cancer generally is likely to originate in most cases from a pre-existing ulcer or scar.

Gall-bladder and bile-ducts.—Here cancer is admittedly commonly preceded by gall-stones. But what proof exists that those gall-stones have previously produced ulceration or scarring? Here again, it has to be remembered that the gall-stones may act not merely as irritants but as aiding a possible cancer parasite to enter the bile passages from the bowel. If gall-stones by their direct effects cause cancer, why are pancreatic calculi so unusual in pancreatic cancer, appendicular concretions so unusual in appendix cancer, renal calculi in renal cancer, and bladder calculi in bladder cancer? Here again, the analogy, however tempting, is evidently a dangerous one.

That any continuous severe irritation may help to set up cancer is an admitted fact, and special cancers so set up, like chimney-sweep's cancer, betel-nut-chewer's cancer, and the cancer of the abdominal skin amongst the Kashmiris, do not seem to me to affect the question at issue. Therefore, it is *not* notorious that cancer arises "almost always on the site of some unhealed ulcer or irritated scar" "in all other parts of the body." I am, Sir, yours faithfully,

Exeter, Feb. 28th, 1910. W. GORDON.

THE ENGLISH "MEMBER" AND THE IRISH AND SCOTCH LICENTIATE.

To the Editor of THE LANCET.

SIR,—The grammar is not mine but the advertisement appearing in an issue of to-day reads: "Applicants must be a Fellow or Member of one of the Royal Colleges of Surgeons." That is, if you hold the primary diploma of the London College of Surgeons you are eligible, if you hold that of Dublin or Edinburgh you are not.

We know that causes, accidental and historical, have resulted in the diplomates in London being called "Members" of their College as it was founded on the model of the London guilds, of which each freeman was a member with equal rights, whilst in Dublin and Edinburgh the academic traditions prevailed. The local College of Surgeons was practically the surgical faculty of the University, and granted to competent persons a licence to practise, and this licence was in some sense a superior qualification to the membership of a guild, being founded on the continental degree of licentiates which intervened between that of Bachelor and Doctor.

Nothing would raise such angry passions as comparisons between the surgical colleges of the three capitals, and I shall not suggest such, but I submit that the same relations exist between the Colleges of Physicians. Now what difference is there in the public eye between a Licentiate of the College of Physicians of London, Dublin, or Edinburgh? If there be any difference it is due to the reputation of the College itself, but when it comes to a "Member" of the College of Surgeons, as against a "Licentiate" of another, at once the conclusion is jumped to that because a "Member" is above a "Licentiate" in a Physicians' College, so also is he in a Surgeons' College, and the "Member" is preferred because of his diploma, not because of his College.

Obviously the time has come when the surgical diplomates of the Colleges of Dublin, Edinburgh, and Glasgow must be called "Members."

I am, Sir, yours faithfully,
J. C. McWalter, M.D. Brux., F.R.F.P. & S. Glasg.
Dublin, March 5th, 1910.

ENTERIC FEVER IN INFANCY.

To the Editor of The Lancet.

Sir,—I have read with great interest the recent article by Dr. Alice Oberdorfer and the subsequent letters of Dr. J. Allan and Dr. J. T. C. Nash in your columns, and as *recognised* cases of enteric fever in infancy are apparently somewhat rare, I think the following case is of special interest, as the child presented definite clinical signs and symptoms, gave a very distinct Widal reaction, and was one of four cases of enteric fever occurring in the same house.

On Feb. 9th three brothers, aged 13½, 11½, and 5½ years respectively, and a sister aged 13 months, were admitted to this hospital, notified as suffering from enteric fever. The eldest boy's blood gave a positive Widal's reaction before admission. The three boys were clinically evidently suffering from enteric fever and the blood of the two younger ones gave a definite positive Widal's reaction. I obtained the following history of the sister's illness from the mother. The infant had been healthy up to a week before admission, when she became feverish, peevish, and sleepless; she vomited frequently and the stools were loose and foul-smelling. On Feb. 7th the temperature was taken by the medical attendant and found to be 104°. On admission here the child showed signs of temporary malnutrition, but otherwise did not appear to be ill; the tongue was slightly furred; there were three doubtful fading rose spots on the abdomen, which was very slightly distended, and the spleen was just palpable; the temperature was normal, and remained so. The Widal reaction was markedly positive, there being immediate loss of motility and good clumping at once with a 1 in 20 dilution. The child had been breast fed, but the mother admitted that she gave her "some milk and a little sugar" at times. It is quite probable that had there not been other cases of enteric fever in the house the true nature of this infant's illness would not have been recognised. From a public health point of view the detection of such cases is of the utmost importance, as it is often the "missed" case which gives rise to trouble.

I am, Sir, yours faithfully,
James Fletcher, M.D., D.P.H. Aberd.,
Resident Medical Officer, Ham Green Hospital, Bristol.
Feb. 25th, 1910.

ADAMS *v.* POMEROY.

To the Editor of The Lancet.

Sir,—I beg to acknowledge with sincere thanks the very great kindness of those who so generously contributed to the fund for the reimbursement of my legal expenses in the recent lawsuit Adams *v.* Pomeroy. The sum has now been handed over to my solicitors by the honorary secretary, Dr. L. Garrett Anderson, in order to defray my bill of costs.

I am, Sir, yours faithfully,
Twickenham, March 2nd, 1910. Martha Adams.

SOUR MILK.

To the Editor of The Lancet.

Sir,—Fortunately, the therapeutic value of sour milk is not in great danger of being discredited by the reports of a few isolated cases of failure, nor by the published details of cases such as that of Lady Bancroft. It must be remembered, however, that a considerable percentage of persons who suffer from chronic intestinal toxæmias—the condition for which sour milk is most rationally prescribed—are, if not exactly neurotic, at least persons of nervous instability, and such individuals are apt to display curious and aberrant symptoms on very slight provocation. Such symptoms may, in fact, be quite unconnected with the cause suspected, or with any special therapeutic measures for the time being employed. It is the purpose of suggesting that some such unsuspecting cause may be the *fons et origo* of Lady Bancroft's illness that prompts me to take up my pen in defence of sour milk. In cases of this kind, in which the suspected cause only offers an unsatisfactory explanation of the symptoms, it is very important that the health record and sanitary history of the house in which the patient has contracted the illness should be thoroughly investigated. Has this been done in the case of the house in which Lady Bancroft lived? It is well known that owing to conditions of soil or of other factors in the environment the susceptible inmates of certain houses are liable to suffer from a syndrome of symptoms not unlike those described in the case of Lady Bancroft. Has this inquiry been made in the instance of her house? I am, Sir, yours faithfully,
March 7th, 1910. Onlooker.

THE PUBLIC HEALTH AND THE PARIS FLOODS.

(From our Special Sanitary Commissioner.)

Paris, Feb. 27th.

No one imagined that the floods would invade 14,000 houses till the water was actually not only in the streets but in the basements. Then the water retired from the streets, though not from the cellars, with great rapidity, so that in cleansing the houses to render them fit for habitation extensive operations were necessary, for the authorities decreed that all dwellings must be cleansed and disinfected. Casual labour may be employed to sweep the streets, but the municipal authorities could not introduce inside private houses labourers recruited on the emergency and about whom they knew little or nothing. Dr. Henry Thierry is the chief of the Technical Services of the Prefecture of the Seine, and these comprise the ambulance services, the disinfection services, and the medical surveillance of the watersheds or gathering grounds whence Paris derives its supply of drinking water. At the moment when his time was largely devoted to the organisation of the ambulance service to be used for the rescue of the sick from certain flooded houses in the outskirts of Paris and bring them to the hospitals, there came the news that it would be necessary to disinfect at once thousands of houses. To help him to accomplish this apparently impossible task Dr. Thierry was offered the services of soldiers belonging to the engineers; but these soldiers, though trained to construct trenches, fortifications, and pontoon bridges, were not necessarily acquainted with the technique of disinfection. Besides they were not his men and he felt that he would have insufficient hold over them. Consequently he determined to use only the men who were employed by the municipality in kindred occupations. These men are well known and reliable because they hold a privileged position. As municipal servants they are entitled to a pension as well as to their salaries. Dr. Thierry took into his disinfecting service all the road menders and cleaners thus employed by the municipality and placed gangs of them under the leadership of trained disinfectors. Again, at the great cattle market of La Villette there is a staff of men regularly engaged to disinfect and clean the cattle sheds. These he drafted in. Finally, in the poorer quarters there are municipal agents whose daily mission it is to visit the public baths and see that they are kept in good condition. All these municipal servants, though not actual disinfectors, have been instilled with the idea of cleanliness, and could therefore be easily taught how to disinfect. All this made an imposing aggregate of forces, yet it was doubtful whether they would suffice. However, in the explanations Dr. Thierry gave me he insisted over and over again that quality rather than quantity was needed. Systematic training and discipline had rendered all his usual disinfectors capable of acting as foremen, controllers, and teachers to the municipal employees drawn from the other services. Above all, it was absolutely necessary to engender the sense of personal responsibility. The imagination of the disinfector had to be developed so that he could fully understand the importance of the services which he was rendering and the disasters likely to result if his task was not satisfactorily accomplished. In such work the *esprit de corps* is as necessary as in military service; and, indeed, the Paris disinfectors are organised on the same lines as the firemen, who in France constitute an armed military corps of veteran soldiers. With the same discipline and promptitude they hasten to an infected house just as firemen go to extinguish a conflagration.

Having thus collected his forces Dr. Thierry divided them into three brigades. The first, or flying brigade, was sent to the weakest points. These men appeared as soon as the water left a street. They did not attempt to disinfect or clean all the houses but only those which seemed to be especially contaminated. This was notably the case where a cesspool had overflowed and some of its contents had been deposited in dwelling-rooms or shops. The foul air in these cesspools as they filled with water had been forced up into the houses, and when the inrush of water was particularly rapid the outrush of foul air came forth in due proportion, but the nuisance resulting depended mainly on the situation of the cesspool. There are still some old houses in Paris that have their cesspools under the staircase, and here the smell was abominable unless there was a good opening at the top of the stairs. Where the cesspools are in the yards the nuisance was not so acute, and perhaps the danger was also less. The water gained admission in some cesspools because they were leaky; and here it entered as soon as the subsoil was flooded and rose gradually with the flood. When the cesspools were, according to the regulation, thoroughly watertight, they could only be filled from above. In that case the water entered through the small hole made to lift up the lid or entrance of the cesspool, or else it came in by the closets in the various yards. Though in many cases there was no very dreadful odour, the overflow of a cesspool was considered as constituting the greatest danger. When it was a sewer that had overflowed into a house this was classified as of secondary importance, for then one had to deal with only fresh unfermented sewage, and this in a highly diluted condition. Such were the houses that were classified as the weakest points and were the first to be taken in hand. The second brigade of disinfectors were scattered here and there endeavouring to respond to the hundreds of complaints and reclamations of alarmed householders which were sent to the already distracted authorities. They dealt with individual circumstances as they found them. The third brigade worked in an absolutely systematic and deliberate manner. They did not rush wherever there was supposed to be the greatest danger or in response to the loudest lamentation. They went over the whole ground, examined everything with a view of estimating whether the damage was great or small, and saw that in every instance the prescribed precautions had been taken. The wealthy inhabitants were told what to do, and inspectors came round to see that the instructions had been faithfully observed. Those who were not very well off received partial help; the public disinfectors would select the most difficult rooms and leave the others to the inhabitants, setting thus the example as to how the cleansing was to be carried out. But if the inhabitants were undoubtedly poor the public servants at once took over the whole work themselves, with a competent surveyor on the watch so that the task should be done thoroughly.

Where, as was generally the case, the cellars were still flooded, they were left alone. Beyond throwing some disinfectants into the water nothing could be done. Pumps, being in great demand, could not be easily procured, and were of no use till the water in the subsoil had fallen to a lower point than the level of the cellars. Water still remains in a great number of cellars, and travelling up the walls by absorption is rendering the houses very damp and cold. There is a musty smell pervading such premises that adds to the unpleasantness of the situation, but nevertheless these houses are inhabited, for the persons who were driven out of the ground floors and shops by the waters have now, for the most part, returned. Where a large quantity of mud or slime on the walls or floors was found, moisture-absorbing gypsum was added to the mud to make it drier and easier to remove. When the resulting cakes had been shovelled away and deposited for removal on a pile in the street the disinfectors, using ordinary garden watering cans, saturated with an antiseptic solution all the walls and floors that had been affected by the inundations. Wet bedding, inferior furniture, and anything that was not of sufficient value to be sent to the disinfecting stoves, were thrown out into the street to be destroyed. What was most urgent was the destruction in the shops and restaurants of soiled articles of food. Many difficulties were anticipated, and it was expected that the owners would attempt to save at least a portion of their submerged stock, but on the whole the luckless proprietors were reasonable. Here came legal complications. Dr. Thierry and his staff had no legal right to deal with these goods because these were trading premises and not dwelling premises. They were therefore under the Prefecture of Police, and not the Prefecture of the Seine. But in the present emergency all these legal differences were to a large extent set aside.

The first on the spot did the work, and Dr. Thierry's men turned the foodstuffs, the vegetables, the flour, biscuits, bread, anything eatable, out into the streets. Here creolin, quicklime, whatever disinfectant was on the spot, was thrown over it, so that no poor people should try to pick anything out of the heap. The conscientious way this was done, not merely by the disinfectors, but by the people themselves, was truly amazing. In the presence of so gigantic a disaster these tradesmen, generally of very careful and saving a disposition, seem to have sunk in a splendid manner the sense of their own individual ruin. They gladly gave up the whole of their stock-in-trade to destruction since by so doing they might help to prevent an epidemic following upon the flood. They did not even attempt to obtain a written certificate of the loss they had experienced, as is done in war time, when troops requisition stores and private property. Dr. Thierry assured me that he had personally visited some 5000 houses and was utterly astonished by the willingness of the people and their eagerness to do whatever was right at whatever sacrifice. Thus, no great fear need be entertained by those living in Paris lest they should eat anything that has been soiled. The flood water contained sewage in such dilution that the risk might not have been great; but where fæcal matter has been carried inside a house by the overflow from a cesspool or broken soil-pipe there must be danger, and all foodstuffs in flooded premises were treated as dangerous. There are no statistics as yet forthcoming to show how often grave contamination has happened, but it has been a not infrequent occurrence.

The walls and floors of the inside of houses can be thoroughly scrubbed and cleansed with strong antiseptics, but in the cellars the ground generally consists of the bare earth. There is therefore a good deal of mud when the water subsides, and this is carefully scraped up and well mixed very generally with chloride of lime. The walls and ceiling must then be scraped and thoroughly whitewashed. All the rubbish found in the cellars is removed and destroyed. Some of this rubbish had been accumulating for more than half a century, and the Parisians are to be felicitated on the fact that it has now been cleared out. Indeed, the citizens are confessing to themselves that Paris has never been so clean before, though the cost of the cleanliness is terrific.

It seems strange, but nevertheless it is a fact, that the disinfectors sometimes found their task impeded because, though in the midst of the floods, they could not procure any water. In ordinary houses the drinking water-supply was available to mix with disinfectants in the water-cans used for the scrubbing of the walls and floors. But where the rag-pickers and others live far away on waste land, where there are no real houses but only little temporary hovels and shanties, there is no water-supply at all. But the filthy stock-in-trade of these poor people and their dirty habits made more need of cleaning here than elsewhere. Consequently a chain had to be formed just as in the olden days at a fire—that is, a row of volunteers passed the buckets along from the nearest public fountain.

Before the houses were rendered fit for rehabitation the aged, the infirm, and the sick had to be conveyed away in ambulances. It was on Jan. 24th that the Paris ambulances were first requisitioned to work in flooded districts. The flood reached its maximum on Jan. 28th, and on Jan. 31st, when the water commenced to withdraw, the disinfecting brigades were able to begin their work. Everybody was surprised by the rapidity with which both the ambulance and the disinfecting work was accomplished. The first ambulances were required at Ivry, Alfordville, and other outlying districts. Each carriage was accompanied by a fully-trained nurse. Many lying-in cases had to be removed by these ambulances and needed special care. Early in the day an experience was acquired that must be carefully noted in all towns and places likely to suffer from flood. The town of Paris was proud of its two brand-new motor ambulances, but they very soon proved to be of absolutely no use in the flood. Fortunately there are 40 ambulances drawn by horses, and the horses seem to have entered into the spirit of the thing and to realise that a disaster had occurred which called forth their special devotion. They unhesitatingly entered the icy water. At Ivry and at the Boucicaut Hospital the water reached the breasts of the horses when they arrived, and they thus waited in the half-frozen water for the patients to be brought down. In some cases the water continued to rise till it spread over the horses' backs. The lower portion inside the ambulance carriages was several inches deep in water. The coachmen, the nurses, and the horses were all equally devoted and equally useful, but when the motor ambulances went into the water the engines at once stopped. All that these splendid and expensive machines could do was to play the part of messenger boys. Of the many difficulties with which the administration had to contend, one of the greatest was the confusion in which the services were thrown by the sudden collapse of the telephones. It must also be borne in mind that cabs and taxicabs were difficult to obtain as, with the suppression of many of the ordinary means of communication, they were in great demand. Therefore the two motor ambulances were kept running in all directions with messages. The people doubtless thought they were conveying patients and that there must be a great deal of sickness prevalent, whereas they were in reality carrying orders for more scrubbing-brushes or messages to say that the chief of some department was too busy to come home for dinner.

In the course of 11 days about 800 helpless persons were removed by the ambulance service. A large proportion of the nurses remained on duty for 36 hours consecutively, and one nurse did not go home or to bed for 60 hours. Many persons have said, and newspaper correspondents have written, that the stress caused by the flood recalled the days of the great siege of Paris. It was just during the siege, as during this recent flood, that the population of Paris was seen to its greatest advantage. In every-day life the Frenchman is prone to do things leisurely. He cannot be militarised like the German. At Hamburg, after the last International Congress of Hygiene and Demography, we were shown the numerous laboratories, where many analyses were made and notably that of the water-supply. With some pride we were told that all this highly scientific chemical work was organised on military lines and the chemists kept under military discipline. This the French character could never endure, and, indeed, the Frenchman is slow over routine work. But in the face of an emergency the most idle and indifferent become heroes. Above all, they thirst to take some sort of initiative. Unlike the disciplined German, they scorn to await orders or instructions. There was an intense longing on the part of the population to be of use, and an absolute abnegation of self. The sole desire was to be active, doing something to invent some new sort of raft or boat, to devise some ingenious method of overcoming a difficulty. The most hare-brained fellows were often the most useful. Many such were set on bicycles and helped to replace the defunct telephone by the carrying of messages. It was inspiriting to see how they flew along, risking their lives over and over again to save a few seconds. No street block was dense enough to prevent their getting through. It was with the aid of such devotion that the 800 patients were removed in 11 days by 40 ambulances and the houses cleansed and disinfected almost as quickly as the water subsided.

BIRMINGHAM.

(From our own Correspondent.)

General Hospital.

The X ray department of the hospital has been recently remodelled and enlarged, and now possesses one of the finest installations in the country. One member of the board generously offered to defray the cost of the new apparatus, amounting to £300, and another contributed several powerful arc lights. The whole of the apparatus is of British manufacture. Last year over 5000 exposures, varying from ten to twenty minutes' duration, were given for treatment, while a very large number were given for diagnosis. At present about 50 patients are under treatment by Mr. J. Hall-Edwards and Mr. F. Emrys-Jones, the radiographers to the hospital. The question of treatment by radium is under consideration. At present the hospital owns no radium, although several patients have been treated there by radium which is the property of the radiographers.

Birmingham and Midland Counties Sanatorium.

The forty-fourth annual report of the committee of this useful institution states that the number of patients last year was the highest on record, 1672, with an average stay of 17·8 days. The average number of beds occupied was 81·5. The income showed an increase for the year of £90 17*s.* 2*d.*, attributable chiefly to the growth of receipts from special subscriptions, the amount of income from this source being £1036 8*s.* 9*d.* The expenditure had decreased by £23 5*s.* 2*d.*, but there remained an adverse balance of £56 9*s.* 2*d.*, due mainly to the extension of the institution. The cost of maintenance of each patient was only 13*s.* 9½*d.* per week, which was a little less than last year.

Natural History Museum.

It has been a subject for reproach in Birmingham that the city does not possess a natural history museum. The idea of such an institution has been brought forward recently by the Natural History and Philosophical Society, which has been receiving gifts of natural history collections for some years past and holding them in trust until a municipal museum is built. It possesses a collection of Midland coleoptera, the work of the late Mr. W. G. Blatch; the Coombes collection of shells; the Hunter collection of miscellaneous natural history objects. An extensive collection of British insects, made by Mr. R. C. Bradley of Moseley, has recently been received. It contains 16,000 specimens, mostly collected in the neighbourhood of Birmingham. There is also a large collection of tropical birds beautifully mounted in the natural state. Now that the movement has been started it is hoped that many similar donations will be made by lovers of natural history.

Medical Inspection of Schools at Walsall.

The second annual report has just been issued. The children examined during the year were (*a*) those who have attained the age of five years, (*b*) those eight years of age, and (*c*) those leaving school. The total number inspected was 6658. The number of parents present was 2478, a considerable increase over the previous year. In 1940 cases notices of dirt or defects requiring attention were sent out. An analysis of the results of the examination gives the following among others: Dirty heads, 13·5 per cent.; defective teeth, 50·9 per cent.; defective sight, 7·8 per cent.; and defective hearing, 8·8 per cent. There were 13 objections to the medical examination, as against 8 the previous year. On the whole the children were fairly well clothed and fed. There was an evident advance in cleanliness, the percentage of dirty heads in 1908 being 27·6; of these the majority were girls.

March 8th.

SCOTLAND.

(From our own Correspondents.)

The State Registration of Nurses in Scotland.

The annual meeting of the Association for the Promotion of the Registration of Nurses in Scotland was held in Edinburgh on March 3rd, when Lord Inverclyde, the President of the association, occupied the chair. In his opening remarks the chairman spoke of the objects of the association: these were to promote a system of registration of nurses, to protect the interests of Scottish nurses, and to secure for Scotland such treatment as would enable it to obtain the fullest possible benefit from registration. He had put himself in communication with Lord Ampthill, who had passed a Bill through the House of Lords which was not acceptable to them in Scotland. Lord Ampthill had welcomed the suggestion that representatives of their association should join in conference with other associations to endeavour to arrive at a mutual understanding, and if possible to agree on the promotion of a Bill which would meet with the approval of the various interests concerned. Conferences had been held, and he thought he might say with satisfactory results, and the draft of a Bill had been agreed on which they who had the interests of the association at heart could consider almost entirely satisfactory. He took the opportunity of publicly stating how much they were indebted to Lord Ampthill, who presided at the conferences, for the fair and impartial manner in which he did his duty, and how much they owed to him for a general agreement being arrived at. The draft of the Bill had now been practically agreed on, but their difficulties were by no means at an end, for the Bill had to pass through both Houses of Parliament before it became law. Dr. D. T. Macintosh, the honorary secretary, gave an account of the proceedings of the association during the past year. He mentioned the steps which had been taken to protect the interests of nurses in Scotland, and said that had it not been for the action of the association Scottish nurses might have found themselves left out in the cold in the proposed legislation.

Edinburgh Town Council and Pulmonary Tuberculosis.

For some time past there have been references to proposals that the public health authorities of Edinburgh should coöperate with the Royal Victoria Hospital authorities with a view to mutual assistance. The proposal was that the public health authorities should have available the information collected by the Victoria Dispensary with regard to cases of consumption, and that a limited number of beds in the hospital should be placed at the disposal of the medical officer of health, the patients to be under his observation. The cost it was suggested should not exceed £1000 per annum. These proposals were considered a few days ago by a public health subcommittee. This subcommittee first dealt with the proposal to subsidise the dispensary, in return for which the medical officer of health should get the benefits of the records and other information connected with the cases there dealt with. It was agreed that such an arrangement be recommended, the corporation giving a contribution of £450 a year, which should be used for extending the work and usefulness of the dispensary. With regard to the second part of the proposal there was an alternative scheme that instead of 10 beds in the Royal Victoria Hospital being set aside and placed at the disposal of the medical officer of health, the committee should consider as to providing accommodation independently at the Colinton City Hospital. The object of this part of the scheme was to enable the medical officer to remove early cases of tuberculous disease from small houses, with a view to diminishing the risks of infection. There were beds provided at the Colinton Hospital for patients in the last stages of consumption, and it was argued that the necessary number of beds might be set aside there for the reception of early cases. On this point there was a strong difference of opinion on the subcommittee, and its further consideration was postponed.

Glasgow Hospital Sunday Fund.

The total income under the Glasgow Hospital Sunday Fund this year amounts to £4648 17*s*. This is a decrease of £328 from the amount collected last year, but no doubt that is partly to be explained by the fact that the Sunday on which the collection was taken was one of the most inclement in the year. By the directors in charge of the fund the sum set aside to be distributed among the infirmaries was £4430, and that was allocated as follows: Royal Infirmary (594·7 beds), £1895 6*s*. 9*d*.; Western Infirmary (545·3 beds), £1737 18*s*.; Victoria Infirmary (250 beds), £796 15*s*. 3*d*. After meeting the working expenses a balance of £2 17*s*. 10*d*. is carried forward to next year. During the 17 years that the fund has been in operation £76,351 have been provided for the needs of the three general hospitals of the city.

Honour for Glasgow Graduate.

The King of Italy has conferred on Surgeon James C. Bringan, R.N., the decoration of a Knight of the Order of the Crown of Italy in recognition of valuable services rendered by him on the occasion of the Messina earthquake. Surgeon Bringan, who is at present serving in H.M.S. *Bacchante* on the Mediterranean station, is a native of Newton Mearns and a graduate in medicine of the University of Glasgow.

The Dangers of Gelignite.

It is probably owing to the fact that Glasgow is the centre of a large mining district that so many accidents have occurred within a very short period through the careless handling by miners of gelignite in their own homes. Gelignite cartridges, which are largely used as explosives for blasting purposes, when required for use have to be thawed, but thawing to be properly done requires the explosive to be put in hot water away from a naked flame. Apparently familiarity has bred contempt, for it has been ascertained that some miners have been in the habit of bringing gelignite cartridges home with them and leaving them about the house. That, of course, in itself would be a dangerous proceeding where children, not realising the risk, might have tampered with the explosive. But it is difficult to explain the foolhardiness of men, who, as in the last two accidents reported, put cartridges on the hob of the grate to thaw. In one case the person who put the cartridges there sat down on a chair during the process of thawing and the result was an explosion leading to loss of life. In another case the kitchen grate was blown into the middle of the floor and serious injury was sustained by the occupant of the house.

Sidlaw Sanatorium.

With regard to the transference from the executive of Sidlaw Sanatorium to the directors of Dundee Royal Infirmary of the endowment fund, to enable the latter to assume control of the institution under the gift of £1000 per annum for ten years from Mr. J. K. Caird, the executive of the sanatorium, acting on the advice of the town clerk, secretary of the institution, has sought and obtained opinion of counsel—the Lord Advocate, Mr. William Hunter, K.C., M.P., and Mr. H. P. M. Willan—on the matter. The total of the endowments is about £18,000, and according to the agreement come to between the two bodies the rights of the donors to nominations of beds are to be conserved; but the question was what steps to take to obtain power to hand over the endowment to the new governing body under a new set of conditions. The opinion of the above-mentioned gentlemen is that the promotion of a provisional order will be the proper procedure. A meeting of the executive will be held immediately to deal with the matter, and in view of the fact that if an order is to be obtained during this session of Parliament notice must be given before March 28th, no time can be lost in making preliminary arrangements. No opposition is expected on the part of the contributors to the endowment fund and the expenses will not be great.

The New Charter of the Montrose Asylum Board.

A communication has been forwarded from the General Board of Lunacy to the managers of the Montrose Asylum and Infirmary Board, asking to be informed as to the precise position which the asylum house committee of seven will occupy towards the new Asylum Board. They ask if the proposed new committee will stand in the same relationship to the new board which the present house committee does to the present managers, if it is contemplated that the asylum committee shall have under the new charter wider and more independent powers, and, if so, of what nature and under what limitations. The managers of the asylum have unanimously agreed to reply that they did not in drawing up the scheme contemplate any alteration in the powers of the house committee, which the managers thought were already sufficient.

March 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dairies, Cowsheds, and Milkshops Order: Working Expenses.

THE "financial relations" of district councils and the Dairies, Cowsheds, and Milkshops Order of 1908 have recently been brought out into a clearer light in the South of Ireland. Following an example which had been set in the county Limerick, a district council in Wexford suggested that one-half of the costs of carrying out the Order should be borne by the Local Government Board. The reply of the latter body proves that more than one council in this country has to its credit (from the fund established under Section 58 of the Local Government Act) a balance which is available as a contribution to the salary of the veterinary inspector appointed under the Order. As the chairman took the opportunity of observing, the district council is a little richer than had been imagined, and by-laws are now to be submitted to the Local Government Board for its sanction.

The Children's Hospital, Temple-street, Dublin.

The Children's Hospital, Temple-street, Dublin, was made the subject of an eloquent appeal on Sunday last. A sermon was preached in the Church of St. Teresa, Clarendon-street, with the object of aiding the funds of the institution, which occupies a unique position among the very numerous hospitals of the Irish metropolis. It is under the charge of the Sisters of Charity, "the Spiritual Daughters of Mary Aikenhead," the benevolent foundress of St. Vincent's Hospital; and the fact is indisputable that it is to the example of those ladies in their care of the sick poor that the profession and the public owe medical advances in the nursing and hygiene of our various hospitals, which were sternly opposed by the ruling powers at the time of their first movements. The collection which was made after the sermon showed a very generous response on the part of the congregation.

Lady Dudley's Nursing Scheme.

Public attention is once more being called to Lady Dudley's nursing scheme, which was inaugurated to maintain fully qualified nurses for residence in the poorest districts on the West Coast of Ireland for the purpose of rendering professional services to patients in their own homes, free of all expense; and at the same time of educating those poor people in the principles of hygiene and sanitation. It has been truly said that few philanthropic movements have been attended with more beneficial results than Lady Dudley's scheme. Nurses have been located in 18 of the poorest centres of the western population of Ireland, extending in series from Donegal, down through Sligo, Mayo, Galway, Clare, and Kerry, to West Cork. The assistance and advice offered by the efficient staff of nurses thus provided have produced a marked improvement in the physical conditions of the poorest and most ignorant of the peasantry of those localities. The most convincing testimony to the local appreciation of their work in their allotted districts is that increasing demands have been pouring in upon them from the surrounding localities. For the purpose of extending the spheres of usefulness of the various nursing centres already established, and of providing further aid in the same direction, the committee which has charge of the management of the nursing scheme is now endeavouring to obtain the support of the public.

Health of Belfast.

At a meeting of the city council of Belfast held on March 1st it was reported that between Jan. 23rd and Feb. 19th the death-rate was 21·5 per 1000. During this period 88 cases of infectious disease were notified—viz., 54 scarlet fever, 21 erysipelas, 3 puerperal fever, 5 diphtheria, 4 typhoid fever, and 1 simple continued fever. The epidemic of scarlet fever is slightly abating, the notifications being 54, while in the previous month they were 70. The medical officer of health speaks of the unwillingness of parents and others to consent to the removal of patients, and urges that 90 per cent. of the cases of scarlet fever should be treated in hospital, as circumstances suitable to nurse such cases are the exception at home. There were 64 deaths from whooping cough (as compared with 3 in the same period of last year) and 233 from chest affections, as compared with 181 for the same period of the previous year.

Obituary: Isaac C. Dundee, M.D. R.U.I.

A well-known medical practitioner in the person of Dr. I. C. Dundee died at his residence, Carnmoney, Co. Antrim, on March 1st, from apoplexy, after an illness of three weeks' duration, at the early age of 55 years. As a student Dr. Dundee was at Queen's College, Belfast, and in 1877 he obtained the M.D. of the Royal University of Ireland. After graduating he went to India, where for 12 years he resided, holding an important local medical position. Coming home he settled down in his native place Carnmoney, and 15 years ago he succeeded his late brother as medical officer of the Carnmoney Dispensary District—a post previously held by his father. He filled the office to the entire satisfaction of the guardians and of the poor, and was greatly liked by all who came in contact with him. Dr. Dundee leaves a widow and a family of two sons and two daughters, with whom in their bereavement sincere sympathy is felt. At a meeting of the Belfast board of guardians held on March 1st a vote of condolence with his widow and children was unanimously passed, and the chairman mentioned the interesting fact that for almost 60 years Dr. Dundee's father, brother, and himself had been in succession dispensary medical officers at Carnmoney.

March 8th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Relations between Human and Bovine Tuberculosis.

THE Imperial Health Office has lately carried out a collective investigation to determine whether the use of milk from cows suffering from tuberculosis of the udder is harmful. A report of Professor Kossel shows that the investigation included only the six States of Prussia, Bavaria, Saxony, Würtemberg, Baden, and Hesse. The investigations were carried out by government veterinary inspectors, who were asked to find out actual cases in which the milk of cows with tuberculous udders had been used by the public. When a case was discovered it was notified to the district officer of health by the veterinary inspector, and with the aid of other medical practitioners investigation was made as to the influence of the tuberculous milk on the health of the respective persons. The case was then reported to the Imperial Health Office, which undertook to state by bacteriological investigation whether in the morbid products examined the tubercle bacilli were of the human or the bovine type. In the latter case only could the eventual disease be attributed to the milk. From 1905 to April, 1909, 113 cases of tuberculosis of the udder were reported in cows the milk of which had been used by 628 people. In 44 cases the milk had been used boiled, but in the remainder in the raw state, the latter category including 69 cases with 360 consumers. Of these 360 people only two children in their second year were found to have been infected by the milk. Both had swollen cervical glands containing tubercle bacilli of the bovine type. They had taken the milk raw over a considerable space of time. On re-examination after two and a half and one and a half years respectively they were found to be in good bodily condition. The other members of the family, including children between 4 and 12 years of age, who had likewise used the milk remained healthy. Apart from these two positive instances, there were a number of suspected cases in which swelling of the cervical glands was present, but no bacteriological examination was made. It was a characteristic feature of all these cases that in none of them was there any progress in the affection of the glands, but, on the contrary, a decrease was found after a period of several months. Of 360 people who had taken raw milk from tuberculous cows there was evidence of infection in two only and 12 cases were suspected; in 346, of whom 136 were children, the milk had proved innocuous. Of 268 people, including 183 children, who had taken the milk boiled, 12 children and 1 adult showed swelling of the cervical glands. Professor Kossel concluded that the danger arising from the use of the milk of tuberculous cows is small in comparison with that arising from persons suffering from tuberculosis of the lungs.

Medical Society Demonstrations.

Before the Medical Society Dr. Peltesohn showed a girl of 24 years of age with Multiple Exostoses on the Ribs, the Scapula, the Arms, and Legs. The first exostosis had developed on the left fibula in the third year of age and the others gradually until the seventeenth year, when the girl had first menstruated. Since that time no other exostosis had appeared. The tumour on the fibula had grown to the size of an apple. The characteristic feature of the case is that a severe paralytic club-foot had developed on this side; this deformity was obviously caused by a compression of the peroneal nerve by the exostosis on the head of the fibula; all the muscles supplied by the peroneal nerve were paralysed, the extensors of the foot and of the toes, the abductors, and the tibialis anticus muscle. The patient in walking treads upon the outer edge of the foot. The electrical reaction of all the paralytic muscles is totally absent. The club-foot developed in accordance with the progressive growth of the exostosis of the head of the fibula. Dr. Peltesohn intended to perform an operation, removing the growth to liberate the nerve from the compression, reducing the club-foot, and shortening the lengthened tendons. Professor Holländer reported the case of a lady who lost an incisor tooth owing to alveolar pyorrhœa and replaced the tooth herself on the same evening. The loose tooth became strongly fixed in its socket by an accumulation of tartar, which became within two years so great that it filled the whole of the sublingual fossa, forming in this way a natural solid prosthesis. She was able to remove this prosthesis every morning for cleaning purposes and to replace it again. It is interesting that in the patient a tendency to form concretions existed, as she suffered from cholesterin gall-stones, as was proved by operation.

March 7th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Jan. 22nd show 10,928 deaths, compared with 10,467 in the week preceding. Bombay Presidency reported 759; Bengal, 1222; the United Provinces, 5085; Punjab, 1624; Burma, 181; the Central Provinces, 1184; Mysore State, 90; Central India, 50; and Rajputana, 679.

Small-pox in Calcutta.

After remaining empty for several months the small-pox wards of the Campbell Hospital at Calcutta have quite unexpectedly had to take in four patients within the last few days. Two of them are Europeans and the other two are Indians. Of the former, the first to come in was the engineer belonging to a steamship, and the other is a military medical student attached to the Medical College Hospital. One of the two Indian patients hails from Fort William, the other being a native seaman. All four cases are of the mildest type and quick recoveries are expected. Judging from these sporadic cases there seems to be nothing in the shape of small-pox in the city, three of them coming from the same direction—namely, the port and the shipping. As regards the medical student he was admitted very soon after his arrival from Allahabad. It is not expected, says a Calcutta paper, that the disease which has ravaged Calcutta for three years in succession will appear again this year in an epidemic form.

Compliment to an Officer of the Indian Medical Service.

At a recent mass meeting of the citizens of Kangra a resolution was passed to the effect that the meeting desired to record its great appreciation of the services rendered to the district by Captain Herbert Halliday, I.M.S., civil surgeon, Dharmsala, and to express its regret at his leaving the district. A hope was also expressed that the Government would give Kangra another European officer of the Indian Medical Service to succeed him.

Spectacles for Troops Serving in India.

It is interesting to note that in many cases the vision of third-class shots has been much improved by the use of spectacles. In the 1st Northamptonshire Regiment a third-class shot became a first-class shot. In the 1st Queen's a man who just missed being a third-class shot became a first. In the 1st Oxfords one failed and two third-class shots became second-class and one third-class became a first. In the 1st Cameronians one improved from non-effective to a second-class shot. In the 1st Royal Scots Fusiliers one third-class shot became a second-class shot. These results are due to action taken by the medical authorities in 1907 when the eyesight of several selected regiments was carefully examined by army medical specialists in ophthalmology. Recommendations based on these examinations were made and the Government of India granted a free issue of suitable glasses to those men requiring them.

The Prevention of Malaria in Bombay.

That the anti-malarial campaign in India shows no signs of losing its vigour in certain regions of the peninsula where the evil has claimed most serious attention is amply witnessed by the last report issued by the executive health officer, Bombay. During the fourth quarter ending Dec. 31st, 1909, strenuous work was done by the anti-malarial department of the Presidency with the aid of a special staff sanctioned by the Bombay corporation for a period of six months. This staff, consisting of 10 sub-inspectors with 10 gangs of five men each specially trained for anti-malarial work in the different wards of the city, began its operations on Oct. 1st last. The sub-inspectors, distributed over the different wards of the city and put in charge of sections working under the supervision of the respective sanitary inspectors controlled by the deputy health officers and other representatives of the executive health officer, paid recurring visits to all premises within their jurisdiction, inspecting wells, cisterns, tanks, masonry-built watering places, empty tins, casks, and stagnant water, with a view to the detection of the breeding places of mosquitoes. In the event of detection the affected places were whenever possible treated with "pesterine," and if anopheles larvæ were found letters were addressed to the occupiers asking them to fill in, clean, or hermetically seal up the tanks and wells, or remedy the nuisance by other means. Steps have been taken to see that these requisitions have been carried out by subsequent inspections, and where it has been found that the department's demands have been ignored provision has been made for proceeding against the offending party in a court of law. The report indicates a considerable amount of opposition on the part of owners of wells, but the department has been firm, and that coöperation which, if willingly afforded, would be of marked value to the public health has not failed to be enforced, where need has been, by coercive pressure. The executive health officer urges reasonable support on the part of those who can give it, but he has clearly indicated that where it is withheld the department will not shirk its clearly defined duty.

Jan. 29th.

Obituary.

THOMAS WEBSTER, L.R.C.P. LOND., M.R.C.S. ENG.

Mr. Thomas Webster died at his residence, Malvern House, Redland, Bristol, on Feb. 12th, in his ninety-second year. He was born at Gorey, in the county of Wexford, and eventually proceeded to enter Trinity College, Dublin. His original intention was to take holy orders, but he finally decided to enter the medical profession. Whilst in Dublin he was a pupil of the late Sir William Wilde. In 1858 Mr. Webster came to England, and after being a student at the Bristol Medical School he obtained the M.R.C.S. qualification in the same year. In 1866 he obtained the L.R.C.P. Lond. Mr. Webster was very popular in Bristol and at one time had a very extensive practice. He was formerly on the honorary staff of the Bristol Children's Hospital, while he took a great deal of interest in the Bristol Deaf and Dumb Institution and formerly had a considerable local reputation as an ophthalmic and aural surgeon. The funeral took place at Redland Green Churchyard on Feb. 14th, in the presence of a large gathering, which included many of the poor, to whom the deceased was always kind.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. E. Chatard, formerly on the staff of the Bordeaux hospitals.—Dr. Arthur Bordier, professor of natural history in the Grenoble Medical School.—Dr. Ernst Dayo, formerly professor of clinical surgery in the Rennes Medical School.—Dr. J. Roux, of the St. Étienne hospitals.—Professor G. Bezzi, of Reggio, who claimed to have used the antiseptic system in surgical practice before Lister. His age was 88 years.—Dr. Samuel Rona, extraordinary professor of dermatology in the University of Budapest and director of the skin and venereal department of St. Stephen's Hospital. He was 52 years of age, and his death was due to septic poisoning from a case of erysipelas.—Dr. Robert H. Fegers, professor of dermatology in the Keokuk Medical College.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on March 5th the following degrees were conferred :—

M.D.—C. V. Bulstrode, Trinity; and C. D. Edwards, St. John's.
M.B.—H. B. Weir, Trinity; C. F. Searle, Pembroke; and L. B. Perry, Queen's.
B.C.—A. L. Singer and G. H. H. Waylen, King's; H. B. Weir, Trinity; and G. G. Alderson, Caius.

UNIVERSITY OF OXFORD: PHILIP WALKER STUDENTSHIP, 1910.—The board of managers have reported to the Vice-Chancellor that they have elected to the studentship Mr. William Ray, B.Sc. Oxon., M.B. Adelaide, Magdalen College.

LONDON SCHOOL OF TROPICAL MEDICINE (UNIVERSITY OF LONDON).—In order that those who are about to reside in the tropics, and especially the representatives and employees of commercial and industrial undertakings, may be afforded an opportunity of acquiring a knowledge of the cause and spread of tropical diseases and the means of prevention, the London School of Tropical Medicine has arranged for a course of lectures to be delivered (by kind permission of the West India Committee) at its headquarters in Seething-lane. Lectures will be delivered at 4 P.M. on March 14th, 17th, and 21st. Tickets can be had on application to Mr. P. Michelli, secretary to the school, or to Mr. Algernon E. Aspinall, secretary to the West India Committee, at 15, Seething-lane, London, E.C. These lectures are delivered as a sequence to those already given by Professor W. J. R. Simpson at the London Chamber of Commerce.

ANOTHER SCHOOL CLINIC PROPOSED FOR LONDON.—Proposals by a committee appointed at a meeting of medical practitioners in Norwood for the purpose of coöperating with the London County Council in the medical treatment of school children came before the Education Committee on March 2nd. The local committee proposed to obtain premises near West Norwood station and with access to the tramways, and to establish there a centre for the treatment of 2000 children suffering from affections of the throat and ear, eye, and skin (chiefly ringworm). The committee asked that the Council should provide equipment estimated to cost £175, and should arrange for the services of a nurse on six half days a week; otherwise the terms were similar to those agreed upon with the Hampstead medical men, as reported in THE LANCET last week (p. 671). The Education Committee accepted the offer in respect of 1500 children, and agreed to the terms, except with regard to the proposed equipment grant, which it is not within the power of the Council to make.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society was held at the Gaiety Restaurant, Strand, London, on March 3rd, under the genial chairmanship of Mr. Leonard A. Bidwell, the President of the society. Covers were laid for nearly 100 guests and the proceedings were marked with great enthusiasm. The President, in proposing the toast of the society, gave an interesting description of how successful the meetings of the members were, and mentioned that the liberty to indulge in smoking tobacco tended to render their deliberations popular. In replying to this toast Dr. J. Barry Ball made some eulogistic remarks on the virtues and capabilities of what he called the staunch members of the society, including amongst these Dr. Austin E. Cooper, the treasurer, and Mr. J. Foster Palmer. Dr. Samuel West, in replying to the toast of "The Kindred Societies," which was proposed by Dr. Eric Pritchard in a humorous speech, said that one of the reasons why the Medical Society of London did not join the Royal Society of Medicine was that the society would have lost its individuality, which would have been merged in the large society and their identity would have vanished. Further, it had to be remembered that there were two classes of societies—one for specialists and the other class consisting of general societies. The Royal Society of Medicine was very largely a specialists' society, and specialists' societies were very good of their kind and the members naturally liked to meet, but, on the other hand, societies like the Medical and the Chelsea Clinical held a very different position. The objection to specialists' societies was that they tended to be more or less narrow in their views and he proceeded to show how difficult it was to avoid this defect. The toast was also acknowledged by the Mayor of Chelsea. After Mr. Charles Ryall had in felicitous terms given the health of the chairman, the proceedings concluded with a short reply from that gentleman.

LONDON OPHTHALMIC EXHIBITION.—The Conferences arranged for 8.30 P.M. on Friday, March 11th, and Saturday, the 12th, at 4.30 P.M., have been postponed.

THE HOSPITAL FOR INVALID GENTLEWOMEN.—On March 7th H.R.H. the Princess of Wales opened the new premises of this hospital in Lisson-grove, which has been built to the designs of Mr. C. W. Ferrier.

A CORNISH CENTENARIAN.—At a meeting of the St. Austell board of guardians held on Feb. 25th it was decided to allow 10*s.* weekly to Mrs. Mary Matthews. She is 106 years of age, and lives at Tywardreath with her daughter, who is more than 80 years of age.

COLONIAL MEDICAL APPOINTMENTS.—The following gentlemen have been appointed to the West African Medical Staff: Dr. T. F. Bayfield (Gold Coast), Mr. W. J. B. Carter (Gold Coast), Mr. G. J. W. Keigwin (Gold Coast), Dr. A. Lundie (Gold Coast), and Dr. W. H. Sieger (Southern Nigeria).

THE IRISH MEDICAL SCHOOLS AND GRADUATES' ASSOCIATION.—The Irish Medical Schools and Graduates' Association will hold its annual dinner on March 17th (St. Patrick's Day) in the Indian Room, Hotel Cecil, at 7.15 for 7.30 P.M. Sir Alfred Keogh, K.C.B., President of the Association, will occupy the chair, and the guest of the evening will be Sir William Selby Church, Bart.

DONATIONS AND BEQUESTS.—By the will of the late Mr. Edward Stocks Massey of Rochdale, Lancs, the Robinson Kay Home for Incurables, Bury, will receive £1000.—Among other bequests the late Mr. John Gower, Marychurch, has bequeathed over £1000 to the Cardiff Infirmary, and to the Dunfermline Cottage Hospital such sum as may be needed to found a bed.

THE HEALTH OF ILFRACOMBE.—Dr. E. J. Slade-King, medical officer of health of Ilfracombe, in his annual report for 1909 states that the birth-rate was 16·4 per 1000. The death-rate was 15, exclusive of visitors 12·9, per 1000. The average death-rate, excluding visitors, for the past eight years was 12. The infant mortality was 92·7 per 1000 births. The death-rate from the seven principal epidemic diseases was 0·5. The number of inhabited houses are 1819; the average number of persons per house was 4·7.

SOCIETY OF APOTHECARIES OF LONDON.—At a meeting of the Court of Assistants of the Society of Apothecaries held on Feb. 8th, Mr. Arthur T. Norton, C.B., F.R.C.S., was elected as the representative of the Society upon the General Medical Council for the ensuing year. Mr. E. Parker Young, M.R.C.S., L.M., L.S.A., was re-elected as representative of the Society on the Central Midwives Board. The Court also passed the following resolution :—

> That inasmuch as the absence of any provision for the payment of medical practitioners when called in on the advice of midwives in accordance with the "Midwives Act" is causing serious injury, the Government be respectfully urged to carry into effect the recommendation of the Departmental Committee on this subject as soon as possible, and that a copy of this resolution be forwarded to the Prime Minister, the Lord President of the Council, and the Members for the City.

THE TEACHING OF PARTIALLY DEAF CHILDREN.—Medical inspection having revealed the fact that there are in the public elementary schools a large number of partially deaf children, the Education Committee of the London County Council on March 2nd decided to make the experiment of providing at one of the schools a special class for children so afflicted. There are already schools for the deaf, but the day schools subcommittee stated that partially deaf children require for their proper development not only training in lip-reading and articulation, but a curriculum of a more extensive kind than that provided in schools for children who are quite deaf. The environment also is not suitable for partially deaf children, as it is desirable that they should mix with hearing children as much as possible. To that end the "hard-of-hearing" classes would be carried on in the classrooms of the ordinary schools, when the children would mix with the others at recreation. The experimental class will be held at Ackmar-road School, Fulham.

THE BROWN DOG.—The fate of the Brown Dog Memorial was decided by the Battersea borough council at its meeting on Wednesday night last, when it was resolved by 42 votes to 4 to have the memorial removed.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis, of 136, Gower-street, London, W.C., has ready for early publication a collection of studies and essays by the late Dr. Thomas Logan. The collection will be issued in three volumes, entitled "Biological Physics, Physic and Metaphysics." The editors are Dr. Quintin McLennan and Mr. P. Henderson Aitken, M.A., B.Sc., D.Litt. The same firm has just issued Professor Feodor Krause's "Surgery of the Brain and Spinal Cord, based on Personal Experiences," translated by Professor Herman A. Haubold; and the second volume of Binnie's "Operative Surgery," completing the fourth edition of the work.

HONOUR FOR A PRESTON MEDICAL MAN.—At a meeting of the Preston town council on Feb. 24th it was unanimously decided to confer the honorary freedom of the borough upon Mr. R. C. Brown, M.B. Lond., F.R.C.P. Lond., F.R.C.S. Eng. Dr. Brown is one of the most esteemed citizens of the borough of Preston and one of its oldest inhabitants, having been born in 1836. His father, Robert Brown, was a Fellow of the Royal College of Surgeons of England and an alderman. Dr. R. C. Brown has led a very active professional career, and has munificently subscribed to the Preston Royal Infirmary and various charities of the borough. As recently as Feb. 5th we referred to the new buildings of the Royal Infirmary and to other objects which were the gifts of Dr. Brown. We congratulate him upon his well-deserved honour.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Dogs Protection Bill.

THE Dogs Protection Bill, which was brought into the House of Commons by Sir **FREDERICK BANBURY**, is published. It declares it to be unlawful "to perform any experiment of a nature causing or likely to cause pain or disease to any dog for any purpose whatsoever, either with or without anæsthetics, and no person or place shall be licensed for the purpose of performing any such experiments."

Royal Army Medical Corps (Territorial).

Mr. **HALDANE**, the Secretary of State for War, in a statement with regard to the numbers of the Territorial Forces on Jan. 1st, 1910, mentions that the establishment of the Royal Army Medical Corps is 1439 officers and 13,665 non-commissioned officers and men. The actual strength is somewhat lower, being 1128 officers and 11,421 non-commissioned officers and men. These figures include 741 Royal Army Medical Corps officers of general hospitals and sanitary service available on mobilisation, and 840 officers of Officers Training Corps and officers on the unattached list.

Parochial Medical Officers' (Scotland) Bill.

Mr. **CATHCART WASON** has introduced into the House of Commons a Bill to amend the law relating to the tenure of parochial medical officers in Scotland. The measure is supported by Mr. **AINSWORTH**, Mr. **HARMSWORTH**, Sir **JOHN DEWAR**, Mr. **BEALE**, Dr. **CHAPPLE**, Sir **HENRY CRAIK**, Viscount **DALRYMPLE**, the Marquis of **TULLIBARDINE**, Mr. **MACKINDER**, and Mr. **G. YOUNGER**.

Poor-law Children.

The report which Miss **ETHEL M. N. WILLIAMS**, M.D., D.P.H., and two other ladies have made to the Royal Commission on the Poor-laws, on the condition of the children who are in receipt of various forms of Poor-law relief in England and Wales, has just been presented to Parliament as a Blue-book.

The Inspector of Army Medical Services.

Lord **CLAUD HAMILTON** asked the Secretary of State for War what were the special circumstances which called for the creation of the appointment of Inspector of Medical Services; and what were the particular duties performed by this officer which were not already performed, and had been in the past, by administrative army medical officers of divisions and districts.—Mr. **HALDANE** answered: The appointment of Inspector of Medical Services was made on the recommendation of the Inspector-General of the Forces with a view to placing the medical services in line with the other arms of the service in regard to independent inspection. The special duties of the inspector are to report to the Army Council as to the manner in which the sanitary and administrative work of the army is being carried out and to assist in coördinating methods of medical inspection. These duties are fully set forth in paragraph 26, King's Regulations.

The Army Estimates.

Mr. **HALDANE**, in making his annual statement on the Army Estimates, made several allusions of interest to the medical branch of the service. He said that there would be funds available to be expended on special manœuvres in the Southern Command to test the efficiency of the Army Medical Service in the field. Speaking of the Territorial Forces, he said that the county associations had done good work during the year. In this connexion he remarked that the Red Cross work was being brought into line with the work of the associations by the establishment of medical units for the purpose of conveying the wounded from the front to the general hospitals where, in the event of the invasion of this country, they would be treated. That work was being taken up under the organisation of Sir **ALFRED KEOGH**, Director-General of the Medical Service. What Sir **ALFRED KEOGH** advised had been carried out by all classes, with the result that the country had every prospect of being covered by a network of organisations which would be very valuable for other than war purposes. The first thing that was taught to those who joined the associations, women as well as men, was to enable them to deal with accidents and ordinary medical cases, which he thought was a very valuable piece of training. The Army Medical Corps had done good work in reducing disease and illness. The improvement of hospitals was progressing. This year the enlargement and improvement of Arbor Hill Hospital had been in hand, and next year Chatham and York Hospitals would be dealt with and a new hospital would be commenced at Tidworth. Officers' wards were now being provided at various hospitals. The alterations to provide these at Millbank were in hand. There would be in the future no difficulty in officers obtaining up-to-date accommodation when sick and injured.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 2ND.

Infantile Mortality in Poor-law Institutions.

Mr. **WEDGWOOD** asked the President of the Local Government Board whether he could yet take steps to obtain the information as to the rate of mortality in Poor-law institutions of children between the age of two and five years, and the rate of mortality under one year of age of infants being maintained on outdoor relief, the absence of which was noted and regretted in the reports of the Poor-law Commission.—Mr. **BURNS** answered: The whole question of obtaining more and better statistics on Poor-law matters is receiving attention, but I am not yet in a position to give particulars as to the figures which will be collected with a view to meeting the suggestions of the Royal Commission. I may mention that an inquiry is now being undertaken by Dr. Darwall Smith on behalf of my department as to the causes of mortality among new-born babies.

Disease in Mines.

Mr. **RICHARDS** asked the Secretary of State for the Home Department whether his attention had been called to a report of the medical officer of health to the Ebbw Vale urban district council that certain workmen had died in consequence of a disease they had contracted through the insanitary conditions of the mine they were employed in; and would he instruct the Royal Commission on Accidents in Mines to include in their investigations an inquiry into the sanitary conditions of underground workings.—Mr. **CHURCHILL** replied: My attention had not been previously called to the report referred to, but I will make inquiry into the circumstances of the case. As regards the last part of the question, the honourable Member will find that the Royal Commission deal with the subject of the sanitation of underground workings in their second report and make certain representations.

THURSDAY, MARCH 3RD.

Military Assistant Surgeons in India.

Mr. **HAZLETON** (for Mr. **KETTLE**) asked the Under Secretary of State for India whether the medical diploma which was held to be sufficient for military assistant surgeons in India was also in all cases sufficient to entitle the holder to be registered under the Medical Acts and to be recognised as a qualified medical practitioner in this country.—Mr. **MONTAGU** replied: No, sir.

Mr. **HAZLETON** further asked the honourable gentleman whether the senior assistant professor at the Medical College, Madras, and the senior assistant surgeon at the General Hospital, Madras, were military assistant surgeons; and whether they possessed any additional qualifications for these important positions.—Mr. **MONTAGU** answered: I beg to refer the honourable member to the answer given by my predecessor to a question by the honourable Member for Galway North on Oct. 21st last. The Government of Madras has doubtless satisfied itself that the holders of the posts possess the qualifications necessary to enable them to fill them.

Mr. **HAZLETON** also asked the honourable gentleman whether his attention had been called to a resolution unanimously adopted at a meeting of members of the medical profession, held under the auspices of the Bombay Medical Union, submitting that the present system of reserving all important posts in the medical service of India for military officers of the Indian Medical Service had led to the entire exclusion from these posts of Indian civil doctors, however high their qualifications; whether he was aware that the present system caused much discontent and was the occasion of unnecessary expense; and whether he could hold out any hope of early reform.—Mr. **MONTAGU** replied: The Secretary of State has not seen the resolution referred to. From answers given to previous questions and from the papers presented to Parliament last year, the honourable Member is aware that action has been taken with a view to increasing the number of Government medical appointments held by unofficial medical men in India. The process must inevitably be a slow one, and the Secretary of State is not in a position to make any further statement at present.

Society of Apothecaries of London Bill.

The Society of Apothecaries of London Bill was on the paper for second reading as a private Bill.

The SPEAKER said: With reference to this Bill, it is one which seeks to empower the Society of Apothecaries of London to grant diplomas in sanitary science, public health, State medicine, school hygiene, and tropical medicine, and also for dentistry and dental surgery, and for that purpose to hold examinations. I have considered the matter very carefully and I have come to the conclusion that this is a Bill which ought not to proceed as a private Bill, but must proceed as a public Bill as it deals with public interests.

The order for the second reading was discharged and the Bill was withdrawn.

The Investigation of Tropical Diseases.

In considering in Committee of Supply a supplementary estimate of £57,000 for sundry colonial services, the discussion turned on a sum of £1000 for the purposes of pathological research.

Sir WILLIAM COLLINS said that this modest sum of £1000 was to be devoted to scientific research as to the nature of certain tropical diseases and was a new departure, which he hoped would be supported on all sides of the House. He should, however, like to ask the Home Secretary, who, he understood, was taking charge of the vote that afternoon, a question as to the object to which this sum was to be devoted, and also as to the manner in which it was proposed to spend it. Probably honourable Members who took an interest in this question were aware that largely owing to the Tropical Schools of Medicine at Liverpool and Greenwich great advances had been made in recent years in discovering the causes of such diseases as sleeping sickness, yellow fever, and malaria. He hoped that in any further investigation that might be made under the authority of the Colonial Office due regard might be had to some previous investigations made by the Royal Society and also by the Portuguese Government, because he thought that if regard was had to some of the previous reports certain pitfalls might be avoided in further researches. He should like to know whether it was proposed to include in this investigation not only the question of diseases of men but also that of the diseases of animals—diseases prevalent both on the East and on the West Coast of Africa. There was, for instance, a disease supposed to be communicated by wild animals to domestic animals. This particular parasite was supposed to be communicated by some species of fly. It was not manifest itself in the case of the wild animal, and it had no disease-producing effect until it was communicated to the domestic animal by some sort of fly. He therefore would like to know whether the diseases of animals, as well as those of men, were to be included in the scope of this investigation. There was also the question of the African horse fever to which Professor Koch had devoted great attention. Costly investigations had already been instituted into the pathology of African horse fever, but he believed that up to the present those investigations had proved largely unsatisfactory. The system of inoculation against that disease had practically turned out to be useless, and some other methods of prevention were now under consideration. He should like further to ask the right honourable gentleman as to the mode in which the grant would be expended. Was it purposed to utilise the Royal Society for the purpose? Would one of the universities be asked to administer the grant—the University of Liverpool or that of London, both of which were well qualified to send out persons skilful in the investigation of tropical disease, or was it proposed to deal with the matter through the Colonial Office? If so, he trusted that the right honourable gentleman would see that those who were put on the task were not exclusively bacteriologists, but were able to take philosophic views on the natural history of the disease. He hoped that it was not proposed to send out investigators to make merely laboratory experiments. Let them have men with wide philosophic views. He was not taking up a critical attitude with regard to this vote. He was simply asking for further information. He entirely approved of the action of the Colonial Office in initiating this new form of expenditure.

Mr. REES expressed complete concurrence with what the honourable Member for West St. Pancras had said as to the manner in which the grant should be expended.

Mr. J. A. GRANT spoke on the question of sleeping sickness in Central Africa. He thought that he was right in saying that although medical science had discovered what brought about the disease it had not discovered the cure. All that it had been able to do so far had been to remove the native from the infected area. He wished to urge on the Government that no money should be spared in dealing with this appalling scourge which affected the population of Central Africa. He should like to know whether there were signs of the disease spreading down the valley of the Nile or in the Protectorate of Nyassaland. He should like also to ask the Government whether they were acting in coöperation with the Governments of the neighbouring States, with the Egyptian Government and with the German East African officials, as well as with those of the Congo State. He was sure if the right honourable gentleman could tell them that that was being done the information would be most acceptable to the House.

Mr. CHURCHILL said: I share to the full the feeling of the honourable Member who has just addressed the House as to the immense importance of dealing with sleeping sickness by every means in our power and by concerted action with other Powers. Anything more tragic or melancholy than the ravages of this disease amongst the populations of Uganda it is hardly possible to imagine. As the honourable gentleman probably knows, the late Governor of Uganda, Mr. Hesketh Bell, took very effective measures on a gigantic scale to try to check the disease in Uganda itself. As soon as it was discovered that it was spread by the mosquito carrying it from one infected person to another it was possible to adopt some policy against the disease. In order that the disease should really have full play, it is necessary you should have not only the fly from one infected person to another but also the environment suitable to the fly which is to be found in the bushes hanging over the water. If we were able to break any of these conditions the fell charm ceases to work. I have personal experience of that. What has been done throughout Uganda by a tremendous act of administration has been to cut down all the bushes and grass wherever it is necessary to go to the lake, and where that is not possible the population has been moved bodily back to some distance from the lake. We believe that will have a decided effect in stopping the ravages of the disease. But it will do no good to the people at present dying from the disease. The disease is curable in certain circumstances where certain special efforts are used and where certain advantages are at the disposal of the surgeon; but for the great mass of the infected population, numbering many thousands, I am afraid that only a slow and painful death can be the outcome. The statistics of mortality have not undergone any marked decline, and they will not do so for a short time because we are still passing through the period when those who were infected years ago have still to succumb to the disease. Infected people are, however, being isolated and measures are being taken to separate the population from the area of the infecting fly. That is only one instance of exertions which are being made to deal with this scourge. I cannot speak with anything like precisely full information of the affairs of the Colonial Office, but I certainly have every reason to believe that concerted action with other protectorates liable to the ravages of this disease is being taken, and that they are being fully apprised of the best methods of combating the flies and of dealing with the persons already infected. This is, of course, a matter of the highest consequence to the Governments which we have scattered about Africa and also to the German Protectorates and to the Portuguese and Congo States. The committee over which Lord Cromer is presiding and on which will be found the greatest practical authorities in regard to tropical diseases, is only another instance of the extension of the policy which His Majesty's Government is pursuing in dealing with these diseases. I cannot speak, of course, with the authority of the honourable gentleman the Member for West St. Pancras (Sir W. Collins), but I understand that the committee is entirely independent of the two Schools of Tropical Medicine, both of which schools receive contributions from the Colonial Office vote, in return for which they do good work. This is purely a committee of research. A vote of £1000 per annum is proposed to be given to it and later on there will come another £1000 from some of the African colonies. The committee will send two very skilled investigators, one to the East Coast and the other to the West Coast, to advise and report on any special points on which it may desire information. The inquiry covers the whole region of the diseases which are conveyed by insects, not only those which affect man but those which affect animals and plants. I am quite sure that all the Members of the House, wherever they sit, who take an interest in the scientific treatment of tropical diseases, will appreciate that in developing more highly the power of research, which is now possessed by the Colonial Office, and that by calling this new committee into being we take an important step forward—far more than the comparatively small sum of money which is involved would indicate—an important step forward which may conceivably be of priceless advantage, not only to our own fellow-countrymen who are serving beyond the seas, but to the great mass of the aboriginal population committed to their charge.

Mr. GEORGE GREENWOOD asked the Home Secretary whether any of the money in the vote was to be devoted to vivisectional experiments. He asked that question because a certain series of these experiments had been carried out which involved an enormous amount of suffering on dogs and other animals.

Mr. TOMKINSON, speaking as a member of the Royal Commission on Vivisection, said that the experiments in question had been carried out not in England but in a laboratory in Khartoum. With regard to the interesting experiments on the subject of the extirpation of insects which carried, or were supposed to carry, infection from one animal to another or from one person to another, the Commission had some interesting evidence brought before it of an experiment which was made by a certain number of people headed by a medical man, who went into an infected district in the marshes. They divided themselves into two bodies, one being clothed in such a way that the insects could not penetrate to them and the other not being protected. The result was that several of those who were not protected were attacked by insects, and one of them, a medical man, actually died, and certainly it was extremely interesting to hear that by the removal of brush vegetation and more particularly by the drainage of the country that source of infection could be very largely decreased, and the expenditure of this money would be very well laid out.

Mr. CHURCHILL said: I will just answer the question which has been put to me in two or three sentences. I do not apprehend myself that it is intended to put this money to the purpose which my honourable friend, the Member for Peterborough, fears. The methods of research of the committee will probably be more of a theoretic nature than in the nature of experiments of the kind which he dislikes so much. I cannot possibly make any pledge on this subject which should keep the committee off from any line of inquiry which its members may think it advisable to have, but if they were to embark on any such experiments then the matter would come back to me in my capacity as Home Secretary in watching over the working of the Vivisection Act, and I should certainly be guided by a desire to minimise as far as possible the sufferings of dumb animals, while at the same time making sure that the advance of science was not impeded.

Dr. ADDISON remarked that he was very pleased that the right honourable gentleman had assured the House that, whilst deprecating any needless cruelties, the hands of this committee would not be in any way tied. It was known that sometimes experiments could be carried on for a long time without apparently any hope of success, and yet eventually years of patient and to all appearance hopeless effort might be rewarded by great success. The striking thing to him (Dr. Addison) about the vote was its smallness. He thought the experience of the Americans in their endeavour to construct the Panama Canal showed very well how research in tropical diseases did enrich an empire. The right honourable gentleman pointed out that an officer would be sent to East Africa and another to West Africa, and he should only like to express the hope that the results of their labours would be such that the Government would be encouraged to send out not one but 20 to each of our dominions in the neighbourhood of the Congo. Then it would, he thought, be found that the richest of these regions would be more available for the merchants and traders of this country. One aspect of this work might receive more extended consideration, and that was the coördination of the various efforts which were being made in different parts of the world in researches of this kind. Workers and governments suffered very much sometimes from not knowing what other people were doing, and he thought that £1000, or £10,000 for that matter, might be spent in collecting and coördinating the information derived from workers in all parts of the world. Finally, he would express the hope that the committee would not interpret the word "entomological" in the strict sense. In some diseases workers set out with the idea that the work was entomological in its character. He hoped that the committee would interpret the word broadly. He cordially supported this vote and hoped that next year it would be ten times as large.

Mr. REES, speaking again in support of the vote, observed that he had reason to believe that there had actually been one case of sleeping sickness in Nyassaland.

The vote was agreed to.

MONDAY, MARCH 7TH.

The Lunacy Act, 1890.

Mr. PICKERSGILL asked the Secretary of State for the Home Department whether he had now inquired into the circumstances disclosed in the action of Fowler *v.* Grant, tried at the Manchester Assizes a fortnight ago, in which it appeared that a person now admitted to have been perfectly sane was committed to a lunatic asylum, and there treated as a lunatic for upwards of a year, and especially to the observations of Mr. Justice Walton that a man or woman, not a pauper, might be taken to the workhouse, shut up in an imbecile ward, and then declared to be a lunatic and placed in a lunatic asylum, without any public inquiry, any hearing before a magistrate, or any notice of what was going on; and whether he would consider the advisability of making Inquiry, by means of a Select Committee or otherwise, into the working of the Luncy Act, 1890.—Mr. MASTERMAN (on behalf of Mr. CHURCHILL) replied: The Secretary of State has seen reports of the case and has made inquiry. He is advised by the Commissioners in Lunacy that the procedure in connexion with the plaintiff's removal to an asylum was regular throughout. The action was settled by an agreement between the private parties, on which he can express no opinion, but he may say that he agrees with the Commissioners in Lunacy that when there is opportunity for legislation Section 13 of the Lunacy Act, 1890, should be amended so that a patient admitted under that section should have the same right to see a justice after admission as is conferred upon a private patient under Section 8.

Mr. PICKERSGILL asked in how many cases had the Lord Chancellor empowered the chairman of the board of guardians of a union (in lieu of a justice of the peace) to sign orders for the reception of persons as pauper lunatics in institutions for lunatics, in pursuance of Section 25 of the Lunacy Act, 1891; what were the names of the unions in which this had been done; and in how many cases had such an application been made to the Lord Chancellor and refused.—Mr. MASTERMAN replied: The Secretary of State is in communication with the Lord Chancellor on this subject.

TUESDAY, MARCH 8TH.

Invaliding in the Army for Tuberculosis.

In Committee of Supply on Army Estimates,

Mr. G. H. ROBERTS raised the question of men invalided from the army for tuberculosis. He said that a Committee had been set up to consider this subject, and he would like to know whether any progress had been made in regard to it. If so, was it possible to give the House any indication whether steps had been taken to carry out the recommendations of the Committee? The Committee held that the present system could not be preserved. At present men found to be suffering from tuberculosis were discharged from the army. That was not only harsh and unjust, but it was also inimical to the public health, when the soldiers had to return to their homes. One suggestion considered by the Committee was that the War Office should establish sanatoriums. The objection to that scheme was that it would be costly and the men's relatives would be unable to visit them. Another suggestion was that the War Office should enter into bargains with civil sanatoriums to treat soldiers discharged as suffering from tuberculosis. Money spent on such a plan would be well spent. It was estimated that the total cost of dealing with the whole of the men who were discharged from the Army on this account need not exceed £20,000.

No official reply had been given when the debate was adjourned.

WEDNESDAY, MARCH 9TH.

The Disinfection of Schools.

Mr. RAMSAY MACDONALD asked the President of the Board of Education whether the practice adopted in Scotland, and set out in the memorandum entitled the cleansing and disinfecting of schools, was enforced in England; and, if not, if he would explain why such precautions should not be observed.—Mr. RUNCIMAN replied; The Code of Regulations for Public Elementary Schools requires that the school premises must be healthy and must be adequately lighted, warmed, ventilated, cleaned, and drained. The Board of Education have not up till now put forward any specific recommendations as to methods of cleansing or disinfection. They are confident, however, that adequate precautions will be observed in this respect if the local education authorities act in coöperation with the local sanitary authorities.

BOOKS, ETC., RECEIVED.

CABLE PRINTING AND PUBLISHING CO., LIMITED, London.

"Garden Life" Year Book and Who's Who [in Horticulture. Price 1*s.* net.

CASSELL AND COMPANY, LIMITED for LETTS'S DIARIES COMPANY, LIMITED), London, New York, Toronto, and Melbourne.

Letts's Nurses' Report Book and Diary for 1910. Price 2*s.* net.

CHURCHILL, J. AND A., London.

A Textbook of Nervous Diseases. By William Aldren Turner, M.D. Edin., F.R.C.P. Lond., and Thomas Grainger Stewart, M.D. Edin., M.R.C.P. Lond. Price 18*s.* net.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LXIII., being Vol. XLVIII. of the Third Series. Price not stated.

The Practice of Surgery. By Walter George Spencer, M.S., M.B. Lond., F.R.C.S. Eng., and George Ernest Gask, F.R.C.S. Eng. Price 22*s* net.

A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools. Issued by the Medical Officers of Schools Association. Sixth edition. Price 1*s.* net.

The Malarial Fevers, Hæmoglobinuric Fever and the Blood Protozoa of Man. By Charles F. Craig, M.D., Captain, Medical Corps, U.S. Army. Price 20*s.* net.

COLLINGRIDGE, W. H. AND L., London.

Mushrooms and their Cultivation. By T. W. Sanders, F.L.S. Price 1*s.* net.

CONSTABLE AND CO., LIMITED, London. (HOUGHTON MIFFLIN COMPANY, Boston and New York.)

Preventable Diseases. By Woods Hutchinson, A.M., M.D. Price 6*s.* net.

DAVIDSON, F., AND CO., London.

Electrical Treatment for General Practice. By F. Stewart Povah and F. Davidson. Price not stated.

FISCHER, GUSTAV, Jena.

Die Hämatologische Technik. Von Dr. Herm. Schridde und Dr. Otto Naegeli. Price, paper, M. 3.60; bound, M. 4.50.

Die Erkrankungen des Blinddarmanhanges (Processus Vermiformis). Von. Prof. Dr. med. Carl Winkler. (Aus dem Königlich Pathologischen Institut zu Breslau. -Direktor Geh. Med.-Rat. Prof. Dr. Ponfick.) Price M.18.

FROWDE, HENRY, London. (For THE BRITISH ACADEMY.)

The British Academy. The Interpretation of Evolution. By W. R. Sorley, Fellow of the Academy. (From the Proceedings of the British Academy, Vol. IV.) Price 1*s.* 6*d.* net.

FROWDE, HENRY, London.

The Hospital Service Book. Containing Short Services and Hymns for Use in the Wards of Hospitals and Infirmaries. Revised and enlarged. By Charles Parkhurst Baxter, M.A. Nineteenth thousand. Dedicated, by permission, to the Lord Bishop of London. Price 1*s.* net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Emergencies of General Practice. By Percy Sargent, M.B., B.C. Cantab., F.R.C.S., and Alfred E. Russell, M.D., B.S. Lond., F.R.C.P. Price 15*s.* net.

HIRSCHWALD, AUGUST, Berlin.

Veröffentlichungen aus dem Gebiete des Militär-Sanitätswesens. Herausgegeben von der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums. Heft 42. Die altrömischen Militärärzte. Von Dr. Haberling. Price M.2.80.

KARGER, S., Berlin.

Jahrbuch für Kinderheilkunde und physische Erziehung. Unter Redaktion von O. Heubner und Th. Escherich. 71, der dritten Folge 21. Band. Heft 2. Ausgegeben am 1 Februar, 1910. Price not stated.

KEGAN PAUL, TRENCH, TRÜBNER AND CO., LIMITED, London.

Colour-Blindness and Colour-Perception. By F. W. Edridge-Green, M.D., F.R.C.S. Second edition. Price 5*s.*

KIMPTON, HENRY, London.

Kimpton's Essential Series. Essentials of Medical Electricity and Radiography. By Edward Reginald Morton, M.D., C.M. (Trin. Tor.), F.R.C.S. Edin. Second edition. Revised and enlarged. Price 6*s.* net.

KING, P. S., AND SON, London.

London Pride and London Shame. By L. Cope Cornford. Price 6*s.* net.

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig.

Das Altern, seine Ursachen und seine Behandlung durch hygienische und therapeutische Massnahmen. Ein Handbuch für eine rationelle Lebensweise. Von Dr. A. Lorand, Badearzt in Karlsbad. Zweite, erweiterte Auflage. Price, paper, M.5; bound, M.6.

LAURIE, T. WERNER, London.

A Winter's Comedy. By Halliwell Sutcliffe. Price 6*s.*

LAYTON, CHARLES AND EDWIN, London.

An Elementary Lecture on the Theory of Life Assurance. Delivered at a Meeting of the Birmingham Insurance Institute, 11th January, 1889. By W. J. H. Whittall, F.I.A., F.A.S. Second edition, revised. Price 2*s.* net.

LEWIS, H. K., London.

Surgery of the Brain and Spinal Cord. Based on Personal Experiences. By Prof. Fedor Krause, M.D., Geh. Medizinalrat. Translated by Prof. Herman A. Haubold, M.D. Vol. I., Price 25*s.* net.

Atlas of External Diseases of the Eye for Physicians and Students. By Dr. Richard Greeff. Only authorised English Translation. By P. W. Shedd, M.D. Price 42*s.* net.

LIBRERIA GENERAL DE VICTORIANO SUÁREZ, Madrid.

Fisilogía Patalógica de la Digestión. Por Juan Madinaveitia. Precio: 6 ptas. en Madrid y 6.50 provincias.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., Philadelphia, U.S.A., with Collaboration. Vol. IV. Nineteenth Series, 1909. Price not stated.

LIVINGSTONE, E. AND S., Edinburgh.

The Nurses' Guide to Prescription Reading. By J. G. H. Price 1*s.* 6*d.* net.

LONGMANS, GREEN AND CO., London, New York, Bombay, and Calcutta.

English Poor Law Policy. By Sidney and Beatrice Webb. Price 7*s.* 6*d.* net.

Rhinology. A Text-book of Diseases of the Nose and the Nasal Accessory Sinuses. By Patrick Watson Williams, M.D. Lond. Price 15*s.* net; without stereoscope, 12*s.* 6*d.* net.

Cleanliness *versus* Corruption. By Lord Ronald Sutherland-Gower. Price 6*d.*

MACMILLAN COMPANY, THE, New York.

Bacteriology for Nurses. By Isabel McIsaac. Price 5*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Archer, T. C. R., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

Butler, T. Harrison, M.D., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Warneford, Leamington, and South Warwickshire Hospital.

Child, W. N., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

Chown, Francis, M.B. Lond., L.S.A., D.P.H. Lond., has been appointed Medical Officer of Health for the Helston (Cornwall) Rural District Council.

Collins, R. E., M.B., Ch.B. Edin., has been appointed First Assistant Medical Officer to the Marylebone Board of Guardians.

Corbett, W. Victor, M.R.C.S., L.R.C.P. Lond., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital, and also Clinical Assistant in the Mental Department.

Dean, George, M.B., C.M. Aberd., has been appointed Examiner in Pathology and Medical Jurisprudence in Queen's University, Belfast.

Hepburn, Malcolm L., M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal London Ophthalmic (Moorfields) Hospital.

Howarth, W. G., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Senior Clinical Assistant in the Throat Department and in the Ear Department at St. Thomas's Hospital.

McCartan, M. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rostrevor District of the county of Down.

McConnell, Adams A., M.B., B.Ch., B.A.O. Dub., has been appointed Assistant Surgeon to the Richmond Hospital, Dublin.

Mears, J. B., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Leuchars District of the county of Fife.

Newcomb, C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Children's Medical Department at St. Thomas's Hospital.

Pink, W. L., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Throat Department and in the Ear Department at St. Thomas's Hospital.

Routh, L. M., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Children's Medical Department at St. Thomas's Hospital.

Skene, T. A., M.D., C.M. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Nigg District of the county of Kincardine.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Aylesbury, Royal Buckinghamshire Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.

Bath, Royal Mineral Water Hospital.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and washing.

Bath, Royal United Hospital.—House Physician. Salary £80 per annum, with board, lodging, and washing.

Birmingham, Queen's Hospital.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Brighton, Sussex County Hospital.—House Physician, unmarried. Salary £70 per annum, with board, apartments, and laundry.

Bristol General Hospital.—House Physician, Casualty House Surgeon, and Assistant House Physician for six months. Salary £60, board, residence, &c.

Cancer Hospital, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

Cheltenham General Hospital.—House Surgeon, unmarried. Salary £70 per annum, with board and lodging.

Denbigh, Denbighshire Infirmary.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Devonport, Royal Albert Hospital.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

Dublin, Royal Victoria Eye and Ear Hospital, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

Evelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.—Clinical Assistants.

Farningham and Swanley, Kent, Homes for Little Boys.—Medical Officer, unmarried. Salary £100 per annum, with board, residence, and laundry.

Hull, Royal Infirmary.—House Physician, unmarried. Salary £100 per annum, with board and apartments.

Huntingdon County Hospital.—House Surgeon. Salary at rate of £80 per annum and all found.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Honorary Physician. Also Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

Leeds General Infirmary.—Assistant Clinical Pathologist. Salary £150 per annum.

Liverpool, Royal Southern Hospital.—Honorary Surgeon.

London (Royal Free Hospital) School of Medicine for Women, 8, Hunter-street, Brunswick-square, W.C.—Lecturer in Gynæcology (female).

Macclesfield General Infirmary.—Junior House Surgeon. Salary £60 per annum, with board and residence.

Manchester Royal Infirmary.—House Physician, unmarried, for six months. Board and residence provided.

Metropolitan Hospital, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salary of two former at rate of £40 per annum and of two latter at rate of £20 per annum. Also Resident Anæsthetist. Salary at rate of £80 per annum.

Middlesbrough, North Riding Infirmary.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

Middlesex Hospital, W.—Medical Registrar.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.—Clinical Assistants for six months.

Norwich, Jenny Lind Infirmary for Children, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, apartments, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

Nottingham General Hospital.—Honorary Physician.

Poole, Cornelia Hospital.—Honorary Anæsthetist.

Poplar, Parish of.—Medical Officer. Salary £130 per annum.

Prince of Wales's General Hospital, Tottenham, N.—Clinical Assistant.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing. Also Pathologist and Registrar. Salary £200 per annum. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Surgeon in Charge of Out-patient Department for the Ear, Nose, and Throat.

Reeth Union and Rural District Council, Yorkshire.—Medical Officer and Medical Officer of Health. Salary £95 per annum.

Rotherham Hospital and Dispensary.—Assistant House Surgeon. Salary £80 per annum, with board, lodgings, and washing.

Royal Hospital for Diseases of the Chest, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

Royal Institute of Public Health.—Harben Demonstrator of Bacteriology and Comparative Pathology. Salary £250 per annum. Also Junior Demonstrator of Bacteriology and Comparative Pathology. Salary £100 per annum.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

Salford Union Infirmary, Hope, Pendleton.—Two Resident Medical Officers. Salary £120 per annum, with apartments, attendance, and rations.

Seamen's Hospital Society, Dreadnought Hospital, Greenwich, S.E.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Sheffield Royal Infirmary.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.

Sheffield University.—Demonstrator in Anatomy. Salary £150 per annum.

Shrewsbury, Salop Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence. Also House Physician. Salary at rate of £70 per annum, with board and apartments.

Stafford, Staffordshire General Infirmary.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

Torquay, Torbay Hospital.—House Surgeon. Salary £100 per annum, with residence and board.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

Walsall and District Hospital.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Montrose, in the county of Forfar; at Lichfield, in the county of Stafford; at Markfield, in the county of Leicester; at Snaith, in the county of York; at Burntisland, in the county of Fife; and at Whaley Bridge, in the county of Chester.

Births, Marriages, and Deaths.

BIRTHS.

Cummins.—On March 4th, at The Croft, Putney Common, the wife of Major S. Lyle Cummins, R.A.M.C., of a son.

Jamison.—On March 5th, at The Chantry, Horsham, the wife of Reginald Jamison, F.R.C.S., of a son.

Smith.—On Feb. 28th, at Manor-gardens, Clapham, the wife of T. W. Smith, M.R.C.S., L.D.S., &c. (née Flower), of a daughter.

DEATHS.

Collinson.—On March 8th, at 32, Winckley-square, Preston, Lancs, Clara, wife of F. W. Collinson, M.D. Edin., M.R.C.P. Lond., F.R.C.S. Edin.

Eyre.—On Sunday, March 6th, Leslie Graeme, aged three months, the youngest son of Dr. and Mrs. John Eyre.

Fish.—On March 7th, at Denver, Mill-road, West Worthing, Cecil Edgar Fish, B.A., M.B., B.C. Camb., M.R.C.S., L.R.C.P. Lond., of the Vale of Clwyd Sanatorium, Llanbedr Hall, Ruthin, North Wales.

Wright.—On Feb. 28th, at Markfield, Alfred John Wright, M.R.C.S., L.S.A., aged 47 years.

***N.B.**—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

Notes, Short Comments, and Answers to Correspondents.

THE PREPARATION OF BODIES FOR POST-MORTEM EXAMINATIONS IN PUBLIC MORTUARIES.

At last week's meeting of the Finsbury borough council a discussion arose with reference to the duties of the keepers of the local mortuaries. The public health committee reported that its attention having been drawn to the fact that the practice of the keepers of the mortuaries in assisting medical men at post-mortem examinations entailed work which is in excess of their duties as laid down by the council, it was resolved that a copy of the regulations adopted by the council in July, 1904, for observance by the mortuary keepers in the discharge of their duties be permanently displayed in each mortuary, and that the keepers be required to adhere strictly to such regulations, it being specially pointed out to them that their duties in the post-mortem room do not extend to the opening of bodies for examination. Councillor Dr. W. A. Dingle protested against the action of the committee, and moved that the matter be referred back for reconsideration. Alderman Miller seconded. Councillor Phillips remarked that if medical men wished to have the work of opening the bodies done for them they must employ suitable men, and not have the services of the council's servants. Councillor Owen Richards, chairman of the committee, said he could assure the council that the committee was fully justified in the action it took, being based on the frank confession of the mortuary keeper. It was no part of the keeper's duty to prepare bodies for examination. Councillor Dingle maintained that it was the proper thing for the keeper to open the body and prepare it for the medical man, who should be there at the time. It was also the duty of the keeper to sew the body up after the examination and make it decent. It was understood throughout the medical world that there must be a man on the spot to do this work. Councillor Richards said the keeper admitted to the committee that he did a very great deal towards tho preparation of the body without the medical man being present. Councillor Dingle's amendment was lost, and the action of the committee was approved by the majority of the meeting.

AN EXEMPLARY SENTENCE ON A PURVEYOR OF DISEASED MEAT.

After several adjournments a Leicester cattle-dealer named Arthur Cart was recently convicted and fined £100 with £25 costs at the Clerkenwell police court, upon a summons relating to the depositing for sale of four sides of veal which were found to be tuberculous and unfit for human food. Another summons against a defendant named Watson in respect of the same meat was withdrawn. The serious nature of the offence lay not merely in the fact that the meat was diseased and had been dressed to conceal its defects, but rather in the course apparently adopted by an ingenious defendant in order to baffle investigation and in the nature of the defence, which consisted in an elaborate attempt to prove that the meat had in fact been consigned by a man named Morris, who used the name of Jennings in trading in meat with Cart under an arrangement between them. Witnesses were called who deposed to knowing Morris, who was not Cart, but who placed on a field belonging to Cart animals of whose carcasses, it was suggested, the veal in question formed part. A bank clerk from Brighton also related that he knew Morris, who was not Cart. Cart was not, however, able to produce Morris or Jennings, and the prosecution claimed to have traced the meat to the other defendant, Watson, who consigned it in the name of "Jennings" from a shop with no name shown outside it. Further, the prosecution showed that cheques made out to "T. Jennings" had been passed through Cart's banking account, that the address used by "Jennings" was identical with that of Cart's brother, and that the shop where Watson was seen was in the occupation of Cart himself. Watson was stated to have admitted selling meat for a man whom he called Jennings, and a London salesman had been introduced by Cart's brother to a "Mr. Jennings." The magistrate (Mr. Bros) was satisfied that Cart was, in fact, the beneficial owner of the veal and that he had acted as such, and in convicting and in imposing the severe penalty mentioned he referred to the obstacles placed in the way of the court in ascertaining the true facts. On behalf of Watson it was said that he had accepted a small commission for sending off the meat for the supposed Jennings, and that he had only seen it when packed.

THE PREPARATION OF "BEESWAX AND TURPENTINE."

At a recent inquest at Westminster it was proved that the deceased, a cook in domestic service, had died from severe burns sustained in the kitchen of her master's house in Bramham-gardens. At the suggestion of the parlourmaid, the housemaid had taken some beeswax and turpentine to the kitchen in order that the former might be more rapidly dissolved in the latter through their being heated. The housemaid was about to place tho vessel containing the two on the kitchen range, but the deceased caused her to set it upon the gas stove instead. A few minutes later, after the housemaid had left the kitchen, screams were heard and the master of the house and his daughter rushing to the kitchen were only in time to do their best to save their servant from immediate death by beating out the flames which enveloped her. Precisely how the accident occurred was not to be ascertained, but it ended fatally, the poor woman dying in St. George's Hospital three days later, her explanation being, "I tried to save the house; I did my best." As such accidents have occurred before, and as they may be occasioned by an idea on the part of maids or their mistresses that heat is necessary in order to make the mixture known as "beeswax and turpentine," we take the opportunity to observe that this is not the case. Beeswax can be dissolved in turpentine by cutting it up and by letting it stand in the liquid without any heating. Of course, in the absence of warmth the process takes longer, perhaps by 24 hours or even more, according to how thoroughly the cutting-up process is performed, but at any rate it is absolutely unnecessary to risk a conflagration, with possible loss of life, by so appallingly risky a transaction as placing a vessel of whatever construction upon a kitchen range or gas stove. It is a curious fact that although beeswax and turpentine are employed constantly for floors and furniture no simple and inexpensive combination of them for such a purpose is habitually kept for sale by oilmen. There are more elaborate compositions, liquid and otherwise, on the market, which are possibly more profitable to deal in, but they are better suited for application to articles of furniture and ornamental woodwork than for a parquet floor.

WANTED, A HOME.

To the Editor of The Lancet.

Sir,—Can any of your readers tell me of a home where I can send a case of fractured vertebra in a female to receive daily massage. The patient's circumstances are very poor, but if she could have continuous treatment she would perhaps become a useful member of society. Her age is 20.

I am, Sir, yours faithfully,

Arthur B. Rogers.

The Red House, Cliffe-at-Hoo, Kent, March 7th, 1910.

IMPROVED MERCURIAL INJECTIONS.

M. Desmoulières and M. Lafay, in a recent number of *L'Union Pharmaceutique*, have suggested a number of improved formulæ for the preparation of mercurial injections. Of the soluble salts of mercury they consider the benzoate of mercury to be the least painful, when rendered hypertonic by the addition of sodium chloride. It is prepared from freshly made mercury benzoate, dissolved in sterilised distilled water to form a 1 per cent. solution, with the addition of 2·5 per cent. of sodium chloride. The solution is injected daily in doses of 30 to 45 minims. This formula was devised by Professor Gaucher, who preferred a 1 per cent. solution to any other strength on account of its stability and the ease with which it is tolerated by the patient. In order to render the injection perfectly painless, the addition of cocaine has been suggested, but this addition has many objections. It is better to introduce sufficient pure saccharose, as suggested by Fleig, to produce an isotonic solution. A very satisfactory injection may be prepared in the following way:—Dissolve recently prepared mercury benzoate 1 gramme, pure sodium chloride 1 gramme, and pure saccharose 10 grammes in sufficient sterilised distilled water to produce 100 cubic centimetres of solution. It is important to avoid reducing the mercuric salt during the process of sterilisation, and on this account it is preferable to filter the solution through a porous cylinder rather than use an autoclave. The same formula is advantageously used in the preparation of injections of biniodide of mercury, which usually cause the patient considerable pain. Such a solution is best prepared by dissolving recently made mercuric iodide 1 gramme, pure dry sodium iodide 1 gramme, and pure saccharose 10 grammes, in sufficient sterilised distilled water to produce 100 cubic centimetres of solution. Injections made in this way are less painful than those prepared with the addition of cocaine.

THE INTER-HOSPITAL RUGBY CUP-TIES.

Semi-Final Round.

St. Bartholomew's Hospital v. *London Hospital.*

This semi-final was very nearly a great game. It was all wonderfully hard and fast and keen. It was, too, a battle of styles. Bart's came to the game with faith in her forwards, in the hard tackle, in bullocking individualism, in the virtue of vigour. These things were the creed of the side, and they are the secret of the popularity of the competition. London rely on other things. The splendid excellence of the half-backs is the pivot of the team. Heale and Lindsay are both colonials and give of their best when playing together. The Scotch international works the scrum, while Heale, who skippers the side, is quite another Cowey. Behind them is an international three-quarter line of which the halves make the most. The London pack, though strengthened by Morton, who led the English forwards in the Welsh match, was no match for the Bart's heavyweights. The latter dominated the game. They were always in possession. In the loose they gave London no rest, and so for three-parts of the game Bart's attacked. But the method of attack was crude. The London forwards were weak, but the defence was true. The colonial contingent found few opportunities of attack, but they never refused to tackle. Once the ball came out to Heale and then we saw a fine movement developed with amazing rapidity. The ball went along the line, each man drawing an opponent until it came to Adams. It was London's only real chance in the game and the New Zealander seized it. Batchelor was over and Adams kicked a goal. That was the only score. It was a triumph of science and opportunism, and many who looked on agreed that the better side lost.

Guy's Hospital v. *St. Thomas's Hospital.*

All old players would welcome the success of St. Thomas's Hospital which was once a power in the land. Few clubs are so rich in tradition, few have done as much for the game. There are signs that the tide has turned. It is some time since Thomas's figured in the final, but there was much in this game that gave generous promise for the future. Guy's won, and deserved to win. Their forwards are very masters in the science of the scrimmage, and the backs have great experience in this competition. But it was no runaway affair. The Thomas's forwards were individually great. They broke up and tackled and dribbled in a way reminiscent of the best days of the team. But they were beaten for possession, and that is the key to attack. Friedlander for St. Thomas's was always in the picture; he went down to meet every rush, and his kicking was invaluable to his forwards. Medlock, the Guy's half, was also in great form, and was well backed up by Jones and Stringer. Friedlander, on the other hand, had to rely in attack on himself. This with the pull Guy's always had in the scrum gave them victory by 22 points to 5.

Erratum.—In a letter on the treatment of headache from Dr. Ernest Young in our last issue in answer to "Cambria" calcium acetate was advised. The drug should have been given as calcium lactate.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

Tuesday.

Pathological Section (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at 8.30 p.m.

Papers:

Dr. W. H. Willcox: Gastric Analysis.

Dr. F. H. Thiele: Observations on the Pathology of Pernicious Anæmia.

Dr. Parkes Weber: A Case of Bile producing Primary Carcinoma of the Liver.

Thursday.

Dermatological Section (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 p.m.

Cases:

Dr. J. H. Sequeira: (1) Keratodermie Blenorrhagique; (2) (with Dr. Graham Little) Pseudo-xanthoma Elasticum.

Dr. Graham Little: Case for Diagnosis.

And other Cases.

Friday.

Electro-therapeutical Section (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 p.m.

Dr. Franz M. Goedel: The Normal and Pathological Stomach and the Intestines shown by X ray Examination (with demonstrations and cinemato-Roentgenograms).

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

Monday.—8.30 p.m., Discussion on the Treatment of Colitis (opened by Dr. H. P. Hawkins and Mr. H. S. Collier).

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

Thursday.—8.30 p.m., Dr. L. Guthrie: Remarks on Hydrocephalus. (Harveian Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

Tuesday and Thursday.—5 p.m., Prof. W. Osler: Angina Pectoris. (Lumleian Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Monday and Wednesday.—5 p.m., Prof. G. Coats: Researches on Congenital Abnormalities of the Eye.

Friday.—5 p.m., Mr. S. Scott: The Physiology of the Human Labyrinth.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. S. E. Dore: Clinique (Skin). 5.15 p.m., Lecture:—Dr. P. Stewart: Paralysis of Motor Cranial Nerves (with lantern illustrations).

Tuesday.—4 p.m., Dr. F. Taylor: Clinique (Medical). 5.15 p.m., Lecture:—Sir Patrick Manson, K.C.M.G.: The Treatment of Chronic Dysentery.

Wednesday.—4 p.m., Mr. R. Jackson: Clinique (Surgical). 5.15 p.m., Sir W. Watson Cheyne, Bart.: On Surgical Cases.

Thursday.—4 p.m., Mr. Jackson Clarke: Clinique (Surgical). 5.15 p.m., Lecture—Dr. J. L. Bunch: Itching Skin Eruptions.

Friday.—4 p.m., Dr. StClair Thomson: Clinique (Ear, Throat, and Nose).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Davis: Otosclerosis; Treatment.

Tuesday.—10 a.m., Dr. Moullin: Gynæcological Operations. 12.15 p.m., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Moullin: Gynæcological Cases.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 p.m., Diseases of Women. 5 p.m., Lecture:—Dr. Beddard: Medicine.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 p.m., Lecture:—Mr. Bidwell: The Surgery of Gall Stones.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Mr. Etherington-Smith: Clinical.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 p.m., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. Howell Evans), 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 p.m., Lecture:—Mr. A. de Prenderville: The Relative Values of Deep, Light, and Incomplete Narcosis.

Wednesday.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. A. H. Pirie).

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel). 4.30 p.m., Lecture:—Dr. A. E. Giles: The Influence of Ovariotomy on Woman's Character.

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Tuesday.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 2.15 p.m., Special Lecture:—Dr. R. Wells: Diseases of the Heart.

Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat. 2.30 p.m., Special Lecture:—Dr. G. Rankin: Migraine.

Friday.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Tuesday.—3.30 p.m., Clinical Lecture:—Dr. G. Holmes: Hemiplegia and its Treatment.

Friday.—3.30 p.m., Clinical Lecture:—Dr. G. Holmes: Hemiplegia and its Treatment.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

Monday.—3 p.m., Clinical Demonstration: Dr. H. Campbell.

Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie.

Wednesday.—3 p.m., Clinical Demonstration:—Dr. F. Palmer.

Friday.—2 p.m., Clinical Demonstration:—Dr. P. Stewart. 5.30 p.m., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

Tuesday.—3.45 p.m., Lecture:—Dr. Atkinson: Nose.

Friday.—3.45 p.m., Lecture:—Dr. D. McKenzie: Labyrinth.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. P. L. Mummery: Colitis.
SATURDAY.—3.30 P.M., Mr. G. Watson: Demonstration of Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—On the Treatment of Skin Diseases.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 9th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 3	30·23	S.	...	87	54	40	40	41	Fine
" 4	30·02	S.E.	...	78	52	39	40	41	Fine
" 5	29·93	E.	...	92	58	41	42	43	Fine
" 6	30 05	S.	...	84	52	43	47	51	Cloudy
" 7	30·10	S.W.	0·03	103	58	45	47	48	Cloudy
" 8	30 03	S.W.	...	64	55	44	48	48	Raining
" 9	29·92	S.W.	0·01	58	53	48	49	51	Cloudy

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Alexandra Nursing Institute, Lond., Secretary of; Messrs. C. Ash, Sons, and Co., Lond.; A. M. O's; Aymard Patent Milk Sterilizer Co., Ipswich; Achter Internationaler Physiologen Kongress, Wien; Dr. W. J. Webb Anderson, Canton; "Alles-Leser," Wien.

B.—Messrs. Blundell and Rigby, Lond.; Mr. C. Birchall, Liverpool; Dr. G. W. Badgerow, Lond.: Messrs. Burroughs, Wellcome, and Co., Lond.; Bovril, Ltd., Lond.; Mr. H. O. Boger, Salisbury; Dr. W. N. Barlow, Egremont; Mr. H. Norman Barnett, Belfast; Mr. William C. Bentall, Lond.; Mr. E. T. Blakeney, Roscommon; Dr. C. G. S. Baronsfeather, Glenageary; Mrs. Bolton, Clanfield; Mr. W. Bernard, Buncrana; British Diamalt Co., Lond.; Sir Lauder Brunton, Bart., Lond.; British Red Cross Society, Lond.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Messrs. Cordes, Hermanni, and Co., Hamburg; Dr. R. N. Cairns, River Falls, U.S.A.; Mr. F. W. Cory, Leeds; Mr. John Cabburn, Lond.; Cheltenham General Hospital, Secretary of; Messrs. F. Comar and Sons, Lond.; G. W. Carnrick Co., New York; Dr. J. Campbell, Harrogate; C. F.

D.—Mr. D. Dempsey, Dublin; Messrs. W. Dawson and Sons, Lond.: Mr. S. Deacon, Lond.; Dr. V. Danulescu, Bucharest; Messrs. F. Davidson and Co., Lond.; Mr. A. Duke, Lond.; Denbighshire Infirmary, Denbigh, Secretary of; Miss Daniel, Epsom.

E.—Messrs. Eason and Son, Dublin; Epsom College, Lond., Secretary of; E. A. W. W.; Essex County Hospital, Colchester.

F.—Mr. T. Jefferson Faulder, Lond.; Miss Fox, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; Mrs. Forster, Westcliff; Messrs. Foster, Brown, and Co., Montreal; Messrs. Ferris and Co., Bristol.

G.—Mr. H. J. Gauvain, Alton; Messrs. Gale and Co., Lond.; Gt. Eastern Railway Co., Lond.; Dr. Reginald Green, King's Norton; Dr. W. Gordon, Exeter.

H.—Dr. James Harper, Lond.; Mr. Somerville Hastings, Lond.; Haydock Lodge, Newton-le-Willows, Medical Superintendent of; Mr. T. H. Hewitt, Lond.; Hoffman La Roche Chemical Work Co., Lond.; Messrs. Haasenstein and Vogler, Cologne; Heigham Hall, Norwich, Medical Superintendent of.

I.—Ingham Infirmary and South Shields Dispensary, Secretary of.

J.—Mrs. Johnson, Northallerton.

K.—Messrs. R. A. Knight and Co., Lond.; Dr. A. C. Klebs, Ouchy; Messrs. C. Knight and Co., Lond.; Dr. W. Klinkhart, Leipzig; Messrs. J. Roland Kay Co., Chicago; King Edward's Hospital Fund for London, Hon. Secretaries of; Kettering and District General Hospital, Hon. Secretary of; Dr. Knight, Portobello.

L.—Mr. H. K. Lewis, Lond.; Messrs. Lee and Nightingale, Liverpool; Dr. A. P. Luff, Lond.; Messrs. W. Le Lacheur and Son, Lond.; Mr. T. Laffan, Cashel; Leeds General Infirmary, Manager of; Dr. Carl Leiner, Vienna; London School of Clinical Medicine, Dean of.

M.—Dr. J. C. McVail, Glasgow; Maltine Manufacturing Co., Lond.; Mr. J. Murray, Lond.; Male Nurses' Association, Lond., Superintendent of; Medical Sickness and Assurance Society, Lond., Secretary of; Manchester Royal Infirmary, Secretary of; Mr. J. E. R. McDonagh, Lond.; Dr. Frederick J. McCann, Lond.; Medico-Psychological Association, Lond., Hon. General Secretary of; Dr. Modlinski, Moscow; Manchester Guardians, Clerk to the; Dr. L. MacAuliffe, Paris; *Medical Magazine*, Lond., Manager of; Macclesfield General Infirmary, Secretary of; Mr. R. Mosse, Berlin.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; National Provident Institution, Lond., Secretary of; Nottingham General Hospital, Secretary of; Messrs. Newton, Chambers, and Co., Thorncliffe; Nottingham Medico-Chirurgical Society, Correspond-Secretary of; North Riding Infirmary, Middlesbrough, Secretary of.

O.—Oxford Medical Publications, Lond., Manager of.

P.—Messrs. Peacock and Hadley, Lond.; Mr. F. E. Potter, Lond.; Mr. J. H. Parker, St. Louis; Mr. D'Arcy Power, Lond.; Mr. Norman Porritt, Huddersfield; Public Health and Marine Hospital Service, Washington; Publishers' Association of Great Britain and Ireland, Lond., Secretary of; Messrs. W. Porteous and Co., Glasgow; Messrs. C. Pool and Co., Lond; Messrs. Parke, Davis, and Co., Lond.

R.—Dr. J. D. Rolleston, Lond.; Royal Mineral Water Hospital, Bath, Registrar of; Royal United Hospital, Bath, Secretary of; Royal Hampshire County Hospital, Winchester, Assistant Secretary of; Royal Albert Hospital, Devonport, Secretary of; Royal Buckinghamshire Hospital, Aylesbury, Secretary of; Mr. Arthur B. Rogers, Cliffe-at-Hoo; Messrs. Reitmeyer and Co., Lond.; Messrs. Rebman, Lond.; Royal Institute of Public Health, Lond., Assistant Secretary of; Rotherham Hospital, Secretary of; Royal Victoria Eye and Ear Hospital, Dublin, Registrar of; Messrs. A. Rey and Co., Lyons; Messrs. Reynolds and Branson, Leeds.

S.—Scholastic, Clerical, &c., Association, Lond.; *Sheffield Daily Telegraph*, Lond., Representative of; Mr. A. Saxlehner, Lond.; Messrs. Street and Co., Lond; Sheffield University, Registrar of; Mr. S. Stephenson, Lond.; Prof. M. Allen Starr, New York; Mr. F. L. Simons, Edinburgh; Seltzogene Patent Charges Co., St. Helens; Messrs. Stevens, Buer, and Co., Lond.; Messrs. W. H. Smith and Son, Stafford; Messrs. G. Street and Co., Lond.; *Shrewsbury Chronicle*, Manager of; Sheffield Royal Hospital, Secretary of; Society of Apothecaries of London, Clerk to the; Mr. Fred Smith, Halifax; Sheffield Medico-Chirurgical Society, Hon. Secretary of; Mr. E. H. Sweet, Uckfield; Mr. C. H. Stevens, Plympton.

T.—Sir Edward Troup, K.C.B., Lond.; Mr. A. Toms, Lond.; Torbay Hospital, Torquay, Secretary of.

U.—Mr. H. Urquhart, Lond.

V.—Messrs. Vigot Frères, Paris; Messrs. J. W. Vickers and Co., Lond.; Veterinary Medical Association of Ireland, Dublin, Hon. Secretary of.

W.—Dr. S. F. Wernich, Somerset Strand; Messrs. Willings, Lond.; Messrs. Worthington and Co., Burton-on-Trent; Messrs. R. F. White and Son, Lond.; Messrs. A. J. Wilson and Co., Lond.; Dr. P. D'Erf Wheeler, Lond.; Mr. A. St. J. Wright, Liverpool; Messrs. Widenmann, Broicher, and Co., Lond.; Messrs. W. Wood and Co., New York; W. H.; Warneford, &c., Hospital, Leamington, Secretary of.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. Ackrill, Harrogate; Mr. T. E. Atkins, Langla; A. T. G.; A. M. G.; Ashton-under-Lyne Union, Clerk to the.

B.—General Bond, Londonderry; Messrs. Bennett Bros., Salisbury; Mr. F. J. Breakell, Preston; Dr. S. J. McLean Bradshaw, Dalkey; Messrs. J. Broadbent and Co., Huddersfield; Mr. G. A. Brown, Tredegar.

C.—Mr. W. Crooke, New Brighton; Messrs. A. H. Cox and Co., Brighton; C. H. W.; C. W.

D.—Mr. W. T. Durning, Cramlington; Dr. L. Durno, Lond.; Dr. W. T. Dougal, Pittenweem; Mr. T. V. Devey, Muker; *Die Tabakwelt*, Dresden.

E.—Mr. E. Evans, Felinfach; Dr. J. Eyre, Lond.

F.—Hon. Edith Fitzgerald, Lond.

G.—Captain J. H. P. Graham, R.A.M.C., Wallasey.

H.—Messrs. Hough, Hoseason, and Co., Manchester; Hong-Kong and Shanghai Banking Corporation, Calcutta; Messrs. C. Hearson and Co., Lond.; Mr. J. Heywood, Manchester; Messrs. Hastings Bros., Lond.; H. S.

I.—Mr. R. E. Ingram-Johnson, Stanley; Miss Inge, Haslemere; India Rubber, Gutta Percha, and Telegraph Works Co., Lond.

J.—Mr. E. M. Judge, Chislehurst; J. H.; J. W. G.; Jeyes' Sanitary Compounds Co., Lond.; J. H. H.; Dr. S. Jackson, Lond.

K.—Miss A. D. Kerr, Tauranga; Messrs. Kutnow and Co., Lond.; Kreochyle Co., Lond.; Dr. R. L. Meade King, Taunton.

L.—Mr. D. H. Lambert, Lond.; Mr. S. Lee, Lond.; Dr. J. Lambie, Pentre.

M.—Dr. J. A. Mitchell, Inverness; Dr. J. MacKail, Southport; Mr. L. C. Martin, Hounslow; Captain J. Morison, I.M.S., Dilkusha; Mount Vernon Hospital, Lond., Secretary of; Captain J. P. Murphy, R.A.M.C., Dublin; Medicus, Kensington; M. K. A.

P.—Dr. W. P. Panckridge, Petersfield; Dr. E. Piasecki, Lemberg; Mr. A. Pemberton, Manchester.

R.—Messrs. Ross, Lond.; R. D.; Royal Victoria Infirmary, Newcastle-on-Tyne, Secretary of; Rover Co., Coventry.

S.—Dr. J. A. Stewart, Normanton; Messrs. Spiers and Pond, Lond.; Messrs. Smith and Son, Lond.; Swansea General Hospital, Secretary of; S. P.; *South Wales Argus*, Newport, Manager of; Smith's Advertising Agency, Lond.; Mr. J. L. Smith, Cardiff; Messrs. R. Sumner and Co., Liverpool; Messrs. Squire and Sons, Lond.; Sunnydene, Lee.

T.—T. R. B.

W.—Messrs. Wylcys, Coventry; Messrs. F. Williams and Co., Lond.; Worcester General Infirmary, Secretary of; "Wright," Wallington; White Hart Hotel, Margate, Manager of.

EVERY FRIDAY.

THE LANCET.

PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*			
One Year	£1	1	0
Six Months	0	12	6
Three Months	0	6	6

TO THE COLONIES AND ABROAD.			
One Year	£1	5	0
Six Months	0	14	0
Three Months	0	7	0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under	£0	4	0
	Every additional Line	0	0	6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

The Milroy Lectures

ON

THE STREPTOTRICHOSES AND TUBERCULOSIS.

Delivered before the Royal College of Physicians of London on Feb. 17th, 22nd, and 24th, 1910,

By ALEXANDER G. R. FOULERTON,
F.R.C.S. Eng., D.P.H. Camb.,

LECTURER ON BACTERIOLOGY AND ON PUBLIC HEALTH TO THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, AND COUNTY MEDICAL OFFICER OF HEALTH FOR EAST SUSSEX.

(*With Coloured Plate.*)

LECTURE III.[1]

Delivered on Feb. 24th.

The Acid-fast Streptotricheæ.

Mr. President and Fellows,—Occupying, with respect to general biological characteristics, a position intermediate between the freely growing species of Group I. with their close resemblance in culture to a saprophytic type of streptothrix, and the slowly growing species of Group III. with their marked parasitic characteristics, the streptotricheæ of Group II. differ markedly from those of the other groups in their generally more active pathogenic action. The possession of "acid-fast" properties is an additional characteristic of most of the species of the second group. As to differences in method of pathogenic action, it has been pointed out that with species of the first and third groups there is, as a rule, but little tendency to general infection, and that commonly the disease spreads from the seat of primary infection by a progressive invasion of continuous tissue. With species of the second group there is, on the other hand, often a widely spread infection by means either of the blood or of the lymph stream. The difference in method of pathogenic action is seen in the streptotrichoses of the ox, caused respectively by *St. bovis communis*, a typical example of Group I., and *St. nocardii*, an acid-fast species with many characteristics in common with *B. tuberculosis* and a typical example of Group II. In the streptotrichosis caused by the first species infection occurs, as a rule, through the mucous membrane of the mouth or pharynx and remains localised in parts of the head or neck in probably about 95 per cent. of all cases. Infection by Nocard's streptothrix apparently occurs usually by some abrasion of the skin, and, especially in a more virulent type of the disease which is met with amongst cattle in Guadeloupe, a widely-spread infection of the lymphatic system follows, with disseminated subcutaneous abscesses and in some cases infection of the lungs, liver, and spleen. On intraperitoneal or intravenous inoculation Nocard's streptothrix causes in the guinea-pig an acute miliary tuberculosis which is indistinguishable anatomically or by histological methods from a tuberculosis caused by Koch's bacillus. *St. capræ*, isolated from a case of lung disease in the goat, is an acid-fast organism and produces in guinea-pigs and rabbits an infection with manifestations similar anatomically to those caused by *St. nocardii*. Amongst the recognised acid-fast streptotricheæ met with in human disease *St. eppingeri* is the most important; a number of well-authenticated cases of the infection have been recorded and amongst them the following:—

Case 1.—Eppinger's original case of a man, aged 52 years, who died with extensive disease of both lungs and pleuræ, infection of the bronchial and mediastinal glands, and a cerebral abscess.

Case 2.—Aoyama and Miyamoto recorded a case of disease of the lung, from which the organism was isolated.

Case 3.—Birt and Leishman recorded a case in which there was a tuberculous kind of disease of both lungs, together with an empyema and pericarditis.

Case 4.—M'Donald has recorded the case of a woman, aged 65 years, whose lungs showed numerous tubercles, either white, gelatinous, or caseous in appearance; also there were numerous small abscesses in the brain and kidneys.

Case 5.—MacCallum recorded the case of a child, aged 3 years, who died 23 days after the performance of an operation of gastrostomy for relief of the consequences of a simple stricture of the œsophagus. At the examination after death a fibrinous peritonitis was found, together with small nodular deposits on the surface of the intestines.

Case 6.—The case of post-operative infection with a tuberculous peritonitis and abscesses of the lung, which occurred at the Middlesex Hospital, has been referred to already, and its curiously close resemblance to MacCallum's case mentioned.

In addition to these six cases there are others in which an organism resembling Eppinger's streptothrix, but not proved to be actually identical with it, has been isolated. Amongst these are the case of cerebral abscess recorded by Ferrè and Faguet, and a case recently recorded by Bernstein in which a man, aged 67 years, died with multiple abscesses of the lungs and a peritonitis characterised by grey miliary tubercles.

We have had the opportunity of examining three cultures of Eppinger's streptothrix from as many cases—the original culture, a culture isolated from the case of post-operative peritonitis, and a culture from M'Donald's case, and the appearances of the growth in all three cultures and the morphological characters of the organism were identical in all. The organism is actively pathogenic for the rabbit and for the guinea-pig, intraperitoneal inoculation of the latter animal resulting in death with a grey miliary tuberculosis in from six to ten days with medium doses. Although this streptothrix is definitely acid-fast when growing on artificial media, apparently it usually does not show this property when living under parasitic conditions. The grey miliary tubercles which occur alike in natural infection in man and in experimental infection in the guinea-pig are not distinguishable histologically from the comparable granulomata of a recognised acute tuberculosis caused by Koch's bacillus. Another species of acid-fast streptothrix was isolated by Sabrazès and Rivière from two cases. In one case there were abscesses in the kidney and in the cerebrum; the other case was one of chronic broncho-pneumonia with multiple subcutaneous abscesses. Yet another apparently distinct species of acid-fast streptothrix, although its cultural characteristics have not been fully described, was isolated by Scheele and Petruschky from a similar case in which broncho-pneumonia was followed by subcutaneous abscesses. Horst isolated an acid-fast streptothrix from a case of intestinal and pulmonary streptotrichosis with cerebral abscess; on experimental inoculation the parasite produced an acute infection in the guinea-pig, but it is not possible to determine the species of the organism from the description which has been given.

In addition to cases of streptotrichosis such as the foregoing, a large number of cases of pulmonary disease have been described in which the sputum contained acid-fast, branching, and apparently mycelial, threads. Butterfield has recorded the case of a young man who died with diabetes; on examination after death there was found a small cavity in one of the lungs in which an acid-fast streptothrix was present. W. H. Smith, of Massachusetts, has recorded the clinical details of three cases, apparently of chronic tubercular phthisis, in which distinct branching, acid-fast, mycelial threads were found in the sputum. In Smith's cases the results of inoculation of guinea-pigs showed that these branching mycelial threads were forms of Koch's bacillus. In many other cases again the exact nature of branching mycelial forms found in the sputum of cases which clinically have appeared to be cases of chronic tubercular phthisis has been doubtful. In my own series of cases there was one of a man, aged about 50 years, with signs and symptoms of chronic phthisis, whose sputum contained acid-fast mycelial threads in abundance. No cultures of the parasite were obtained, but negative results on the inoculation of two guinea-pigs showed that the case was not one of infection by Koch's bacillus. I have also had the opportunity of examining specimens from a case of Dr. Ogier Ward in which a typical acid-fast organism of the streptothrix type was present in the sputum. The patient was a man, aged 28 years, who was operated on for what was believed to be tuberculous disease of the kidney. Symptoms of disease of the lung developed meanwhile, and it was found that the sputum contained many branching mycelial forms. In this case, as in other similar ones, it was impossible, in the absence of culture and inoculation experiments, to decide as to the exact nature of the organism found on microscopic examination, whether it was Koch's bacillus or some other species.

---

[1] Lectures I. and II. were published in The Lancet of Feb. 26th p. 551) and March 5th (p. 626), 1910, respectively.

As to Tuberculosis Generally: Acid-fast Organisms other than Recognised Streptotricheæ

The nature of the parasites in cases of recognised streptotrichosis having been discussed, and the general pathology of the infection having been referred to, the relationship of tuberculosis to this class of disease remains for consideration. The term tuberculosis was used in the first instance, it may be pointed out, to cover a group of cases of disease having a certain clinical association, and characterised anatomically by the presence of small nodules or tubercles of granulomatous tissue, which presented sometimes a particular histological arrangement. In 1882 Koch described an acid-fast bacillus as the cause of tuberculosis, but within a short time it came to be recognised that Koch's bacillus was not the cause of all the cases of disease in man and lower animals which, on anatomical and histological grounds, had hitherto been regarded as cases of tuberculosis. The histological test of tuberculosis, therefore, could no longer be regarded as decisive; the crucial test was the finding of Koch's bacillus. So long as acid-fast properties were believed to be a special characteristic of Koch's bacillus the diagnosis of tubercular infection by microscopic means only was apparently sufficient. But gradually it became apparent that this organism was only one of a relatively large class possessing acid-fast staining properties. First came the discovery of an acid-fast organism in the granulomata of leprosy. Then Lustgarten found a similar organism in the primary lesion of syphilis, which he considered as the causative parasite but which is now believed to have been one of the group of "smegma" bacilli. The identification of acid-fast streptotricheæ followed, together with the discovery of a class of acid-fast organisms known as "smegma" bacilli, and found about the body as apparently harmless parasites. And finally there has been described more recently a large group of acid-fast organisms which includes the timothy grass bacilli, various "milk" and "butter" bacilli, and other apparently saprophytic species.

Because of difficulty in culture but little is known as to the biological characteristics of the "smegma" bacilli which have been found on man and on many lower species, and this class of organism may be left out of consideration for the time being. Deycke has shown that Hansen's *Bacillus lepræ* is, in fact, a definite acid-fast streptothrix; and it appears certain that some, at any rate, of the grass-infecting and "milk" acid-fast organisms also belong to the same genus. The true nature of the reputed *Bacillus tuberculosis* remains for discussion, before proceeding to which, however, it will be well to consider briefly the question of the unity of what is usually regarded as tuberculosis.

As to the Unity of Tubercular Infections.

At least five distinct types, or varieties, of tubercular infection, occurring in various species, have been described: (1) tuberculosis occurring in fishes and other cold-blooded species, (2) avian tuberculosis, (3) tuberculosis of the rat, (4) bovine tuberculosis, and (5) human tuberculosis. The occurrence of these types, or varieties, of tuberculosis is recognised by practically all pathologists; and, further, it is generally admitted that the parasites in each kind of infection have their own more or less distinctive peculiarities. This much being agreed, the question as to whether the five varieties of disease are caused by as many differentiated strains of a common stock, or by as many distinct, but generically allied, species is of little more than academic interest from a purely biological point of view. For it would appear highly probable that the absolute specificity of these, at any rate closely allied, low forms of life, with their rapid reproduction and quick susceptibility to varying conditions of environment, is, and in no unlimited sense, merely a matter of time. In relation to the public health, however, whilst we are not concerned primarily with the absolute specificity of the parasites, but rather with the question whether—either as admittedly differentiated "strains" or as distinct species—they are respectively potential sources of infection for man, the matter becomes of practical importance. The evidence as to the separate identity of the parasites in the different varieties of tubercular infection will now be referred to briefly.

Tuberculosis of Cold-blooded Species.

Infections by acid-fast micro-organisms, described as tuberculosis, have been recorded in fishes and reptilia. Thus Sibley has described a case of tuberculosis in a snake, but it does not appear that the parasite was studied in cultures on artificial media. Bataillon, Dubard, and Terre isolated from a nodule in the abdominal wall of a carp an acid-fast parasite with filamentous branching forms which were described as being of a "cladothrix" type. Good growth of the organism was obtained in broth and on agar after three or four days' incubation at the optimum temperature, 25° C.; growth at a temperature of 36° C. was very slow and scanty. On artificial media the growth had the general characters of a mould fungus. This parasite of piscian tuberculosis is not pathogenic for birds or guinea-pigs, but on inoculation into the frog (*R. esculenta* and *R. temporaria*), causes an infection with resulting tubercles in the liver and kidneys. The organism appears to be a streptothrix and, in any case, must be regarded as belonging to a species distinct from the common parasite of human tuberculosis. Koch's bacillus from cases of human tuberculosis is not apparently pathogenic for cold-blooded species; but it can exist for a considerable length of time as a parasite in the tissues of artificially infected fishes and frogs, and when recovered in culture on artificial media after parasitic existence in a cold-blooded host the characters of the organism appear to have become modified to some extent. Moeller, after inoculating the slow-worm with sputum from a tuberculous case, obtained from the spleen a culture of an organism in which the general character of the once human parasite seemed to have been permanently altered.

Avian Tuberculosis.

The tuberculosis of poultry and pheasants results from infection by a parasite which appears certainly to be of a species different from that which occurs commonly in human disease. In the case of poultry it is evident that infection is usually conveyed with the food; small nodules or ulcers frequently mark the site of primary infection in the intestinal mucous membrane, and the liver is found to be infected in practically all the cases which come under observation. This method of infection is a consequence doubtless of abrasion of the mucous membrane caused by the grit-swallowing habit of fowls. The parasite occurs in the lesions of avian tuberculosis in comparatively huge clumps, the appearance of which resembles somewhat that of the masses of acid-fast parasites found in leprosy and in rat tuberculosis. Amongst bacillary forms, clubbed and branching thread-forms of the parasite are not uncommon, and Mafucci and Metchnikoff found similar forms in cultures on artificial media. The general appearance of cultures of the avian parasite on artificial media differs distinctly from that of cultures from human cases; also the range of temperature at which growth occurs is different. As the parasite of cold-blooded species has an optimum temperature for growth, 25° C., which is considerably under the optimum for the human or bovine parasite, so the parasite of avian tuberculosis flourishes at a temperature, 43° C., which is higher than the maximum growth-temperature for the other parasites. When the pathogenic activity of the parasites of human and avian tuberculosis is compared, strongly marked differences suggest the separate identity of two species. Usually attempts at infection of poultry, pheasants, or pigeons by the human parasite fail altogether; occasionally a local infection, differing in some respects from the natural form of infection in the fowl, results. Thus, in some recent experiments which I carried out, three pure-bred hens were fed daily for one month on food mixed with large quantities of tuberculous sputum. In the case of two of the hens the results of the feeding were entirely negative; the third hen, when killed three months after the conclusion of the period of feeding, was found to have a small cluster of tubercles in the mucous membrane of the lower end of the œsophagus. Acid-fast organisms were found only with much difficulty in the

Description of Coloured Plate.

FIGS. 1, 2, and 3 are from a case of streptotrichosis with infection of the lung, liver, and cerebrum.

FIG. 1.—Section through granuloma in cerebrum showing large tuft of mycelium.

FIG. 2.—Section through granuloma in very early stage, showing rod segments, probably commencing fresh growth.

FIG. 3.—Tuft of mycelium from empyema in same case.

FIG. 4.—Pus from abscess on chest wall from another case of pulmonary streptotrichosis, showing complete fragmentation of the mycelium. (*St. hominis I.*)

granulomatous tissue, their scanty growth being in striking contrast with the luxuriance of growth of the parasite in natural tuberculosis of fowls. Subcutaneous inoculation of two guinea-pigs with the tuberculous material resulted in a severe infection, the animals dying within three weeks with a generalised tuberculosis. The parasite of natural avian tuberculosis, on the other hand, is usually harmless to the guinea-pig, or at most may cause a localised infection. This difference between the pathogenic action of the human parasite, even after its passage through a bird, and that of the parasite of naturally acquired avian tuberculosis is illustrated again in the peculiar form of tuberculosis occurring in tame parrakeets, of which Cadiot, Gilbert, and Rogers were able to collect 57 cases. The disease apparently is caused by human infection, and commonly presents itself as a chronic tubercular disease of the skin about the front of the head, sometimes extending to the oral mucous membrane. In its pathogenic action on the guinea-pig the parasite of this infection corresponds with the human and not with the ordinary avian organism. Shattock and Dudgeon have found that under ordinary conditions the human parasite causes only a local lesion in the pigeon, and that its virulence in this respect is not increased in any way after four successive passages through the bird. These pathologists found also that the very limited degree of pathogenicity for the guinea-pig shown by the avian parasite was not increased after eight successive passages through that animal.

Tuberculosis of the Rat.

Tuberculosis in the rat (*M. decumanus*) has been described by Stefansky, Rabinowitch, and Dean. Stefansky found the disease in about 5 per cent. of rats caught in Odessa, and Rabinowitsch obtained similar results with rats caught in Berlin. The disease appears as a chronic infection of the skin and subcutaneous tissue, occasionally with direct infection of immediately underlying parts, and sometimes with infection of the lymphatic glands. Dean has recorded several similar cases amongst rats in this country. Stefansky and Rabinowitsch failed in attempts to convey the infection to other animals by inoculation. Dean found that the guinea-pig, mice, rabbits, and a monkey (*Macacus rhesus*) were immune against infection, but succeeded in reproducing the disease in tame black and white rats by means of subcutaneous and intraperitoneal inoculation. Subcutaneous inoculation caused a localised infection of the skin, sometimes with a limited lymphatic infection. In such case the lesions resembled those occurring naturally in the wild rat, and especially with regard to the massing together of bacilli in the resulting granulomatous tissue. Extensive tubercular peritonitis was produced by intraperitoneal inoculation.

A certain similarity in the character of the lesions in avian tuberculosis and in tuberculosis of the rat has suggested the possible identity of the parasite in each. Shattock and Dudgeon have investigated this point carefully, and found that the white rat is, except for the production sometimes of a localised abscess at the site of inoculation, with infection of a connected lymphatic gland in a single case, immune against infection by the avian parasite, whether attempted by subcutaneous inoculation or by feeding. The majority of the attempts which I myself have made to infect white rats with the parasite of human infection have failed. All attempts at infection by intraperitoneal injection, either of tuberculous sputum or of pure cultures of the parasite obtained from cases of pulmonary tuberculosis, joint tuberculosis, and meningitis, have either failed altogether or, and in two cases only, have produced a small cluster of tubercles in the subcutaneous tissue of the abdominal wall at the point at which the skin was punctured by the syringe. In one or two out of numerous attempts at infection by inoculation of the subcutaneous tissue at the root of the tail a few similar tubercles have been produced. In these subcutaneous tubercles a striking massing of the parasite, such as is seen in natural tuberculosis of the rat, has been found. Taking all the ascertained facts into consideration, one is led to the conclusion that the parasite of rat tuberculosis is specifically different from either the human or avian parasite.

Human and Bovine Tuberculosis.

Altogether there is satisfactory evidence that the parasites concerned respectively with the forms of tuberculosis occurring commonly in cold-blooded species, in birds, and in rats are themselves of different species, and are in no case identical with the parasites of human tuberculosis. But it cannot be said that the more important question as to the identity of the parasites of human and bovine tuberculoses has yet been settled. It has been taught by many, including myself, in this country during the last 10 or 12 years that, whilst decisive evidence is still wanting, what circumstantial evidence is available, together with a certain amount of direct evidence which has been collected, indicate with a high degree of probability the occurrence of two, or more, distinct species of parasites in the tuberculoses of man and cattle. With regard to intercommunicability of infection, it has appeared probable that whilst the human adult is susceptible only, or, at any rate, only in an important degree, to infection by parasites from a human source, the child is equally susceptible to infection by either species, "human" or "bovine." On the other hand, the susceptibility of the ox to infection by "human" parasites has, of course, been proved directly by inoculation experiments. Koch, however, in his latest pronouncement on the subject took a considerable step beyond this position, and without the support of any evidence additional to what was previously available asserted not only that there are two distinct species concerned, but that the bovine parasite is not pathogenic for man. It will be observed that in this matter two possible main issues must be kept in view. First, there is the question as to the identical or separate specificity of the parasites of human and bovine tuberculosis; and then, separate specificity having been proved, the question as to the susceptibility of man to infection by the parasite of bovine tuberculosis arises. But more evidence than is now available will be required before an absolute decision can be arrived at. We can say at present only that on the incomplete evidence now before us it appears probable that there are the two distinct species, and that, in any event, there is strong circumstantial evidence to show that the parasite infecting the ox is also, subject to the limitations already stated, pathogenic for man.

THE BIOLOGICAL RELATIONSHIP OF THE PARASITES OF TUBERCULOSIS TO THE STREPTOTRICHEÆ.

In what follows as to the relationship of the parasites of tuberculosis to the streptotricheæ it is to be understood that generally, and unless it is otherwise stated, human disease and its parasites are referred to. On comparison of the pathogenic action of the parasites of tuberculosis with that of the streptotricheæ the first point which attracts attention is the close correspondence clinically between various manifestations of tuberculosis and recognised streptotrichoses. In either case we have chronic and acute types of disease. In the chronic type of disease there is but little tendency to infection of parts remote from the seat of apparent primary infection, or if such remote infection does occur it is slow and long-delayed. The effects of disease are exhibited mainly in a destruction of the tissues actually infected, with, in some cases, the added general effect of secondary infection by pyogenic organisms. Examples of this type of disease are furnished by the chronic tuberculous phthisis of adults, by cases of chronic tuberculosis of the skin and bones, and by chronic pulmonary and skin infections in which the first and third groups of pathogenic streptotricheæ are concerned. In this type of disease, whether tuberculosis or streptotrichosis, there is little clinical evidence of the production of active toxins by the primarily infecting parasite. In these cases the occurrence of high temperature, wasting, and general constitutional symptoms will be found to result usually from a secondary infection of the original lesion by pyogenic cocci. In the more acute cases of tuberculosis and in streptotrichoses caused by parasites of the second group, such as Eppinger's streptothrix, in which there is multiple infection of parts remote from the primary lesion, the mutual clinical resemblance in individual cases may be complete, so that there may be no means of differential diagnosis except by identification of the causative parasite. Whilst there is no essential difference clinically between the symptoms of tubercular infections and of streptotrichoses generally, there is absolute identity in the anatomical and histological characters of the lesions which may be met with in either under different circumstances. The grey miliary tubercle, the caseating nodule, and the softening nodule are found alike in tuberculosis and streptotrichosis. And equally the histological "tubercle" with its epithelioid and giant cells, which was formerly believed to be characteristic of infection by *B. tuberculosis*, is frequently found in streptotrichoses.

Morphology.

Amongst recognised fission fungi there are three, *B. mallei*, *B. diphtheriæ*, and *B. tuberculosis*, in which the development of branching forms has been observed. The filamentous, branching, and "clubbed" forms of *B. mallei* which have been studied by Marx and Galli-Vallerio, and the branching filamentous forms of *B. diphtheriæ* which have been described by Meyerhof, Spirig, Klein, Babes, Fraenkel, and others, have usually been looked upon as representing degenerative involution forms. In these two species branching forms occur but rarely and under exceptional conditions, and it appears probable that they really represent a tendency to development in the direction of a higher type of organism. Branching forms of the recognised *B. tuberculosis*, on the other hand, are by no means uncommon; their appearance in sputum has been referred to already, and they were recognised in the pus of tubercular meningitis by Petrone as long ago as 1884. Metchnikoff in 1888 studied the morphology of the organism as it occurs in the sputum, in experimental lesions, and in culture, and, like Petrone, threw doubt upon its reputed bacillary nature. At about the same time Klein noted the occurrence of branching filamentous forms. In 1893 Fischel described the occurrence of branching and clubbed forms in cultures of the human and avian parasites, and pointed out the analogy of the reputed bacillus to Bollinger's *Actinomyces*. In 1895 Coppen Jones dealt exhaustively with the question of morphology, and his work alone would appear sufficient to establish the position of Koch's bacillus amongst the mould fungi. In 1897 Friedrich published an account of some experiments in which cultures of the reputed bacillus were injected into the carotid of the rabbit; the parasite was found as a ray fungus in the lesions of the tuberculous meningitis which followed. In the same year Babes and Levaditi published an account of exactly similar appearances found in experimental tuberculous meningitis of the rabbit produced by intracranial inoculation; they described the parasite as occurring in typical actinomyces form, and in repeating their experiments I have myself observed branching forms in early meningeal tubercles.

Many other authorities could be quoted to the like effect. And, in short, there can be no reasonable doubt but that at one stage of its growth the bacillus of Koch is represented by branching mycelial threads of the streptothrix type. And this being so, the common "bacillary" forms represent the persistent rod-segments of a streptothrix. The possibility that the rod-segments may reproduce themselves under some conditions directly, and without the intervention of a mycelial stage, has been referred to already; but from a morphological point of view there is no essential difference, beyond such as may depend upon relative rapidity of growth, between Koch's bacillus and a typical streptothrix, such as Eppinger's, when growing on solid media. Other evidence as to the position of the reputed bacillus may be referred to now.

As to Spore Formation in the Reputed Bacillus Tuberculosis.

Because of the appearance of "beaded" forms in old cultures of the reputed *B. tuberculosis* it was suggested a good many years ago that the species was a spore-forming one, but the point has not been cleared up hitherto. The matter is one of considerable importance in connexion with the subject under discussion, since further investigation has shown in the first place that Koch's bacillus must be regarded as a spore-forming species, and, secondly, that the spores produced are those of a mould fungus and not of a fission fungus. The occurrence of spore formation in fission fungi and mould fungi is proved by two tests. If sporulation occurs old cultures will be resistant to a degree of heat higher than the minimum necessary to kill young cultures, and the spores themselves may be demonstrated by special staining methods. In the matter of resistance to heat there are certain differences between the spores of fission fungi and of mould fungi. It may be laid down as a rule, probably without an exception so far as pathogenic species are concerned, that non-sporing, bacillary, fission fungi are destroyed by an exposure of from 10 to 15 minutes' duration to moist heat at a temperature of 65° C., whilst sporing bacilli will survive a temperature of 95° C. under otherwise equal conditions. With the mould fungi there is much wider variation in the matter of heat resistance amongst different species than there is with the fission fungi, but for individual species the difference between the sporing and non-sporing forms is less than it is with the fission fungi. Thus Domec found that the thermic death point for sporing cultures of *St. bovis communis* was near 75° C., whilst cultures consisting of unsegmented mycelium only were destroyed by a temperature of 60° C., the exposure being for five minutes in either case. Vincent found that sporing cultures of his *St. maduræ* survived exposure for five minutes to moist heat at a temperature of 75° C., and were destroyed by an exposure for three minutes at 85° C.; non-sporing cultures were destroyed by an exposure at 80° for five minutes. For *St. luteola* the results were that sporing cultures survived 20 minutes' exposure at a temperature of 75° C., but were killed after 30 minutes' exposure, and that non-sporing cultures survived 20 minutes' exposure at a temperature of 60° C., but were killed by 20 minutes' exposure at 70° C. And, whilst with different species there is a considerable range of difference below and above the limits given, it may be said that for pathogenic streptotricheæ the thermic death point, with a time exposure of 10–15 minutes, of young mycelial cultures is between 60° and 65° C., and that the thermic death-point of sporing cultures is between 70° and 85° C. It is impossible to differentiate between the thermic death point of the rod segments, which are looked upon as being more resistant than the unsegmented mycelium, and that of the spherical spores, since it is practically impossible under artificial conditions to make sure that one has a culture which contains rod segments only and not spores. And it is possible that a difference in the heat resistance of these two elements may account for certain irregular results which have been obtained in the case of some species, and notably in the case of *St. eppingeri*.

If we come to consider the thermic death-point of the reputed bacillus tuberculosis we find that there has been considerable variation in the results of different workers, and that as a matter of fact we do not at the present time know what the thermic death-point is within the limits of about 20° C. Thus Galtier found that exposure for five minutes to a temperature of 85° C. was not sufficient to destroy the organisms in tuberculous milk, and that five minutes' exposure at a temperature of 90° C. was necessary to prevent the infection of rabbits subsequently inoculated with the heated milk. Sims Woodhead found that exposure of infected milk to a temperature of 85° C. for five minutes was sufficient to protect guinea-pigs subsequently inoculated, but that exposure to a temperature of 70° C. for the like period was ineffective; swine became infected after feeding with infected milk which had been heated at 80° C. Others have fixed the thermic death-point lower than this. De Manns found that the bacilli were killed by 15 minutes' exposure to a temperature of 65° C., by ten minutes' exposure to a temperature of 70° C., and by five minutes' exposure to a temperature of 80° C. Theobald Smith found that the bacilli were killed by an exposure of 15 to 20 minutes at a temperature of 60° C. Bang, experimenting with milk from tuberculous cows, found that heating at 65° C. for 10 minutes was sufficient to protect rabbits subsequently inoculated, and that heating for 15 minutes at 60° C. was ineffective. Experimenting with glycerine-bouillon cultures of the bacillus, Bang found that heating at 50° C. for 15 minutes had no effect on subsequent growth, that heating at 55° C. for 15 minutes had a marked inhibitory effect, and that heating at 60° C. for five minutes rendered the medium sterile.

A series of experiments testing the effect of heat on the virulence, as apart from its effect upon subsequent growth, was carried out at the Middlesex Hospital by Leslie Milburn and myself. Our procedure was as follows. Guinea-pigs were inoculated in the popliteal space with tuberculous material from various cases; they were killed usually on the twentieth day after inoculation, and a weighed portion from the infected lumbar glands was rubbed up in a mortar with sterile normal saline solution warmed up to 40° C. When a fine, uniform emulsion had been produced, the mixture was added to tubes containing measured quantities of sterile normal saline solution, which had been heated to the respective temperatures which were to be employed. The tubes were then immersed in water-baths at the various temperatures for 15 minutes, and cooled rapidly. Definite quantities of the heated emulsions were inoculated into the popliteal space of rabbits and guinea-pigs. In every case guinea-pigs inoculated with material which had been heated at 70° C. for 15 minutes became infected, about 50 per cent. of the guinea-pigs inoculated with material heated at 75° C. became infected, about 33 per cent. of the guinea-pigs inoculated with material heated at 80° C. gave a similar result, and 25 per cent. of the guinea-pigs inoculated with material heated at 85° C. became infected. Fewer experiments were carried out with rabbits, but apparently the virulence for this animal is destroyed at a somewhat lower temperature than is required in the case of the guinea-pig. Other experiments which I have myself made, whilst not conclusive, suggest that after subculture for two or three generations on artificial media the virulence of these parasites is destroyed by a degree of heat less than is required in the case of fresh material from infected animals.

This question of the thermic death-point of the reputed bacillus has been considered at some length because of its bearing on the matter of spore formation. It is to be noted that in most of the above experiments the point at issue has been the degree of heat necessary for depriving the organism of virulence and not for absolute sterilisation, as tested by subsequent ability for growth. And taking a broad view of the matter it is obvious in the parasites of tuberculosis we have to deal with organisms whose thermic death-point may vary considerably, being as low as 65° C. in some cases and a little above 85° C. in others. This range of temperature excludes, in the first place, the possibility that we are dealing with a non-sporing fission fungus; none such is known which will survive a moist heat of 85° C. with 15 minutes exposure. And equally the higher thermic death-point between 85° and 90° C. is below that of a sporing fission fungus. The only available explanation is that we are dealing with a mould fungus; and the range of temperature between about 65° and 85° C. about corresponds with the range which covers the destructive temperature for unsegmented mycelial and sporing cultures of a number of streptotricheæ. And the considerable variations of the thermic death-point which have been obtained by different observers within this range of about 20° C. suggest further that not only are we dealing with a streptothrix parasite but that we may be dealing with more than one species.

The facts so far indicate with certainty that we are dealing with a sporing organism; and if staining tests are applied we obtain additional evidence that we are not dealing with a fission fungus. The spores of all fission fungi stain by what is termed Moeller's method; the spores of recognised streptotricheæ do not stain by this method, but stain readily by Gram's method. In the case of the acid-fast streptotricheæ the rule holds good; the spores are not acid-fast, and stain by Gram's method. An attempt has been made, therefore, to test the staining properties of the clear unstained spaces which are seen when cultures of Koch's bacillus present beaded forms on staining by the Ziehl-Neelsen method. In specimens which have been first stained by this method and then counterstained lightly by Gram's method, I have been able to convince myself that the clear bodies, left unstained by the Ziehl-Neelsen process, stain by Gram's method after the fashion of streptotrichial spores.

As to the Acid-fast Staining Properties of Certain Streptotricheæ and Koch's Bacillus.

A few words must be said as to the resemblance between Koch's bacillus and certain recognised streptotricheæ with respect to acid-fast properties. Klein was the first to point out that with Koch's bacillus acid-fast characters are not manifested in young cultures; the wax upon which, as Aronson has shown, the acid-fast properties of the organism depend is a metabolic product of later life. The exact stage of development at which Koch's bacillus forms this substance is not known; but with recognised streptotricheæ, such as Nocard's and Eppinger's organisms, acid-fast properties are not acquired until segmentation of the mycelium has occurred. On examining cultures from day to day it is found that so long as the mycelium is unbroken no portion of it is acid-fast; it is only after segmentation and fragmentation have occurred that a certain number of the isolated rod-segments acquire this property. How far this applies to acid-fast streptotricheæ generally is not known; but it is true for all those which I have myself examined in culture, and it is to be noted that with all these, even in quite old cultures, only a minority of the rod-segments ever acquire the property.

As to the Habitat of Streptotricheæ and Certain Acid-fast Organisms when not under Parasitic Conditions.

The last matter to be referred to in these lectures is the question of the natural habitat of the streptotricheæ and members of the acid-fast group of organisms generally during saprophytic existence. It has already been stated that very little is known with regard to the exact nature of the "smegma" bacilli; and all that need be said now is that they at any rate appear to be strict parasites. The association of the streptotricheæ with soil and herbage, and the special liability of herbivorous animals to streptotrichosis have been commented on, and it may be pointed out that amongst the apparently saprophytic species isolated by Berestnew from herbage there are two species which are said to be acid-fast. In the special "grass," "butter," and "milk" bacilli we have a definite group of acid-fast organisms which again are specially associated with herbage, and which, although generally considered as bacilli or fission fungi, have the closest resemblance to the streptotricheæ. Thus, one of the two species of timothy grass bacilli which I have examined shows well-marked branching and "clubbed" forms, and similar forms have been described by Moeller, Nabarro, and others as occurring with these species. As regards their pathogenic action these species seem to resemble in some respects both the recognised streptotricheæ and Koch's bacillus. Rabinowitch isolated an acid-fast organism from butter which did not appear to be pathogenic when inoculated by itself, but which caused a tubercular condition of the peritoneum on intra-peritoneal inoculation together with butter. Lubarsch has produced nodular infections by inoculation with species of this group, and notes the resemblance of the infection to an actinomycosis. Abbott and Gildersleeve carried out inoculation experiments with various of these acid-fast organisms, and came to the conclusion that they, together with *B. tuberculosis*, should be classed with the actinomycetes; a careful description of the nodular lesions produced by inoculation is given by these writers.

Coming to the varieties of tuberculosis, it is certain that in avian tuberculosis the parasite is ingested with food. And whilst the food of poultry kept under domestic conditions is not confined to vegetable products, I have seen isolated cases of tuberculosis occurring in fowls under conditions such that the only possible sources of infection were either human beings or food in the shape of grass or grain. But the human parasite is probably incapable of infecting fowls; and, infection from other poultry being in these isolated cases practically impossible under the existing circumstances, vegetable food appeared to be the only possible source of infection remaining. With regard to tuberculosis of the ox, whilst it is quite certain that very often infection is conveyed by dust infected from a previous case, it would appear equally certain that in many cases infection occurs through the mucous membrane of the intestinal tract and is conveyed with vegetable food. Whilst this frequent association of acid-fast organisms with herbage is remarkable, it cannot be suggested that any such direct association can be traced for the parasite of human tuberculosis. Nevertheless, it is of interest to note that the human parasite may be not far removed on the scale of evolution from some species of streptothrix parasitic for herbage.

THE THIRD INTERNATIONAL CONGRESS AND EXHIBITION OF PHYSIOTHERAPY.—In the buildings of the Paris Faculty of Medicine, in the practical school, and in the street of the school of medicine, which will be converted for the time being into a covered space, there will be held from March 29th to April 3rd a Congress and Exhibition of Physiotherapy under the patronage of the President of the French Republic. The President of the Congress is Professor Landouzy, *doyen* of the Faculty of Medicine, and the Director of the Exhibition is Dr. Albert Weill. Among the subjects announced for discussion are hydrotherapy, aerotherapy, thermotherapy, cryotherapy, electrotherapy, radiology, phototherapy, and mechanotherapy, and there will be an exhibit of thermal and climatic stations and sanatoria. Further particulars can be obtained from M. H. Saunion, 19, Bartholomew Close, London, E.C.

A Lecture

ON

THE USE OF X RAYS IN SKIN DISEASES AND OTHER AFFECTIONS.

Delivered at the North-East London Post-Graduate College,

By A. HOWARD PIRIE, M.D., B.Sc. Edin.,

CHIEF ASSISTANT IN X RAY DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL; MEDICAL OFFICER IN CHARGE OF X RAY DEPARTMENT, PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.

Gentlemen,—As the use of X rays is spreading, and their value is being more and more appreciated, not only for surgical affections, but also for medical, it is becoming as essential for a physician to have a good X ray outfit as it is for him to have a good stethoscope. Like the use of the stethoscope, the use of the X rays is not a thing one can become an expert at without practice. You remember the way you used to strain to hear a murmur or a râle which now you can almost diagnose without a stethoscope. So with X rays. One must practise before the examination is of any real value. At first one thinks that tuberculosis in the lungs has to be diagnosed on the screen by the eye of faith, but after a dozen examinations one begins to appreciate the value of X rays for examination of the chest, and after a hundred examinations one could never be satisfied to be without X rays any more than without a stethoscope. The time has not yet come, however, when the general practitioner arms himself with an X ray outfit when he starts practice. One cannot be an expert at everything, and an X ray outfit, if not well looked after, becomes a nuisance rather than a help. The next best thing to having an efficient X ray outfit is therefore to have access to one when desired, and now that practically every hospital has its own installation and specialists in this particular branch of medicine, there is no excuse for omitting the X ray examination of any patient who would be benefited by such an examination. In surgery this has been appreciated more than in medicine. No case of aneurysm should ever go without X ray examination. 90 per cent. of cases of suspected aneurysm that are sent to the X ray department are returned as no aneurysm. When the question of tuberculosis in the lungs arises, how easy it is to look at the patient by means of X rays, and in a positive case watch the want of movement of the diaphragm on the affected side, and see the patch of consolidation outlined by its dark shadow. I have examined many cases admitted to Mount Vernon Hospital in this way, and an examination of one minute's duration is sufficient to settle the question of the presence of consolidation, its position and extent. From this information along with the clinical symptoms a prognosis can be quickly formed.

The diagnosis of stricture of the œsophagus is easily made by means of X rays. The patient swallows a bismuth cachet and one watches where it sticks. If a pouch is present one sees the cachet being churned round and round and either returned or passed on. X rays are also useful for diseases of the stomach. After a meal, consisting of a half pint of bread-and-milk mixed with an ounce of bismuth, one can show the position, size, and mobility of the stomach. Gastroptosis is easily made out when the patient stands up. Hour-glass contraction can be found, and when the stomach is constricted by carcinoma its position can be localised. Gall-stones can rarely be shown and require special manipulation for their detection. New growths in the liver and spleen cannot be made out by X rays unless they are so pronounced that their presence can be made out by other means. New growths in the lung can be made out because the lung is so transparent in comparison with the growth. These are some of the modern uses of X rays, and no doubt, as time goes on and the apparatus for producing X rays improves, we shall be able to make out finer details, such as secondary deposits in the liver and spleen and new growths in the abdomen.

Turning now to the actual results of X ray treatment, as the general practitioner might use the X rays, he would find them of great service for everyday use in the following diseases, which he meets with often: ringworm, chronic dry scaly eczema, acne vulgaris, malignant disease, and tuberculous glands. More rarely he would use X rays for sycosis, lupus, rodent ulcer, and psoriasis. In rare cases for splenic leukæmia and lymphadenoma. And for screen examinations of aneurysm, stricture of the œsophagus, stomach affections, fractures, and bone disease.

Before describing the therapeutic use of X rays let me first state the dose and how it is measured. The X ray fluorescent screen consists of barium platinocyanide, and this screen, under long exposure to X rays, turns brown. This fact is used as a means of measuring X rays. A small piece of such a screen is placed half-way between the patient and the source of X rays. It is backed by metal, and kept at least 2 centimetres from the glass of the tube, and protected from daylight. Under these circumstances, when this piece of barium platinocyanide screen turns to a standard brown colour, the patient has received a certain quantity of X rays. This is Sabouraud's method of measuring X rays, and Sabouraud's pastilles for the method can be bought from any X ray instrument dealer. Heating the pastilles turns them brown, and they remain brown permanently, whereas X rays turn them brown and daylight turns them to their original colour (lemon-yellow). This method of measurement should not be used if it takes more than half a hour to turn the pastille. The reason is difficult to explain, but for myself I look upon it as if the X ray tube was an invisible fire which gave out heat which the human body could not feel until three weeks after the time of exposure. The pastille corresponds to a piece of bread, which is toasted by this invisible fire, and the colour of the toast is a measure of the quantity of heat supplied to the bread. At a brisk fire the bread is toasted quickly. At a dull fire the bread does not toast but simply shrivels and dries up. Some similar action seems to occur with the pastilles when the X rays are weak. I shall now show you what results can be got in certain skin diseases, and first in

Ringworm.

The difficulty in curing a case of ringworm is that the disease lies in the roots of the hair. By pulling the hair out the parasite comes out too, but unfortunately the hair usually breaks and the root is left in. The application of one measured dose of X rays makes the hair fall out after three weeks, and the parasite comes with it. This is a treatment which is difficult to carry out without much practice, as a mistake will cause permanent baldness. In experienced hands, however, such a catastrophe is now unknown. After a proper dose of X rays has been given by an expert the cure of the patient should be left in the hands of the family doctor, and he should keep in mind the following principles: 1. Keep on treating the child (as if X rays had not been administered) with antiseptics and parasiticides, but not strong applications which damage or redden the skin. This is to prevent further infection to healthy parts. Sulphur ointment does well. 2. Expect the child to become bald in a month. Tell the mother to rub the child's scalp with a rough towel in order to bring the hairs out. 3. Do not expect the child to become as bald as a billiard ball. There are downy hairs in the scalp among the strong hairs, and these downy hairs do not fall out. A few extra strong healthy hairs survive the action of the X rays and do not fall out. These, however, do not matter, as they are healthy. 4. Broken hairs, which have broken off close to the scalp, and which have deep roots, will not fall out of their own accord. They may be removed either by forceps, by rubbing the scalp with a rough towel, or by scraping the scalp with a blunt knife. When no spores can be found by the microscope, and these last broken stumps are the last to hold spores, the disease is cured, and treatment may be stopped. The hair should grow again after two months. The general practitioner must be able to recognise any spot of ringworm that has escaped a dose of X rays, and a month after the first application of X rays (if such a spot is found) he should refer the case for more X rays. Usually, no such spot exists if properly treated.

Thus the cure of ringworm should be effected by the X ray specialist and family doctor combined. The X ray worker administers the dose of X rays which will ultimately cure the patient. This should be done at one, or at most, in two sittings. The patient then returns to his family doctor, who prevents, by appropriate treatment, any spread of the disease. The application of sulphur ointment I have found sufficient.

A case of ringworm with only one spot may be nipped in the bud by one application of X rays, but when there are two or more spots it is wisest to shave the head and locate others, which are usually to be found, and then apply X rays to all the spots at the first sitting. If it is thought that there are only, say, two spots of ringworm on the scalp, and these two spots are treated by X rays, it frequently happens that other spots appear within a week. These latter had been present, but had escaped notice at first. It is dangerous to give a dose of X rays to these new spots if they lie near the first noticed ones, because overlapping of the doses might occur and cause permanent epilation where the overlapping occurred. It is therefore necessary in such a case to wait till epilation has followed the application of the first dose before applying the second, unless there is no danger of overlapping.

ECZEMA.

Chronic dry scaly eczema yields to a small dose of X rays in some cases in a remarkable manner. Lately I saw a man of about 60 years of age who had two patches of dry scaly eczema on his foot. They had been present for several months. One application was made to one of the patches, while the other was protected by sheet lead. After a week the first spot was gone and had left a slight brown stain. The same dose was given to the other, and it disappeared in like manner. In this case a stimulating dose is all that is required. About two-thirds of a Sabouraud's dose was given in each case.

ACNE VULGARIS.

This disease yields readily to X ray treatment. The unsightly appearance of a young person's face when attacked by this simple disease is often very repulsive, and treatment by ointments and lotions, and internal treatment are sometimes unsatisfactory. Acne has to be treated in the same way as ringworm. In this disease the staphylococcus lies in the sebaceous and sweat glands, and both of these glands will be temporarily destroyed by one large dose of X rays, and thus by removing the soil the disease disappears. I have found this treatment most efficacious in many cases, and especially in the case of a maternity nurse who had suffered from acne vulgaris off and on for years, and whose face was marked as if she had had small-pox. She was suffering severely at the time I began treatment. Her face was so unsightly that one lady refused to have her as a nurse. The skin was so inflamed that I thought it advisable not to give her one large dose, as this might have inflamed the skin badly at the time. I therefore spread the treatment over six weeks, and by the end of that time every spot had cleared away.

MALIGNANT DISEASE.

X rays can cure this disease if it is superficial and has not spread far. It is much safer, however, to remove the disease first by operation and apply X rays immediately afterwards through the dressings in order to kill any stray malignant cell that has escaped the operation. After removal of a breast, when recurrences take place along and near the scar, these can be removed by X rays. I have seen superficial nodules of recurrence in such a case completely disappear. But for deep-seated and unremoveable cases of carcinoma X rays have only a retarding effect, and this is easily understood when one considers that half the volume of X rays which falls on the skin is absorbed before it penetrates to the depth of half an inch. I have seen two cases of recurrent cancer after operation which have been apparently cured by X rays. One case remained well for four years.

RODENT ULCER.

Of all diseases treated by X rays, rodent ulcer is the most satisfactory. The average length of treatment required to bring about cicatrisation of the ulcer is from three to six months. The method of treatment has been simplified within the last few years. Patients used to be treated once or twice a week. Now one large dose is given every three weeks, and equally good results are got. There is a great tendency for rodent ulcer to relapse, and in order to prevent this it is necessary to continue treatment till this tendency is well overcome. A case which has been apparently cured by X rays, if left without further treatment, relapses in four months. It is that part of the ulcer which was the last to heal which breaks down. In some cases it is very hard to get this healed again, as it lies in dense cicatricial tissue, and resembles the centre of an ulcer caused by a burn where great contraction has taken place. It is so difficult to persuade patients to continue the treatment after healing has taken place that recurrences are common. When a recurrence occurs it takes twice as long to get it to heal as the original ulcer. One case I have at present has had a second recurrence after the skin had completely grown over the ulcer on two previous occasions. The first treatment took four months. He then left off having treatment and relapse occurred in four months. Treatment was continued and healing took place in nine months. Once more he left off treatment. Relapse occurred in six months, and for the last year I have not been able to get the ulcer to heal, though it has not spread.

My results of treatment of 14 cases of rodent ulcer are shown in Table I. From analysis of these 14 cases one gathers (1) the average rate of healing of a rodent ulcer by X rays is about one square inch in four months (larger ulcers heal comparatively faster and smaller ulcers comparatively slower); (2) relapse occurs after four months if no after-treatment is given; and (3) after-treatment should be 1 S once a month for a year.

PSORIASIS.

Psoriasis yields to X ray treatment in a most pleasing way. A stimulating dose will make the patch almost invisible by the next week.

TUBERCULOUS GLANDS.

The treatment of tuberculous glands has been very successfully carried out by means of X rays. This seems an appropriate point to ask, Why do X rays have any curative action on any disease? The answer is now well established. The X rays have a selective action on quickly growing and pathological cells. In fact, the more easily killed a cell is, the more easily X rays kill it. The young animal is more delicate and more easily killed than the adult; and the old and diseased animals are more easily killed than the normal adult animal. If a herd of animals was exposed to a very hot sun, so that 10 per cent. of them died, and each animal was equally exposed to the heat and light, the strongest animals would live, and those that died would be the young, the very old, and the diseased. So with X rays; if a crowd of cells receives a severe dose of the rays, they are all killed. If it is a medium dose, the very old, the diseased, and the young cells die, while the normal healthy cells escape. The selective action of X rays is only selective because each cell gets an equal share of the stimulant. No other stimulant can be applied locally and equally to all the cells of the part. Consider this statement in connexion with ringworm. The most quickly growing cell in the scalp is the cell which is multiplying so quickly that it pushes up a growth of hair—i.e., the cells at the roots of the hairs, which cause the growth of the hair. These young cells are killed by a large dose of X rays and stunned by a moderate dose—i.e., a large dose causes permanent baldness, while a medium dose causes temporary baldness. The same argument applies to the cure of sycosis and favus. In epilation of hair from parts where the hair does not grow so fast, one finds more difficulty in giving the proper dose which will kill or stun the cells at the roots of the hair and leave unharmed those of adjacent parts. It is possible, however; and permanent epilation of a moustache from a lady's lip can be effected by X rays. It requires long and careful treatment to be successful without causing disfigurement, such as redness, brown discolouration, or telangiectasis. To apply the same theory to the cure of tuberculous glands it is necessary to consider the giant cells found in tuberculous glands. Giant cells were at one time quickly growing cells. Experiments have been made to find how long it took for a giant cell to be produced and it was found that they formed in from three days to a week. A cell which grows to the size of a giant cell in three days is certainly a rapidly growing cell and therefore it is easily killed by X rays. The tubercle bacillus is found inside these giant cells. Later in its life the giant cell becomes inactive, and the tubercle bacillus remains in it and thrives because the leucocyte does not pursue the tubercle bacillus into the interior of the giant cell. Thus the giant cell becomes a home for the tubercle bacillus, just as a gall-nut on an oak tree is a home for the larva inside it. Thus if the giant cell could be destroyed as it was forming, the tubercle bacillus would be unable to find a home, and provided the leucocytes were active the tubercle bacillus present would be killed by the leucocytes. In cases of tubercular glands I find I get the best results from early cases, but even old-standing cases do well, and patients who have had half a dozen operations are very thankful to escape another by this method. If the gland has become fluid before X ray treatment is begun it may open at the surface. I have seen two cases where absorption took place. If it opens at the surface X ray treatment should be continued, and healing will take place. The final result is that the glands shrink and grow hard, and remain under the skin for a year or more. They do no harm and are not visible on the surface, though they may be felt.

LUPUS.

Certain forms of lupus yield more easily to X ray treatment than others. The variety I have found best for X ray treatment are those presenting apple-jelly nodules. These nodules shrivel and drop out, leaving small crater-like depressions. At the same time latent tubercular nodules surrounding the lupus patch become evident, and later undergo the same degeneration. It is well to warn the patient of the probable appearance of the latent nodules, as otherwise he is apt to think the disease is spreading. A larger field can be treated at one sitting by X rays than by Finsen's method, the treatment can be given more quickly, and the results are as good as by Finsen's method. Cavities may be treated by X rays which cannot be treated by Finsen's method. Other treatment should not be neglected during X ray treatment. Some tubercular nodules which defy X rays for a long time should be treated with the point of an electric cautery. The shortest time in which a cure may be expected is three months. Six months is the usual time required, and some cases have required a year's treatment before healing. A few cases do not yield to X ray treatment. These latter I have found to be the very extensive forms affecting the whole face, with a scaly surface and no tubercle nodules.

KELOID.

The treatment of keloid by X rays is very satisfactory but requires several months of treatment. I show you photographs of a case showing three idiopathic keloids on a man's chest. The treatment was ¼ to ⅓ of a Sabouraud's dose applied once a week for nine months. At the end of that time the keloids had completely disappeared, as shown by the photograph.

LYMPHADENOMA.

I show you a photograph of a boy with lymphadenoma. He had had four operations in order to get rid of the glands, and the first photograph shows his condition when he first

TABLE I.—*Analysis of 14 Cases of Rodent Ulcer to whom Measured Doses of X Rays during the Last Three Years have been Given.*

No.	Size of ulcer in inches.	Duration of ulcer before beginning X ray treatment.	Method of treatment by X rays.	Duration of treatment till skin grew over the site of the ulcer.	Treatment after skin had grown over ulcer.	Relapse.	Length of time ulcer has remained healed.	Remarks.
1	3 × 2	Several years.	5 minutes every week.	7 months.	None.	After 5 months.	5 months.	The recurrence was of the size of a pin's head. It remained so for months and would not heal by further X ray treatment.
2	¼ × ¼	2 years.	,,	4 ,,	,,	After 4 months.	4 months and 8 months.	After the first four months of treatmont by X rays the skin healed over the ulcer. It then relapsed in 4 months, healed after 9 months of X ray treatment, relapsed after six months, and has remained as an ulcer of the size of a pin's head during the last year.
3	2¾ × ½	10 ,,	2 S first, then 1 S every 3 weeks.	7 ,,	1 S once a month.	None.	5 months.	Remains healed.
4	¾ × 1	6 ,,	⅓ S once or twice a week.	3¼ ,,	½ S evory 2 months.	After 7 months.	7 ,,	Recurrence was of the size of a pin's head and has remained so for the last 3 months and is now slowly healing.
5	½ × ⅜	4 ,,	,,	5 weeks.	1 S once a month.	None.	7 ,,	Remains healed.
6	½ × ½	7 ,,	2 S first, then 1 S every 3 weeks.	5 months.	,,	,	8 ,,	Previous to X ray treatment had been treated by zinc ionization.
7	¾ × ½	9 ,,	1 S every three weeks.	6 ,,	,,	,,	3 ,,	Remains healed.
8	2 × 1	7 ,,	1 S once a month at first and later ⅓ S every 14 days.	4¼ ,,	,,	,,	7 ,,	Remains healed.
9	1 × ¾	Several years.	5 minutes once a week.	3 ,,	None.	After 4 months.	4 ,,	After a second course of treatment it nearly healed in 5 months and the patient was lost sight of.
10	¼ × ¼	3 years.	½ S each week.	2 ,,	1 S once a month.	None.	1 month.	Remains healed.
11	1⅛ × 1⅛	19 ,,	An irregular quantity at very irregular times.	6 ,,	None.	Not healed.	Not healed.	When last seen the ulcer was of the size of a pin's head. The patient was very irregular in attendance.
12	3 × 3	Many years.	1½ S first, then ½ S every month.	3 ,,	,,	,,	,,	The patient only attended three times. When last seen, three months from the date of first treatment, the ulcer measured ¾ by ¾ inches.
13	1 × 1	12 years.	Scraped.	—	,,	Threatened.	Healed.	The patient came for X ray treatment because irritation had set in, in the position of the healed ulcer. X rays reduced the irritation. The skin remains unbroken.
14	1 × 1½	10 ,,	1 S once a month.	4¼ months.	To have 1 S once a month.	None.	One week.	Ulcer just healed (Sept. 28th, 1909).

Cases 1, 2, 3, 9, and 12 were sent to me by Dr. Meachin at the X ray department of the Prince of Wales's Hospital. Cases 6, 7, 8, 11, 13, and 14 were treated by me for Dr. Lewis Jones at the X ray department of St. Bartholomew's Hospital. Cases 4, 5, and 10 are private cases. 1 S means one Sabouraud's dose.

FIG. 1.

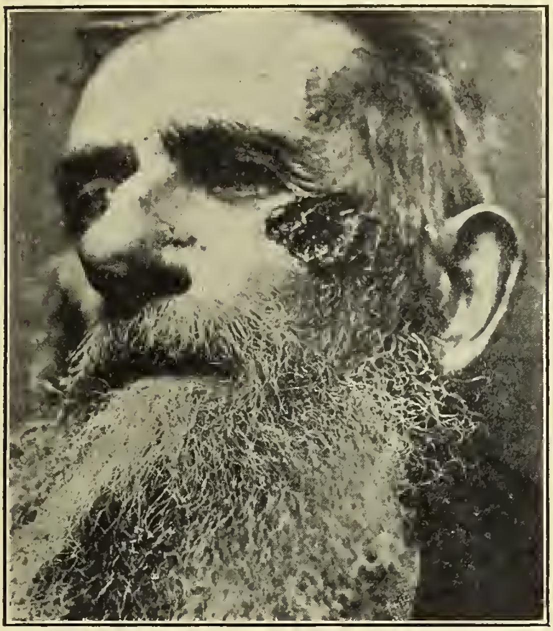
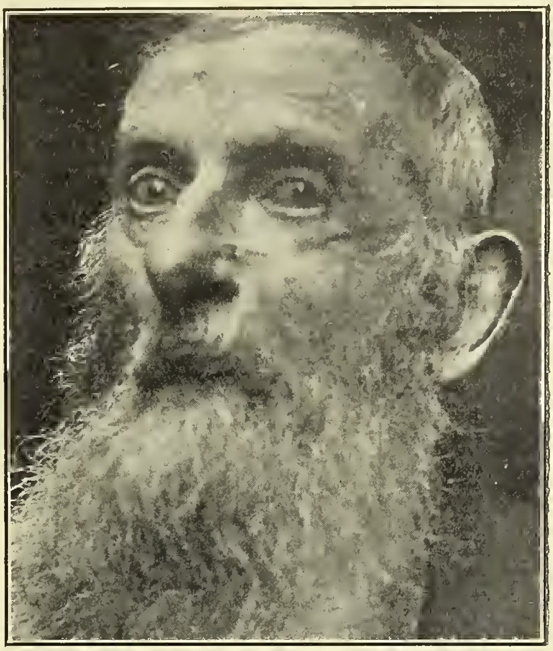


FIG. 2.



FIGS. 1 and 2.—Rodent ulcer treated by X rays. The treatment lasted seven months. See Table I., Case 1. The photographs were taken at the beginning and at the end of the treatment.

FIG. 3.

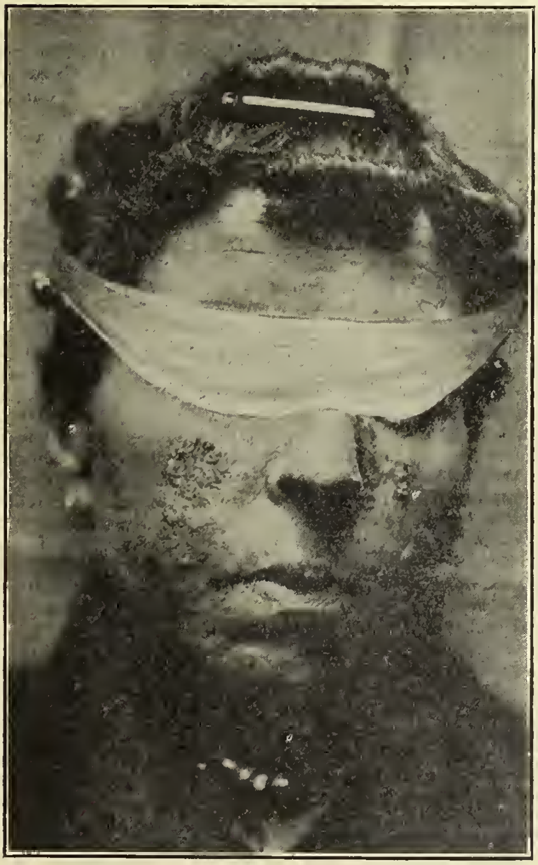
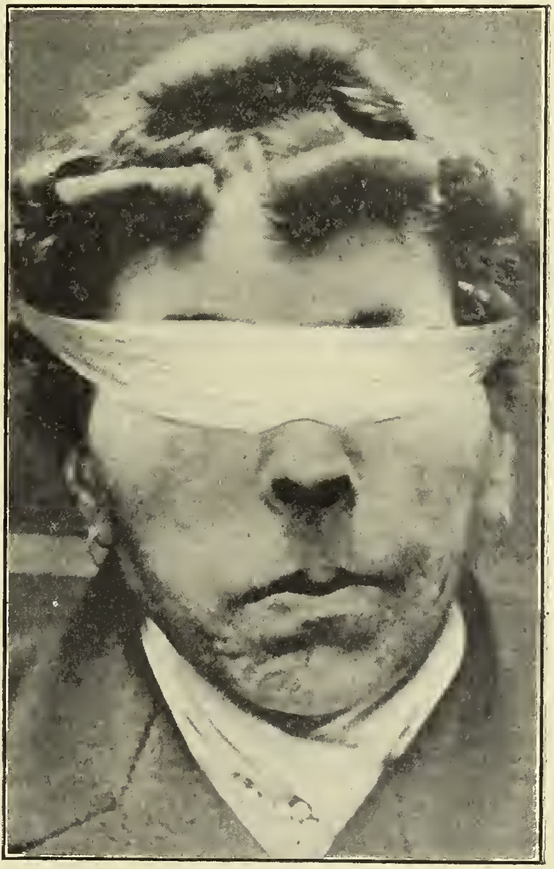


FIG. 4.



FIGS. 3 and 4.—Lupus treated by X rays. Nine months' treatment. One-third of a Sabouraud's dose once a week.

came for X ray treatment. Treatment was given twice a week. The source of X rays was 12 inches from the skin. A third of a Sabouraud's dose was given each time and the rays were filtered through a dozen layers of silk. The second photograph shows his condition after six months. He has remained well for the last nine months, and has been able to earn his own living for the last year. The following table (Table II.) shows the effect of X rays on the blood in a case of lymphosarcoma treated at St. Bartholomew's Hospital in the X ray department, and with it I have placed for comparison the similar effect of X rays on the blood in a case of splenic leucocythæmia at present under treatment at the same place (Table III.).

TABLE II.—*Showing the Changes which took place in the Blood in a Case of Lympho-sarcoma while undergoing X Ray Treatment. From ⅓ to ⅔ of a Pastille Dose was given Twice a Week during the Time that the Blood Counts were made.*

Date.	March.	April.			May.				June.	
	21st	14th	21st	28th	7th	14th	21st	28th	1st	28th
Red blood corpusles (in millions)	5	5	4	4·8	4·8	4·7	4·6	4·5	4·4	4·7
White blood corpuscles (in thousands)	11	16	15	10	9	8	7	7·5	7	9
Polymorphs (in thousands)	95	85	—	—	—	40	—	—	—	—
Lymphocytes (in thousands)	133	84	—	—	—	56	—	—	—	—

The greatest change in this case of lympho-sarcoma was thus the fall in the lymphocytes.

TABLE III.—*Showing the Changes in the Blood in a Case of Splenic Leucocythæmia while undergoing X Ray Treatment. One-third of a Pastille Dose was given Once a Week, except on Three Occasions, when ⅓ of a Pastille Dose was given Twice a Week.*

Date.	July.		August.		Sept.
	1st	21st	7th	21st	14th
Red blood corpuscles (in millions) ...	1·6	1·6	1·6	4·0	2·6
White blood corpuscles (in ten thousands)	110	104	92	98	32
Myelocytes (in ten thousands)	64	57	46	—	19
Polymorphs (in ten thousands)... ...	36	35	32	47	11
Lymphocytes (in thousands)	5·8	10·6	25·0	20·2	9·0

The chief change in the blood in this case of splenic leucocythæmia was the fall in the white blood corpuscles, and more especially of the myelocytes. These two tables are prepared from work done at the Pathological Department of St. Bartholomew's Hospital.

Thus you see the therapeutic value of X rays is very great, and the martyrs in the cause of science who are still suffering from the burns caused by X rays no longer represent what follows the use but the abuse of X rays. The dose is now as well known as the dose of castor oil, and whoever takes too big a dose of either must pay the penalty. "He is a fool who burns himself, and a knave who burns his patients."

ON March 9th Messrs Sotheby, Wilkinson, and Hodge sold the collection of rare and valuable editions of the Bible in various languages, the property of the late Dr. George S. Watson of Tunbridge Wells. A few books other than Bibles were included; among them was an old folio, "The Workes of that famous Chirurgion, Ambrose Parey, translated out of the French by Thomas Johnson, with an engraved title by T. Cecil, and numerous woodcuts, printed by R. Coates, 1649"; this was sold for £45.

THE TREATMENT OF LABOUR IN CONTRACTED PELVES, WITH SPECIAL REFERENCE TO THE JUSTIFIABILITY OF PUBIOTOMY.*

BY G. F. BLACKER, M.D. LOND., F.R.C.P. LOND., F.R.C.S. ENG.,
OBSTETRIC PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND THE GREAT NORTHERN CENTRAL HOSPITAL.

THE treatment of labour in contracted pelves must always be a matter of the greatest interest to those of us who practise and teach midwifery: firstly, because a clear appreciation of the problems involved and of their correct solution is necessary if we are to secure the best results for our patients; and secondly, because it is of the utmost importance that our teaching should be based upon a sure foundation, and one which will stand the test of adverse criticism.

Of recent years there has been a very remarkable revival of the operations performed for enlarging the pelvis, not only in Germany and in France, but also in America and to some extent in this country; and when we consider the names of the distinguished obstetricians who practise and teach these operations as a routine in their cliniques, it behoves us to consider carefully the facts upon which they base their practice and the results they have obtained.

It is noteworthy that of these operations the one most in favour among German operators—viz., pubiotomy—has been performed in Scotland, in Ireland, and in the provinces, but, so far as I am aware, no one has performed it in London. This occurrence is not without precedent, and is an interesting example of the caution and conservatism for which the London school of obstetrics has always been noted. If, however, we are to continue to regard with disfavour these operations then we owe it as a duty to ourselves to state our position with clearness and to put on record the reasons which lead us to prefer other methods of dealing with cases of labour in contracted pelves.

For the purpose of this paper I propose to consider contracted pelves in four classes, and to assume in discussing their treatment that in any given case the size of the child is that of a normal full-term baby.

In the *first class* may be placed those pelves with a true conjugate of 2⅖ inches or less, in which it is impossible to deliver, with any degree of safety to the mother, either a living or a dead child through the natural passages.

The consideration of this class need not detain us long. All such cases must be treated by abdominal section, by the classical Cæsarean section as an operation of election before the onset of labour, or during labour when the condition of both the mother and the child is good, or by one or other of the modifications of Cæsarean section such as Porro's operation, Cæsarean section followed by hysterectomy, or the formation of Sellheim's utero-abdominal fistula[1] in cases where the patient shows obvious signs of septic infection. It is true that a mutilated child can be and has been delivered through a pelvis with a conjugate measuring as little as 2½ inches, but at the present day in this degree of contraction the danger to the mother of the delivery of even a mutilated child through the natural passages is far greater than that of any of the varieties of Cæsarean section.

The *second class* will comprise pelves with a diameter of from 2⅖ to 3 inches—that is to say, those in which it is not to be expected that a living child can be delivered through the natural passages, but in which there will be, if necessary, no undue difficulty in delivering a mutilated child. Undoubtedly, in all such cases the ideal treatment is the performance of Cæsarean section either before labour or even during labour, provided that the condition of the mother and child is good, and that the life of the child has not been endangered by attempts at delivery. If the conditions are not suitable for Cæsarean section, or the patient shows any signs of septic infection, then if the application of forceps or the performance of version has failed, the child should be delivered by craniotomy or embryotomy.

The results obtained by the performance of Cæsarean section as an operation of election at the present day—that is, before labour has commenced or early in labour—in proper surroundings are so good both as regards the mother and the child that I think the indications for this operation, so far as we may accept the size of the pelvis as a guide, should be extended to pelves with a conjugate diameter of $3\frac{2}{5}$ inches.

---

* A paper read before the Harveian Society of London on March 3rd, 1910.

Thus Schauta[2] records 116 cases of Cæsarean section with four deaths, or a mortality of 3·4 per cent.; Gow[3] has operated upon 37 cases with no maternal deaths; and if we add his cases to those collected by Munro Kerr[4] and exclude those of Murdoch Cameron who had the altogether exceptional mortality of 10 per cent. we have 147 cases with eight deaths, a maternal mortality of 5·3. Reynolds[5] reckons the mortality of Cæsarean section performed before labour has commenced as 1·2 per cent., and there can be no doubt that Gow expresses the truth when he says "it may fairly be claimed that the operation when properly performed has a maternal mortality as low as any other simple abdominal operation, and that not merely is it not a dangerous operation but it is not even a severe one."

In these circumstances the suggestion that Cæsarean section should be regarded as indicated even when the conjugata vera measures as much as 8 or even 8·5 centimetres ($3\frac{1}{5}$–$3\frac{2}{5}$ inches) has been accepted and acted on by a number of obstetricians. Thus of 30 Cæsarean sections recorded by Olshausen in no less than 20 the conjugata vera measured 8 centimetres or more.

The danger to the child in a Cæsarean section undertaken early in labour or before labour commences is very small indeed; of Schauta's 116 cases only two of the children died, a fœtal mortality of 1·7 per cent.

For the sake of clearness I will consider next the *fourth class* of contracted pelves or those with a conjugate diameter of $3\frac{3}{5}$ inches or more, in which the spontaneous delivery of a living child at full term may be confidently expected. In this class of pelvis undoubtedly the best results, both to the mother and to the child, will follow spontaneous delivery. All such cases, therefore, should be allowed to go to full term and to deliver themselves naturally if they will do so, a sufficient length of time being allowed in the second stage for moulding of the head to occur and for the labour to be terminated without interference.

Of 5228 cases of contracted pelves among 49,397 births at Professor Schauta's[2] clinique spontaneous delivery occurred in 4116, a percentage of 77·8, with a maternal mortality of 0·09 per cent. and a fœtal mortality of 4·1 per cent., a result to the fœtus better than that given by any method of treatment with the exception of Cæsarean section, which, as I have already mentioned, was attended with a fœtal mortality of only 1·7 per cent. Krönig[6] has found that in pelves with a conjugate of from 8·5 centimetres to 9·5 centimetres ($3\frac{2}{5}$ inches–$3\frac{4}{5}$ inches) 86·5 per cent. of the labours were terminated spontaneously without interference, or 94 per cent. with the assistance of forceps.

One of the most important advantages of such spontaneous delivery, as Munro Kerr has pointed out, is the low fœtal mortality. He quotes Boenninghausen[7] as giving the fœtal mortality for spontaneous delivery in generally contracted pelves as 2·2 per cent. and for flat rachitic pelves as 2·7 per cent., while in artificially terminated labours the mortality was 41 per cent. for generally contracted pelves and 47 per cent. for flat pelves.

It is of the utmost importance that a sufficient length of time should be allowed in the second stage for moulding and engagement of the head to occur, for without doubt in many of these cases in the past and even at the present day unnecessary interference is carried out, and especially is this the case when an artificial limit is placed upon the length of the second stage of labour.

I need not stop to consider now the treatment of the small number of cases occurring in a pelvis of these dimensions in which spontaneous delivery does not occur, because the methods at our disposal for dealing with these will be dealt with fully in considering class No. 3. When difficulty does occur the usual cause is an excessively large or hard head, and if the head is of disproportionate size the treatment to be followed will naturally be that necessary with a pelvis of rather smaller measurements. For this reason, although it is of the utmost importance to remember that there are many other factors to be taken into account besides the mere measurements of the pelvis, such as the relation between the size of the child's head and that of the pelvis, the characters of the pains, the previous obstetric history, and the duration of the pregnancy, yet an artificial classification is very convenient for purposes of discussion and can be made to apply to all cases if it be assumed that the child is of average size.

I may pass on now to a consideration of the *third class* of pelves—namely, those with a conjugata vera of from 3 to $3\frac{3}{5}$ inches, the most important class of all, since it is with regard to the treatment of labour in pelves of this grade of contraction that the greatest difference of opinion exists.

In dealing with these cases the majority of English obstetricians have hitherto relied upon the induction of premature labour, the performance of Cæsarean section, the application of forceps to the head in or above the brim, the occasional performance of version mainly in cases where the forceps have failed to deliver or when the labour has been complicated, for example, by prolapse of the cord or by a placenta prævia, and as a last resource the performance of craniotomy or embryotomy on the dead or even on the living child.

What is the change in our methods of treatment which at the present time we are asked to adopt? We are asked to abandon the application of forceps to the head when moveable above the brim, to give up the performance of version and the induction of premature labour, and are told further that the performance of craniotomy on the living child is almost a criminal procedure. In place of these operations we are recommended to practise symphysiotomy or pubiotomy, and by some teachers of obstetric medicine are further told that pubiotomy is a simple operation and one to be undertaken readily by the general practitioner.

In view of these assertions it is necessary that we should consider our position seriously and make sure that the results upon which our treatment is based are such as will support us in our contention that the methods we practise and teach are the best for our patients and for their babies.

Perhaps the operation which is condemned by the adherents of pubiotomy most strongly is the old and essentially English one of the induction of premature labour. We are told that the results of this operation are exceedingly bad, and that few premature children survive their first year of life. What are the facts as far as they can be ascertained?

First of all with regard to the maternal mortality. The induction of premature labour has been practised at Queen Charlotte's Hospital[8] in 101 cases with no maternal mortality and on 80 occasions at University College Hospital with no maternal deaths and, indeed, with no ill-effects to the mothers. Of 2200 cases collected by von Sarwey[9] 32 of the mothers died, but only 13 of these deaths due to sepsis should be directly attributed to the operation, a mortality of 0·59 per cent., the other deaths being due to various complications, such as eclampsia, heart disease, and rupture of the uterus. It may be said without fear of contradiction that the maternal mortality after the induction of premature labour will not exceed from 0·3 to 0·5 per cent. if it be practised in the proper manner and in suitable surroundings.

Of 41 women admitted to University College Hospital during the years 1897–1908 with contracted pelves treated by the induction of premature labour on 93 occasions, 64 children were born alive and 29 were born dead, a fœtal mortality of 31 per cent. To the same patients 27 children were born spontaneously with 13 deaths, a mortality of 48 per cent., and 67 children were delivered by forceps or after craniotomy with 41 deaths, a death-rate of 60 per cent. In 11 of these patients the conjugata vera measured $3\frac{1}{2}$ inches or less and in these 10 of 21 children born after the induction of premature labour were stillborn, a fœtal mortality of 50 per cent. In 18 women with a conjugate diameter measuring between $3\frac{1}{2}$ and $3\frac{3}{4}$ inches 52 children were born after the induction of premature labour with 13 deaths, a fœtal mortality of 25 per cent. Some of these inductions were performed in other hospitals, some at the patient's own homes in the extern maternity department of University College Hospital, and the remainder in the hospital itself.

Of 81 cases of induction of premature labour carried out in the hospital during the years 1894–1907 inclusive, 61 children left the hospital alive on the fourteenth day and 21 died, a fœtal mortality of 25·8 per cent. In only one of these cases was labour induced after the thirty-seventh week.

But while the induction of premature labour is an operation practically without danger to the mother, although not entirely so, as Leopold's[10] figures of 84 cases with one maternal death from acute anæmia show, the results as regards the children are far otherwise. The fœtal mortality after the induction of premature labour, when the conjugate diameter measures less than 3⅖ inches, is as high as from 25 to 30 per cent. Thus Bar,[11] with a conjugate of from 3⅕ to 3⅖ inches (8 to 8·5 centimetres), reports a mortality of 31·5 per cent., Leopold,[10] for the same measurements, one of 25 per cent., and Munro Kerr,[4] with a conjugate of 3⅕ inches, one of 33 per cent.

In the 101 cases at Queen Charlotte's Hospital recorded by Eden[8] the fœtal mortality was only 13 per cent., but he does not distinguish the mortality with varying degrees of pelvic contraction, and in the absence of precise details as to the pelvic measurements and the duration of pregnancy it is impossible to compare these results with those already quoted. As they are so much better than any others with which I am acquainted it is to be hoped that they may be published in full detail.†

If we consider only pelves with a conjugate diameter above 3⅖ inches Bar's[11] results are more encouraging. For pelves with a conjugate of from 8 to 9 centimetres (from 3⅕ to 3⅗ inches) Bar records a mortality of only 12 per cent., and in pelves with a conjugate above 3⅗ inches one of only 8·6 per cent. In von Sarwey's[9] cases the immediate fœtal mortality amounted to 21·7 per cent., and the late mortality, including the children who died before leaving the hospital, to 37·2 per cent.

The conclusion to be drawn, from our figures at any rate, is that with a conjugate diameter measuring less than from 3⅗ to 3¾ inches the induction of premature labour will involve a fœtal mortality of at least from 20 to 30 per cent.

By those writers who object to the induction of premature labour it is often said that an excessive number of premature children, even if they leave the hospital well, die within the first year of life. The results recorded do not, however, bear out this statement. Lorey[12] in Halle found of 51 premature children leaving the hospital alive that 11, or 21·5 per cent., died during the first year of life, contrasted with a general mortality of 25 per cent. among all children during the first year of life in Halle. In the same way the death-rate of 45 premature children delivered in Leopold's[13] clinique in Dresden during the first year of life was 24 per cent. as contrasted with a general death-rate of 25 per cent. In this connexion the figures quoted by Scheffczyk[14] in Breslau are of the greatest interest. He found that of a total mortality of 27 per cent. of premature children during their first year of life, the mortality among the illegitimate amounted to 45 per cent., as contrasted with a death-rate of only 17 per cent. among the legitimate children.

I need not insist upon the fact that the induction of premature labour leads to a great saving of life when contrasted with labour occurring at full term in the same patients. Of von Herff's[15] patients, in 31 premature deliveries 80 per cent. of the children left the hospital alive, while in 61 full-term deliveries among 28 of the women 50 per cent. of the children were born dead. Of our 41 patients, in 93 premature deliveries 69 children were born alive, while of 94 full-term deliveries only 54 children survived.

In view of the fact that the immediate maternal mortality of the induction of premature labour is not more than about 0·5 per cent., and more important still that the after-effects of the operation are uniformly good, the patients recovering more quickly if anything than after a normal labour at full term, the main drawback to this procedure is the fœtal mortality which, even if the operation is undertaken only with a conjugate of 3⅗ inches, will amount to at least 25 to 30 per cent.

The treatment recommended in pelves of this class by most obstetric physicians in this country, and certainly by the majority of London teachers if the patient is seen during pregnancy, would be the performance of Cæsarean section when the conjugate diameter is below 3⅖ inches, and the induction of premature labour at a time to be determined by the relation between the size of the head and that of the pelvis when the conjugate is 3⅖ inches or more. What is the alternate mode of treatment we are at present asked to adopt? It is to allow the patient to go to full term and to practise pubiotomy in the second stage of labour if the head does not engage in the brim or if one or two attempts to deliver with forceps fail.

In order to come to a decision upon this point it is necessary to consider the results obtained for the mother and the child by the practice of pubiotomy, as compared with the alternative procedures. I propose to confine my remarks to pubiotomy, because with regard to the difficulty of performing the two operations of symphysiotomy and pubiotomy there is but little to choose, and because I agree with Jeannin and Cathale[16] in considering pubiotomy the better operation of the two for the following reasons. While it gives the same immediate increase in the size of the pelvis and the same advantages, if any, as concerns future confinements, it does not necessitate the opening up of a joint, it entails less chance of the occurrence of immediate or remote complications, and both the maternal and fœtal mortality are less than that of symphysiotomy.

Kroemer[17] estimates that pubiotomy is capable of giving the same degree of enlargement to the pelvis, but that to obtain it a greater degree of force is necessary to separate the fragments. Elischer[18] has demonstrated that the actual increase in the conjugate diameter is but small, the main increase being in the transverse diameter, which may become enlarged to the extent of from 14 to 23 millimetres. If the union between the two fragments is a fibrous one, as Oberndorfer[19] has been able to demonstrate in the case of a patient dying 14 months after the operation, then the possibility of a permanent increase in the measurements of the pelvis is probably as great as that occurring after symphysiotomy. The anatomical researches of Tandler[20] tend to show that the line of section in a pubiotomy is less dangerous than that of a symphysiotomy, as it is further from the urethra and the bladder, the prevesical plexus of veins, and the pubo-vesical ligaments.

The detailed study undertaken by Jeannin and Cathale[16] of the immediate and remote accidents of the two operations tends to show that they are both less frequent and less severe after pubiotomy. Finally, in comparing the two procedures, Bar[11] estimates the mortality, both maternal and fœtal, as distinctly greater after pubiotomy than after symphysiotomy, and in these conclusions he is supported by the majority of writers on the subject. In a series of 143 cases operated upon by Bumm,[21] Leopold,[22] and Bürger[23] there was only one maternal death, a death-rate of 0·7 per cent., but it must be remembered that this represents the best results which have been obtained; and the mortality in 294 cases collected by Döderlein[24] was 5·9 per cent., so that it is unlikely that in large numbers of cases, even in the best conditions, the mortality will be much less than 2 to 3 per cent. The mortality to the children is about 7 per cent.; thus of Leopold's 60 cases 4 of the children, or 6·6 per cent., died; and in 225 cases collected by Döderlein the fœtal death-rate was also 6·6 per cent.

While, however, it is true that the immediate maternal mortality is small, yet the possible sequelæ of the operation are both numerous and serious, and the maternal morbidity amounts to from 40 to 60 per cent. of all cases. The most important of the ill effects from this operation are as follows.

Hæmorrhage as a general rule is not excessive. Thus Kroemer[17] met with serious hæmorrhage in only 3 per cent. of his cases. Rosthorn[25] has, however, recorded a fatal case from this cause. The bleeding comes from the crus of the clitoris, the prevesical plexus of veins, the bulbs of the vestibule, and in some cases from tears of the vulva and vagina. The formation of thrombi is not uncommon. Tandler[26] observed them in 7 of 19 cases. The most important and the most serious, however, of all the lesions are tears of the vulva and vagina. The occurrence of these tears depends mainly upon two factors: the condition of the soft parts and especially the presence of considerable rigidity, hence their frequency in primiparæ, and the manner in which the labour is terminated. Whenever possible this should be allowed to occur spontaneously. Kroemer[17] records 22 tears in Bumm's 53 cases. Of these three followed spontaneous delivery and 19 artificial delivery. That they are not a necessary accompaniment of pubiotomy even in primiparæ is shown by the experience of Whitridge Williams,[27] who in 13 cases, including 9 primiparæ, saw only one bad vaginal tear. He attributed his immunity to the plan followed in his cases of carrying out manual dilatation of the vulva and vagina before the operation is performed. The great danger of such tears consists in the fact that they may convert the section of the bone into a compound fracture.

---

† In the reports of the hospital under the heading of induction of labour a number of cases are included in which labour was induced at full term. Obviously all such cases must be excluded in estimating the results of the induction of premature labour.

Injuries to the bladder constitute another grave accident which is far from being uncommon; in 200 cases it occurred 27 times, or in 13 per cent. These lesions can be caused either by tearing of the tissues or by injury inflicted by the needle. Of 19 lesions of this kind 12 were due to the first cause and 7 to the second. For this reason the operation, as performed by Döderlein, in which such an accident is easier to avoid, appears to be preferable to the strictly subcutaneous method of Bumm. Further than this, by free separation of the bladder from the back of the pubes the risk of tearing the former is considerably lessened. Such lesions of the urinary organs are likely to be followed by infiltration of urine or the formation of vesico-vaginal fistulæ. Infection of the wound is the rule rather than the exception and occurs in at least half the cases, the morbidity varying from 40 to 60 per cent. Septic phlebitis is naturally a not uncommon complication.

The remote sequelæ are not of so much importance. Although the union of the two fragments often occurs by the formation of fibrous tissue, yet any interference with locomotion is quite the exception. Occasionally there has been some tendency to prolapse of the genital organs and in 5 cases of 34 Kroemer observed incontinence of urine; in 2 of these cases there was complete paralysis of the sphincter vesicæ. In a few cases an inguinal hernia has followed the operation, due no doubt to the weakening of the inguinal canal owing to the loss of the bony support, and a hernia through the gap in the bone not involving the inguinal canal has also been observed.[28] This accident has mainly followed the open method when the wound has suppurated.

With regard to the methods commonly employed in preference to pubiotomy, the application of high forceps to the head when it is above the brim and not engaged is an operation attended with a high fœtal mortality and with some danger to the mother. Of 147 cases of high forceps recorded by Schauta[2] two of the mothers died, a maternal mortality of 1·3 per cent., and 57 of the children, a fœtal mortality of 38·7 per cent. Munro Kerr[4] points out how markedly the danger to the fœtus increases with the increase in the degree of pelvic contraction; for example, with a conjugata vera down to and including 3½ inches the fœtal mortality is 10 per cent., with one of 3¼ inches 25 per cent., and with one of 3 inches 40 per cent.

I need not delay to discuss the question of the performance of version in contracted pelves. It is generally admitted that it is inferior in its results to the use of axis-traction forceps, and that while in a few cases it is possible to deliver a patient by version after forceps has failed, yet as a general rule the use of axis-traction forceps is preferable to the performance of version.

If it is not possible to deliver the child by forceps or by the performance of version and we do not practise pubiotomy, we are left with the alternative of Cæsarean section late in labour or of craniotomy on the dead or even on the living child. The operation of craniotomy or embryotomy in all but the most extreme degrees of pelvic contraction should be attended with no maternal mortality, but in many cases these operations are only undertaken as a last resource in the case of patients upon whom many attempts have been made to effect delivery and who not infrequently already show signs of commencing septic infection. For these reasons the operation is associated with a certain mortality. In 22 cases of craniotomy performed in contracted pelves I have had two maternal deaths, a mortality of 9 per cent., one from rupture of the uterus and the other from shock in a patient who had been many hours in labour and upon whom many attempts had been made to effect delivery before her admission to the hospital. In 63 operations performed by Munro Kerr[4] or his assistants there were eight deaths, a mortality of 12·6 per cent. Schauta[2] records 82 operations on the dead child with a mortality of 6 per cent., and 76 operations on the living child with a maternal mortality of 1·3 per cent.

We have seen that the risk to the mother of Cæsarean section performed as an operation of election before the onset of labour may be estimated as from 2 to 3 per cent., and that from 95 to 98 per cent. of the children are born alive. What is the risk of Cæsarean section when performed late in the second stage of labour some time after the rupture of the membranes? This is a question for an answer to which the data are not very numerous.

Of the 37 cases recorded by Gow[3] with a maternal mortality of *nil*, there were six cases in which the patients had been in labour for varying periods of time from 15 to 78 hours, and in all of these the child was born alive. Jeannin and Cathale[16] have collected 39 cases of Cæsarean section performed late in labour, in many instances the patient having been some days in labour, with only one maternal death due to accidental burns some 15 days after the operation, and with only one fœtal death among the children alive at the time the mother was operated upon. In only six of these cases had any attempts been made to deliver with forceps, and in 26 of them the condition of the mother is said to have been good at the time the operation was performed.

If we accept these figures—and it must be remembered that of isolated cases only the successful ones are likely to be published—then the dangers of Cæsarean section performed late in the second stage of labour, even with the membranes ruptured, provided that the patient presents no signs of infection, have been exaggerated.

The danger of a Cæsarean section when the patient presents any signs of septic infection is very great, and such a condition is an absolute contra-indication to the performance of the classical operation. In these cases the operation should be combined with removal of the uterus, or a Porro-Cæsarean section should be performed. It is in this class of case that the suggestion has been made to practise extra-peritoneal Cæsarean section, but while infection of the cellular tissue is not likely to be so dangerous as infection of the peritoneum, yet it may lead to very severe risk to the patient's life. For this reason Sellheim[1] has suggested in certain infected cases the formation of a utero-abdominal fistula.

Now that we have considered shortly the prognosis of the various operations which can be performed in cases of contracted pelvis we are in a position to compare the new methods practised and supported by the high authority of Bumm, Leopold, and Döderlein with the procedures commonly adopted by English obstetricians.

In flat pelves with a conjugate diameter of from 3 inches to 3⅗ inches, for Cæsarean section at the end of pregnancy (with a maternal mortality of from 2 to 3 per cent. and a fœtal mortality of from 2 to 4 per cent.), or for the induction of premature labour (with a maternal mortality of 0·5 per cent., and if it is praotised in pelves with a conjugate less than 3⅗ inches according to our results a fœtal mortality of at least 25 per cent.), we are asked to substitute pubiotomy (with a maternal mortality of about 2 per cent., a morbidity of from 40 to 60 per cent., and a fœtal mortality of 7 per cent.).

As compared with Cæsarean section performed before the onset of labour, or early in labour, pubiotomy presents no advantages either to the mother or to the child. When we compare it, however, with the induction of premature labour the question is more difficult; the immediate danger of pubiotomy is certainly greater than that of the induction of premature labour, and pubiotomy is likely to be attended or followed by a number of serious complications which are entirely wanting after the induction of premature labour. On the other hand, pubiotomy has a fœtal mortality of not more than 7 per cent., while the induction of premature labour in pelves with a conjugate less than from 3⅗ to 3¾ inches is likely to be followed by a fœtal death-rate of at least 25 per cent. What, then, is to be our choice in the matter? Are we ever to expose the mother to the increased risk of pubiotomy for the sake of the lessened fœtal mortality?

I would submit that the right solution of the problem is this. In any case in which it is considered inadvisable to perform Cæsarean section, or in which this operation is rejected by the patient, and in which the induction of premature labour has been followed by the birth of a still-born child on one or more occasions, the patient may be allowed to go to full term, and, if necessary, pubiotomy may then be performed. An additional advantage of this plan of treatment would be that in many cases the necessity for pubiotomy would not arise, since spontaneous delivery might occur, a result which, as we have seen, is attended with the minimum of risk to both the mother and the child. It must be remembered that although it is quite true that in the average pregnant woman the operation of Cæsarean section is an easy and safe one, yet pregnancy does occur from time to time in women in whom any abdominal section would be an extremely dangerous operation, and such a patient might, if it were necessary, prefer pubiotomy to the destruction of her living child.

If the patient is in labour when seen and the head fails to engage or is arrested at the brim, then, if moderate traction with high forceps fails, in place of the forcible delivery with forceps of the head through the brim (an operation which entails a fœtal mortality of at least 40 per cent.) or the performance of version (which entails even a higher fœtal mortality) Cæsarean section should be performed; while if the case is considered unsuitable for the performance of late Cæsarean section, then pubiotomy certainly may be substituted for craniotomy of the living child. Pubiotomy should, however, only be practised if it is certain that the child's life has not been in any way imperilled, and in view of the serious complications which may follow it is not an operation suitable for private practice, and should only be performed in such surroundings as obtain in a hospital.

Bibliography.—1. Sellheim: Münchener Medicinische Wochenschrift, 1908, No. 42, S. 2207. 2. Schauta: Journal of Obstetrics and Gynæcology of the British Empire, vol. xv., No. 5, p. 311. 3. Gow: Harveian Lecture, 1907. 4. Munro Kerr: Operative Midwifery, 1908. 5. Reynolds: Transactions of the American Gynæcological Society, vol. xxvi., 1901, p. 277. 6. Krönig: Die Therapie beim engen Becken, Leipzig. 1901. 7. Von Boenninghausen: Zur Prognose der Geburt beim engen Becken, I.D., Berlin, 1895. 8. Eden: Brit. Med. Jour., Feb. 26th, 1910, p. 505. 9. Von Sarwey: V. Winckel's Handbuch der Geburtshülfe, Band iii., Theil 1, S. 142. 10. Schödel: Archiv für Gynäkologie, 1901, Band lxiv., S. 151. 11. Bar: Leçons de Pathologie Obstétricale, 1900. 12. Lorey: Archiv für Gynäkologie, Band lxxi., S. 316. 13. Leopold und Konrad: Ibid., 1907, Band lxxxi., S. 648. 14. Scheffczyk: Ibid., 1905, Band lxxv., S. 633. 15. Von Herff: Volkmann's Sammlung klinischer Vorträge, N.F., Nr. 386, xiii. Serie, S. 269. 16. Jeannin et Cathale: L'Obstétrique, 1908, p. 440. 17. Kroemer: Berliner Klinische Wochenschrift, 1908, No. 22. 18. Elischer: Zentralblatt für Gynäkologie, 1907, No. 24, S. 690. 19. Oberndorfer: Ibid., 1908, No. 7, S. 201. 20. Tandler: Ibid., 1905, No. 28, S. 889. 21. Bumm: Ibid., 1908, No. 19, S. 609. 22. Leopold: Münchener Medicinische Wochenschrift, 1907, No. 40, S. 2006. 23. Bürger: Die Geburtsleitung bei engem Becken, Wien, 1908. 24. Döderlein: Münchener Medicinische Wochenschrift, 1907, No. 24, S. 1195. 25. Rosthorn: Zentralblatt für Gynäkologie, 1907, No. 24, S. 702. 26. Tandler: Ibid., 1906, No. 3, S. 87. 27. Whitridge Williams: American Journal of Obstetrics, vol. liii., No. 2, 1908. 28. Hartmann: Zentralblatt für Gynäkologie, 1907, No. 21, S. 585; Franz: Ibid., 1907, No. 24, S. 701; Mann: Ibid., 1907, No. 44, S. 1283.

Wimpole-street, W.

FURTHER EVIDENCE ON THE HOMOGENEITY OF THE RESISTANCE TO THE IMPLANTATION OF MALIGNANT NEW GROWTHS.[*]

BY E. F. BASHFORD, M.D. EDIN.,
DIRECTOR, IMPERIAL CANCER RESEARCH FUND, VICTORIA EMBANKMENT, LONDON, W.C.;
AND
B. R. G. RUSSELL, M.D. ABERD.,
ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

THIS paper is based mainly on a study of the processes at the site of implantation of a malignant new growth when a secondary implantation is practised on mice already bearing transplanted tumours. New evidence will be adduced supporting the view that concomitantly with the establishment of such tumours an active resistance may be induced by the absorption of tumour tissue (Figs. 1 and 2). When a secondary inoculation fails, this failure is due to an active resistance to the cancer cells introduced, similar to that induced in normal animals by the absorption of tumour tissue or normal tissue of the same species. The process consists essentially in the cancer cells failing to elicit the specific connective tissue and vascular scaffolding necessary to their establishing themselves and growing into a tumour. In order to simplify still further prevailing conceptions of the process of immunity to cancer, we shall record corresponding observations on rats where the primary inoculation of a mouse carcinoma has been followed by a secondary inoculation of mouse tumour (Figs. 3 and 6).

In the First Scientific Report of the Imperial Cancer Research Fund (March, 1904) it was stated "in the light of the phenomena of immunity, it is interesting to note that it is possible to obtain multiple tumours from transplantations performed on the same date, and that transplantation can be successfully performed in animals in which tumours have already developed 14 days to 10 weeks after the first effective transplantation—i.e., both when the primary tumour is small and when it has attained a large size." These positive results appeared to be important, first, because of their correspondence with the dissemination and formation of metastases in the normal course of the progress of cancer in man; and secondly, because they afforded a basis for studying the conditions, favourable and unfavourable, to the establishment of secondary implantations in animals already bearing tumours, and hence had also an indirect bearing on the control of natural metastases. Therefore, these observations formed one of the starting points of our studies on the induction of resistance to the inoculation and growth of cancer. Their importance was enhanced later by the success attending efforts to reproduce experimentally both the local infiltrative and the disseminated lesions of the disease.

Other investigators, who at a later date were not so successful either in reinoculating animals already bearing tumours or in reproducing the lesions of dissemination, have quite naturally drawn conclusions opposed to those drawn by us; for example, in April, 1906, Ehrlich reported "if metastasis formation be imitated experimentally by reinoculating animals 8 to 10 days after they had been successfully inoculated with a rapidly growing tumour, then the second inoculation, whether it be made with the same or with a different tumour, does not take with few exceptions."[1] Ehrlich was led to attach enhanced importance to his observations by the fact that metastases were rare, or, if present, only of microscopical size, in his inoculated animals. He sought an explanation common to the two groups of observations in the assumption of "atreptic" immunity, meaning thereby that the rapidly growing tumour prevented successful reinoculation and the establishment of metastases by withdrawing special nutritive substances (Substance X) from the circulation. The idea of "atreptic" immunity has been extended to explain also the transitory growth of mouse tumours in rats by assuming that growth ceased when the hypothetical Substance X, introduced with the graft, was exhausted. Ehrlich[2] modified his standpoint in 1908 in so far as to admit that reinoculation may be successful, although he maintains that the secondary tumours remain smaller than the corresponding tumours in control animals, and therefore he adheres to his assumption of the existence of an "atreptic" immunity.

The foregoing summary shows that the elucidation of the nature of active resistance to cancer has been complicated both by contradictory observations and by conflicting explanations of facts, regarding which there is complete agreement. These difficulties are associated more especially with the results following upon the secondary inoculation of animals already bearing tumours as the result of primary inoculation. Some authors have succeeded where others have failed to obtain secondary tumours in this way. The methods by which secondary inoculations can be successfully carried out, the importance of dosage,[†] and other technical details, have been fully explained in a series of papers, and the contradictory results harmonised.[3, 4, 5] It is, however, necessary to meet hypothetical explanations of the reasons why a secondary inoculation may fail, by recording the results of actual observation of the processes responsible, and comparing them with those following the induction of active resistance in normal animals. Therefore, the histological details of the process have been ascertained by examining the site of reinoculation at definite intervals. This method is conveniently called the examination of "early stages."[‡] By its means the true nature of the transplantation of cancer was demonstrated,[6, 7] and later it revealed how important for the implanted cancer cells was the provision of a specific supporting and nutritive scaffolding by the tissues of

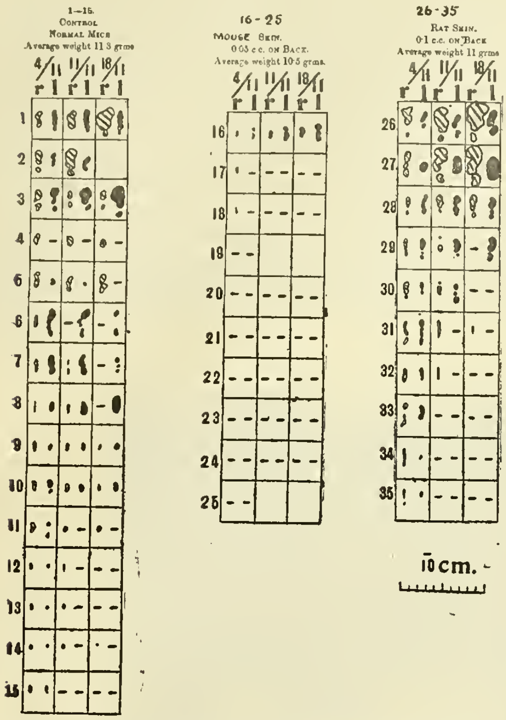
---

[*] A paper read before the Royal Society on Feb. 3rd, 1910. (The superior figures refer to the bibliography at the end of the article.)

[†] It is impossible to compare the rate of growth of the tumours following inoculation if the amount of material inoculated as the starting point of growth is not stated. This factor still continues to be neglected, even in the most recent investigations of tumour growth. Cf., Moreschi, Zeitschrift für Immunitätsforschung, 1909.

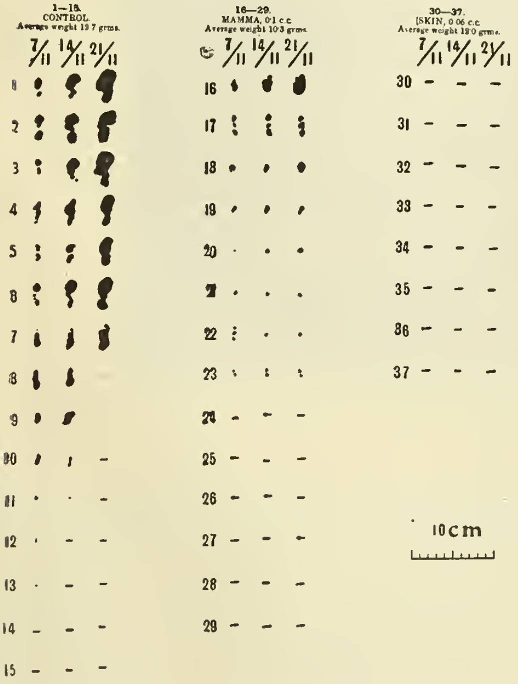
[‡] Fully described in the Scientific Reports of the Imperial Cancer Research Fund.

FIG. 1.



Protection against the inoculation of squamous-celled carcinoma (diagonally striped), and alveolar mammary carcinoma (full black), induced by the preliminary absorption of normal skin of the mouse, but not of the rat.

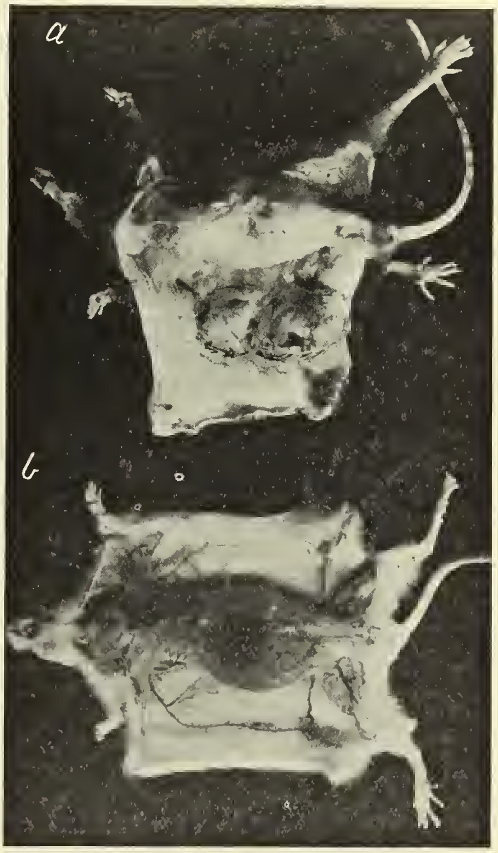
FIG. 2.



Protection against the inoculation of cancer is conferred by the absorption of tumour tissue or of normal tissue (blood, skin, spleen, &c.) of the same species, but not of strange species. Here protection against inoculation of squamous-celled carcinoma of the mouse has been induced by a preliminary absorption of mouse mamma and of mouse skin, and a greater degree of protection has been obtained with skin than with mamma, although twice as much mamma was used.

the new host.[3] It also demonstrated that in mice rendered resistant to carcinomata there was a failure to supply this specific scaffolding, and hence the conclusion was arrived at that actively resistant animals robbed the cancer cells of the chemiotactic powers they exercise on the connective tissues of the host.[4] This failure of the specific stroma reaction was seen both when resistance was induced by the previous absorption of tumour tissue and by the previous absorption of normal tissue—whether adult or embryonic—of the same species (Figs. 4 and 5). For the elucidation of the mechanism of resistance there is at present no alternative to actual observation of the site of the inoculation of cancer cells in living animals. Without resort to this laborious method the hypothetical assumption of an atreptic immunity was advanced to explain why a secondary inoculation may fail in an animal already bearing a tumour. By employing it the facts recorded in this paper have been elicited; they harmonise with what has been stated elsewhere on the successful reinoculation of animals already bearing tumours, and show that the resistance which may exist to reinoculation under these circumstances is identical in its nature and mechanism with that which can be induced in normal animals—i.e., in the absence of a tumour.

FIG. 3.

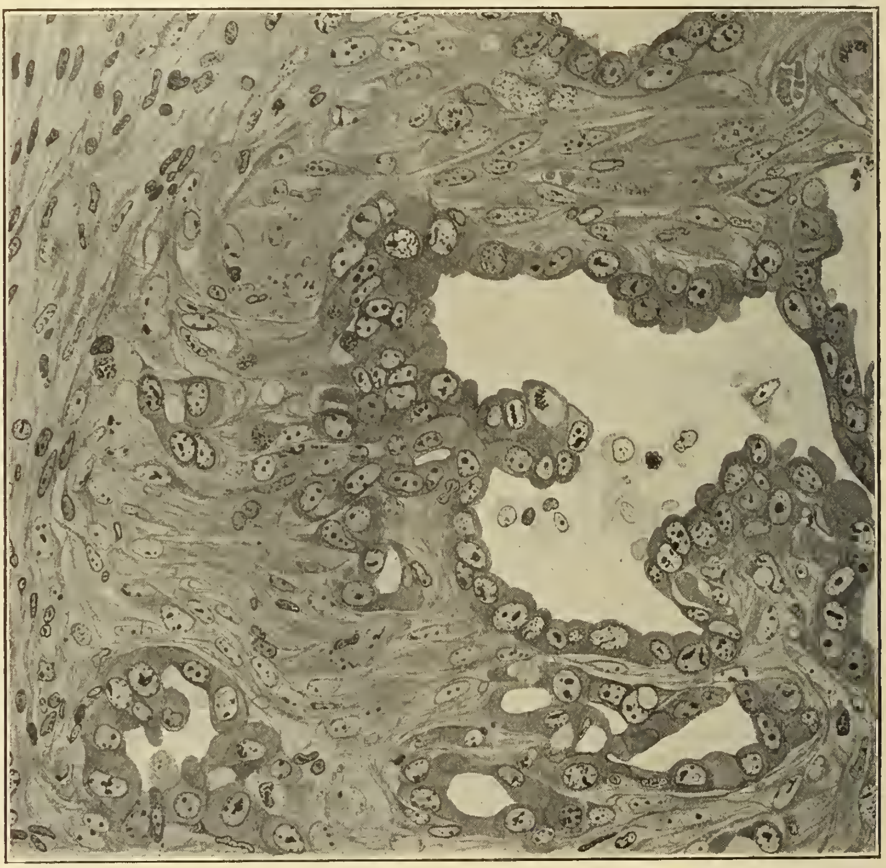


Site of inoculation of squamous-celled carcinoma after 13 days in a normal mouse (*a*) and in a mouse immunised by the absorption of mouse skin (*b*); in the latter the inoculated tissue is dead, whereas in the former a large tumour has developed, is adherent to the abdominal wall, and in the further course of its growth would probably have produced metastases. The early examination of the site of inoculation is illustrated in Figs. 4 and 5.

It is immaterial which of the 65 tumour-strains growing in the laboratory is used to illustrate the facts, since they agree for all the strains that have been tested, whether slowly or rapidly growing. Some tumour-strains illustrate a larger number of the sum-total phenomena than others. Thus, strain "199" is very suitable for studying the relations existing between a growing tumour and the host bearing it.

This tumour, an adeno-carcinoma of the mamma, has now been propagated for 15 months, and gives from 70 to 100 per cent. of tumours when inoculated into a fresh batch of mice. The inoculated tumour cells proliferate very rapidly, so that, when the strain is in a positive phase of growth, from a dose of 0·05 gramme, tumours weighing about 1·5 grammes may be obtained after 10 days in all the mice inoculated. The subsequent behaviour of the individual tumours of the same series is very variable; about a third of them will continue to grow rapidly during the next two to three weeks; another third will show a very much slower speed of growth for two to four weeks and then resume a speed of growth somewhat slower than the original speed of proliferation; the remaining tumours will be gradually absorbed and disappear after three to five weeks. A single series of daughter tumours of this strain "199" illustrates the extremes of behaviour presented by other tumours—viz., those growing progressively and rapidly in all animals inoculated and those exhibiting transitory proliferation only, even when implantation is successful in 100 per cent. of the animals inoculated. The parts played respectively by active resistance induced concomitantly with the development of the tumours and by the qualities of the tumour cells themselves in determining the different behaviour of different tumours have already been fully discussed.[4 5]

FIG. 4.

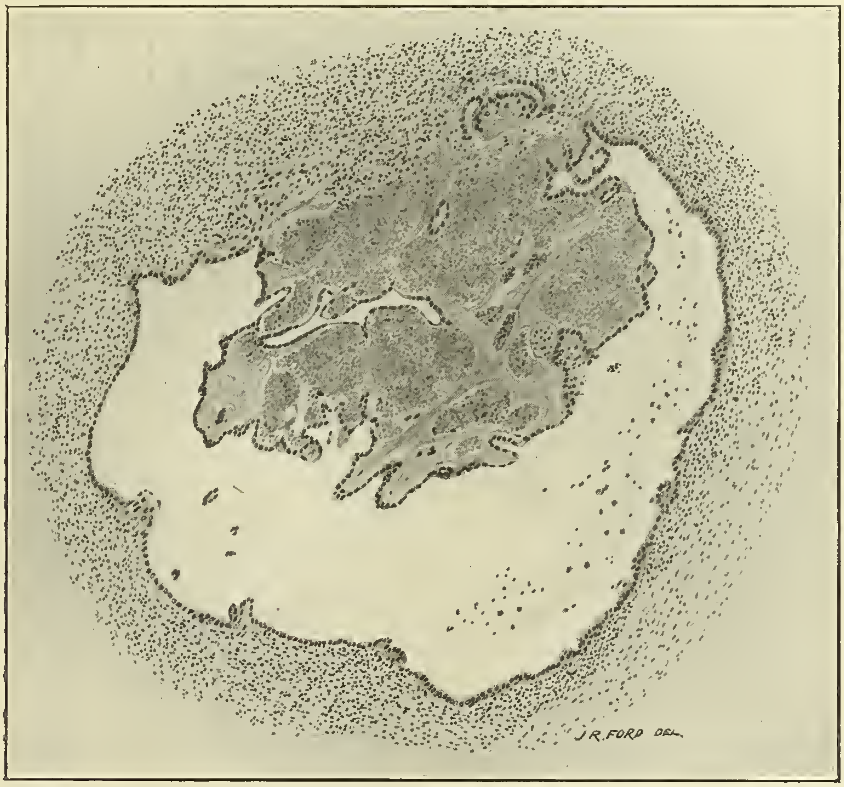


Formation of new stroma in "early stage" of tumour 27. Killed four days after inoculation. Surface of graft showing ingrowth of new fibroblasts and capillaries. Proliferation of parenchyma with formation of new acini. × $\frac{330}{1}$.

Advantage may be taken of the behaviour of tumour "199" to obtain a concise survey of the nature of the resistance or immunity against the reinoculation of cancer in animals already bearing tumours. Series of mice, usually 20 in number, bearing growths 10 days old of tumour "199" in the right axilla, have been reinoculated in the left axilla with another tumour either of the same strain or of another strain. Briefly, the result has been that the reinoculation has failed to give rise to a tumour except in the cases where the tumour primarily inoculated has continued to grow rapidly. Where the primarily inoculated tumours have slowed up in their speed of proliferation, or where they have begun to diminish in size, the result of the reinoculation has been that no tumours developed. In other words, the better the growth of the primary inoculation, the more favourable are the chances for a tumour developing from the second inoculation. This result confirms those previously recorded from this laboratory.[5] The possibility can be excluded of the degree of hindrance to secondary inoculation being in direct proportion to the rate of growth of the primary tumour.

Investigation has also been made of the details of the processes at the site of the reinoculation in mice 10 to 12 days after the primary inoculation of tumour "199." It has been found that there is an inhibition of the stroma reaction in those mice whose primary tumours had shown a slowing-up in their speed of growth or had begun to diminish in size. A study of the actual mechanism of resistance to reinoculation points unambiguously to its being due to the induction of an active resistance to the cancer cells identical with that described for normal animals.[4] (Figs. 4 and 5.) It is possible for a mouse bearing a growing tumour to be actively resistant to reinoculation, a fact which has already for other reasons been attributed to concomitant immunisation arising from absorption of a portion of the already established tumour.[9] The successful reinoculation of mice bearing the most rapidly growing "199" tumours is easily understandable on this basis, as in this case the amount of absorption of tumour tissue is practically *nil*, and resistance has not been established. The assumption of a special "atreptic" immunity in the case of animals already bearing tumours, where the host is passive and the tumour active by withdrawing food, to explain the failure in certain cases to reinoculate an animal the bearer of a growing tumour is superfluous.

FIG. 5.



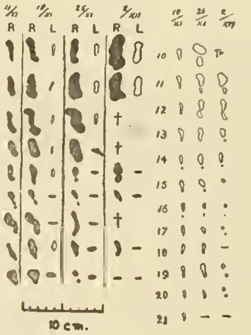
The whole of a graft in a "27-immune" mouse, preserved five days after inoculation. The main mass of the graft is necrotic and has shrunk somewhat. A thin layer of healthy cells remains applied to the host tissues, and another covers the necrotic centre. The cystic space between these two layers contains fluid and degenerated tumour cells. There is no attempt at revascularisation. The tissues of the host contain a large number of polymorphonuclear leucocytes, lymphocytes, and polyblasts. $\times \frac{60}{1}$.

An immunity developing when cancer of one species is inoculated into another species of animal has been assumed by some workers to be an immunity against cancer. Only the most rapidly growing of mouse tumours when inoculated into rats grow for 6 to 8 days according to Ehrlich[10] quite as well as in mice, but after this date they become absorbed, and the animals are then actively immune. If removed at the height of their development from the rats and inoculated into mice or rats Ehrlich states they grow in the former but do not grow in the latter. The temporary growth in rats is explained by Ehrlich as another instance of atreptic immunity due to the absence in the rat of an unknown specific substance necessary for the growth of mouse tumours. The transitory growth of mouse tumours in rats has been shown to be common to those of slow growth[4] as well as of rapid growth, including Jensen's carcinoma for which the possibility was denied. In the Third Scientific Report of the Imperial Cancer Research Fund the nature of the tissue reaction was demonstrated when rats inoculated 14 days previously with mouse tumour were reinoculated—i.e., while they were actively immune against mouse tumours. Further, this immunity was shown to be of a different character from the immunity of mice against mouse tumours. When rats immunised with mouse tumours were inoculated with "early stages" of a mouse tumour there took place an active destruction of the introduced tumour graft. After two to three days there was scarcely a single cancer cell left, whilst the surrounding rat tissues were proliferating actively and invaded the dying graft. Here one had to deal with an active immunity against a foreign protein, and not with an immunity against a cancer cell as such. In spite of the observations made and recorded at that time, von Dungern and Coca[11] have since compared a similar phenomenon with the immunity against cancer from which it is so totally different, and have built up an hypothesis of "allergetic" immunity against cancer. They performed their immunity experiments with an epidemically occurring fibrocellular growth of the hare, which they had succeeded in transferring through eight generations in a strange species—viz., in rabbits. They find that when a rabbit has been successfully inoculated with this growth it is impossible to obtain success with a reinoculation. The site of reinoculation is frequently the seat of a marked œdema, and they have found by histological examination of the site two or more days later that there is extensive reaction with production of large mononuclear cells which are specially abundant in the veins and capillaries. They regard this action as being evidence of a tissue immunity, and especially of the nature of a local hypersensibility, in that the tissues having been once exposed to the action of these foreign cells, they react more energetically to a second inoculation of them, apparently as the rat tissues have been described to do to reinoculation of mouse tumour. Von Dungern and Coca have not made the direct observation that, in transferring this hare tumour to rabbits, they have been effecting a transplantation. If we accept their view, based upon indirect observations, that the transference of this tumour is really a transplantation, then their immunity results are comparable to those obtained in rats when inoculated with mouse tumour, with this difference, that it has been possible to propagate the hare tumour through several generations of rabbits. In a recent publication von Dungern and Hirschfeld[12] claim that this local allergetic reaction is of great importance in its bearings on immunity to cancer.

The following experiments show how very different is the nature of the immunity produced by inoculating cancer of a strange species from the resistance to cancer produced by the absorption of tumour or normal tissues of the same species. In these experiments the behaviour of tumour-strain "199" has been studied in the rat. When 0·2 cubic centimetre of this tumour is inoculated into rats, tumours 2 to 3 centimetres long by 0·5 to 0·75 centimetre broad are obtained in from eight to ten days. Histological examination of these tumours at about the eighth or ninth day has shown them to be composed almost entirely of granulation tissue, which in the rat is mainly fibroblastic with a small central canal containing the inoculated tumour tissue, for the most part as necrotic débris. If examined at an earlier date, fifth or sixth day, small islets of carcinomatous tissue are seen lying in a very cellular tissue, the whole having the appearance almost of a carcinoma sarcomatodes. If the tumour be removed from the rat at this earlier stage, and inoculated back into mice, it gives rise to tumours, but these do not grow so well as before *passage* through the rat, and the percentage of tumours obtained is only about a third of the previous percentage.

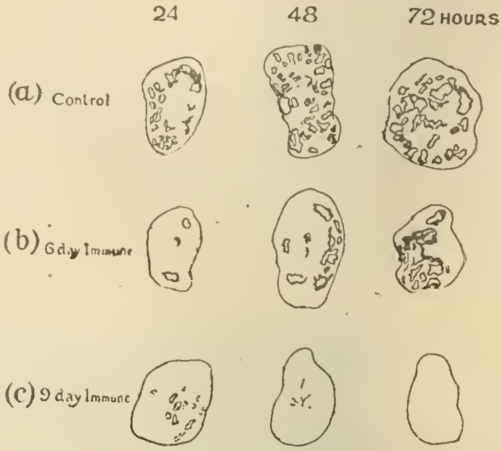
Nine rats, weighing 490 grammes, were inoculated on the dorsum with 0·2 cubic centimetre of an emulsion of mouse tumour "199." Three days later other nine rats, weighing 510 grammes, were inoculated in exactly the same way with the same tumour; and again, three days later, a third batch of nine rats, weighing 540 grammes, were treated with the same tumour in the same manner. Three days after inoculation of the last batch, that is, nine, six, and three days respectively after the primary inoculation, these three batches of rats were tested simultaneously by inoculating "early stages" of another mouse tumour in the right axilla. 12 normal rats, weighing 455 grammes, were also inoculated with early stages to serve as control. These early stages were removed at 24, 48, 72 hours after inoculation, and examined in serial sections. In the normal control rats the "early stages" continued to grow for the first three days. The tumour cells continued to divide, whilst the introduced stroma degenerated and was beginning to be replaced by a fresh stroma from the rat tissues on the third day. In the batch of rats treated three days previously with 0·2 cubic centimetre of mouse tumour, no difference could be seen in the early stages as compared with the control early stages in normal rats. There was no marked difference also in the case of the batch treated six days previous to inoculation of the early stages. In the batch of rats which had been treated nine days previous to testing with "early stages" quite a different state of affairs obtained. In the grafts examined after 24 hours' residence a large number of the introduced cells, both in the peripheral and central parts of the graft, had been killed. Further, there was a complete absence of mitoses of the tumour cells. Mitotic division of the adjacent connective tissue cells of the rat was already present, and there was a large exudate of polymorphonuclear leucocytes. At 48 hours only a few tumour cells, mostly in the central parts of the graft, had retained their morphological characters. By 72 hours all the tumour cells had been killed off and an abundant reaction tissue was being formed by the rat tissues. (Fig. 7.)

FIG. 6.



The artificial reproduction of metastases and its prevention. Chart showing the positive and negative results of a secondary inoculation in mice already bearing transplanted tumours. Primary tumour black, secondary tumours in outline, negative secondary inoculations –. The largest secondary tumours occur in the mice with the largest primary tumours (Mice 1, 2, and 3), and have grown just as quickly as the largest tumours in the control inoculation in normal animals (Mice 10–21). Examination of the site of inoculation in mice negative to the secondary inoculation shows that this result is due to active resistance like that which is produced in animals without tumours. (See Figs. 4 and 5.)

FIG. 7.



Semi-diagrammatic representation of the development of immunity to mouse tissue when inoculated into rats: only the epithelial elements of a graft of mouse tumour are depicted. (*a*) Growth of mouse cells in normal rats 24, 48, and 72 hours after implantation (control); (*b*) secondary inoculation in rats inoculated six days previously with mouse tumour; and (*c*) secondary inoculation in rats inoculated nine days previously with mouse tumour. There is an increase of the mouse epithelial cells up to 72 hours in (*a*) and (*b*), but a rapid destruction of them in (*c*). The processes of active immunity which destroy the secondary inoculations in (*c*) are also responsible for terminating the growth of a primary inoculation in the course of nine days, only three of which are depicted in (*a*), the end result being as in (*c*). This is not an immunity against mouse cancer but against mouse protein.

Such experiments demonstrate in the clearest manner that after inoculation of a given dose of mouse tumour into a rat there is produced between the sixth and ninth day an active immunity which leads to the rapid destruction of any mouse tumour cells subsequently introduced. Further, it can be inferred that the production of this active immunity contributes to terminating the transitory growth of mouse cancer cells in rats. The cessation of their growth is due largely to active immunity concomitantly induced and to other influences directly injurious to them. The immunity induced in the rat against mouse cancer is very different from the active resistance of a mouse to inoculation of tumour of its own species, for, as demonstrated in 1908, mouse tumour cells can live and divide for eight or ten days in a resistant mouse, but they are incapable of eliciting the stroma reaction necessary for their establishment as a fresh tumour.[4]

It has been possible to demonstrate the essential difference between these two types of immunity in another manner. Up to the present it has been found possible to render an animal resistant to tumours of its own species, only by previous inoculation of *living* tissues also of its own species. It is shown in another communication that if mouse tumour be disintegrated by pounding in a mortar cooled in salt and ice, and then be inoculated into mice, it does not give rise to the development of tumours, neither does it produce any immunity against mouse tumours; on the contrary hypersensitiveness may result.[13] Rats inoculated with a dose of 0·25 cubic centimetre of mouse tumour ground up in this way have then been tested by introducing "early stages" of a mouse tumour. It has been found that disintegrated mouse tumour does render rats actively immune against mouse tumours. The fundamental distinction between the behaviour of disintegrated mouse tumour in mice and rats respectively demonstrates that the immunity induced in the rats is directed not against mouse cancer *quâ* cancer, but against mouse cancer *quâ* mouse tissue, and it is exactly analogous to the antibodies obtained by inoculation of heterologous tissues, in the production of precipitins, hæmolysins, and cytotoxins. Indeed, corresponding reactions have been obtained *in vitro* by means of disintegrated tumour tissue inoculated into strange species;[9] whereas the true reactions of induced resistance to cancer are only obtained *in vivo* by inoculation of living tumour, or tissue of the same species.

In confirmation of previous results, animals already bearing rapidly growing tumours can be reinoculated successfully, and conclusions based upon experimental conditions permitting of the reproduction of the features of dissemination, are more worthy of consideration than conclusions based upon experimental conditions which exclude such reproduction. The presence of an experimental tumour is compatible with the existence of active resistance to reinoculation.

The assumption of an "atreptic" immunity to cancer has been applied to phenomena which are more naturally explained as due to an active resistance induced against cancer-cells. The assumption of a special form of immunity, "atreptic" in nature, is also incompatible with the fact that reinoculation is successful in direct relation with the rapidity of the growth of the successful primary inoculations, and with the fact that when resistance to reinoculation is present it is identical with that active form of resistance induced in normal animals by the absorption of living tissue, either tumour or normal. The assumption of an "allergetic" immunity to cancer is applied to what is really an active immunisation against the tissues of a strange species of animal. The immunity induced in rats by the inoculation of mouse cancer, or by similar heterologous inoculations in the case of other animals, is absolutely distinct from the resistance induced against cancer of the same species to which it has no direct relation.

Only one form of active resistance to the implantation of cancer from one animal to another has as yet been demonstrated to exist. This resistance follows only upon the absorption of living tumour tissue or living normal tissue of one animal, when introduced into another animal of the same species. So far as yet elucidated, it consists primarily in an inhibition of the specific chemiotactic powers which cancer cells exercise upon the connective and vascular tissues of the host. This single explanation harmonises all the observed facts, and should rid the experimental study of cancer both of confusion and error. It may be pointed out that investigations, such as those described in this paper, bear upon the nature and biological behaviour of cancer cells; but that they do not admit of any inferences as to possible methods of treating the disease.

Bibliography.—1. Zeitschrift für Aerztliche Fortbildung, No. 7, April 1906. 2. Verhandlungen der Deutschen Pathologischen Gesellschaft, 1908. 3. Royal Society's Proceedings, B, vol. lxxviii., 1906. 4. Third Scientific Report of the Imperial Cancer Research Fund, 1908. 5. Zeitschrift für Immunitätsforschung, vol. i., Heft 4, 1909. 6. Jensen: Centralblatt für Bacteriologie, vol. xxxiv., 1903. 7. Royal Society's Proceedings, vol. lxxiii., 1904. 8. Second Scientific Report of the Imperial Cancer Research Fund, part ii., 1905. 9. Royal Society's Proceedings, B., vol. lxxix., 1907. 10. Arbeiten aus dem Königlichen Institute für Experimentelle Therapie, Heft 1, 1906. 11. Zeitschrift für Immunitätsforschung, vol. ii., Heft 4, 1909. 12. Ibid., vol. iv., Heft 3, 1909. 13. Royal Society's Proceedings, B, this vol., *supra.*

THE CONTRAST IN THE REACTIONS TO THE IMPLANTATION OF CANCER AFTER THE INOCULATION OF LIVING AND MECHANICALLY DISINTEGRATED CELLS.[1]

BY M. HAALAND, M.D.,
ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

THE object of the present paper is to show the difference obtaining between the employment of the living cell, cancerous and normal, as an agent to induce active resistance to the implantation of cancer cells, and the employment for the same purpose of the protein obtained from these cells by mechanically disintegrating them. As a means of devitalising the cells with least disturbance of their chemical properties, the method adopted was that of grinding them either in the MacFadyen-Rowland apparatus at the temperature of liquid air, or in a mortar cooled by imbedding it in ice and salt. Comparison of the results obtained by both methods showed that the latter was the more efficacious. By interrupting the freezing, the material can be kept of a pasty consistence specially favourable for crushing all the cells. The completeness of the disintegration of the cells was ascertained by microscopic examination, revealing the absence of intact nuclei, and, in the case of the cancer tissue, also by inoculation of the material not yielding tumours. Every precaution has been taken to employ mice as uniform in age, size, and weight as possible, in order to make the estimations upon a soil of uniform natural resistance.

In order to analyse the results more closely in each experiment the animals were killed after the same interval of time, when the tumours threatened to ulcerate, and all the tumours obtained were weighed. The protocol of such an experiment is given, showing all the details of the experiment, including: (1) the length of time elapsed between inoculation and the date when mice were killed; (2) number of tumour mice alive up to then; (3) total number of mice alive; (4) total weight of tumour obtained; and (5) average weight of mice. To obtain an estimate of the average growth two calculations have been made: the one indicates the average weight of tumour obtained, calculated on all the animals of the series living up to the time when they were killed (negative included) ("average weight of tumours *pro* mouse"); the other gives the average weight of each tumour, when only the positive mice are taken into account ("average weight of tumours *pro* tumour"). It seemed inadvisable to use the figures obtained for more elaborate calculations, because of the only approximate value of all such figures obtained by biological experiment. In all transferences of cancer cells small factors, such as health of the animals, intercurrent diseases—factors which are incapable of exact measurement—play a very important part in determining the results.

The accompanying table illustrates the nature of results obtained after the inoculation of 0·10 cubic centimetre of material, devitalised by grinding for 1½ hours at the temperature of liquid air, when the mice are tested 15, 17, and 20 days later, with varying doses, 0·02 to 0·05 of mammary carcinoma "63." It was seen that the average weight of the tumours obtained in the treated mice when killed was 3·37, 3·2, and 4·75 grammes respectively, as against 2·03, 2·38, and 2·2 respectively in the control mice.

When the disintegration of the cells has been complete not only does no immunity follow upon the inoculation of 0·10 to 0·50 cubic centimetre of the disintegrated material, but in the majority of cases a distinct hypersensitiveness is induced in the animals so treated. Varying the interval of time between the preliminary inoculation and the testing inoculation shows that this hypersensitiveness is not a phase antecedent to the establishment of immunity. There is as little evidence of acquired resistance when the animals are tested at 30 days after the preliminary treatment as there is at 10 and 20 days.

The effect of inoculating varying doses of devitalised material has been studied. When a scale of different doses ranging from 0·50 to 0·025 cubic centimetre is inoculated, the weight of the tumours obtained from the testing inoculation shows that 0·10 cubic centimetre gave a greater average weight of tumour than larger or smaller doses. Although it would appear that the intermediate dose of 0·10 cubic centimetre offers optimum conditions for hypersensitiveness, even so large a dose as 0·50 cubic centimetre does not induce any increased resistance as compared with the normal animals of the same experiment. This is a relatively enormous dose, and its inefficacy as an immunising agent shows that the absence of immunity after the absorption of dead material is not merely a question of too small a dose.

Having established that the immunising power of tumours is abolished by mechanically injuring the cells (i.e., with the minimal chemical alteration in them), so that no growth ensues, the question next arises if the immunity obtained by normal tissues runs the same course. Fig. 1 shows that this is the case. In this experiment different batches of mice of about the same age were treated: one set with an emulsion of fresh total mouse embryo; another with the same total mouse embryo emulsion ground in a mortar at a temperature of 0° C. for 1½ hours; a third batch was treated with fresh mouse embryo skin; and a fourth with mouse embryo skin ground at a temperature of about 0° as above. 14 days later all these mice, with controls corresponding, were inoculated with 0·01 cubic centimetre of carcinoma "63." Fig. 1 shows the result of this experiment as observed on the tenth, seventeenth, twenty-fourth, and thirty-first day after the inoculation. In the control mice there are 17 tumours in 18 mice—i.e., 94 per cent. The mice treated with fresh embryo emulsion are completely protected, whereas the mice of the third column, treated with ground embryo, developed tumours in each case—i.e., 100 per cent. The somewhat slower growth of the tumours in the third column, as compared with the controls, may be attributed to an infection, which killed several mice in the same cage, as shown on the chart. The mice treated with fresh skin gave one tumour in 14 mice (i.e., 7 per cent.), whereas the corresponding batch treated with skin ground at a temperature of about 0° C. gave 10 tumours in 11 mice (i.e., 91 per cent.), and these tumours grew more rapidly than the control tumours. This experiment demonstrates that an efficient disintegration of the cells of normal tissues robs them of all immunising properties. We have later repeated this experiment with other normal tissues, spleen, liver, and blood, with the same result.

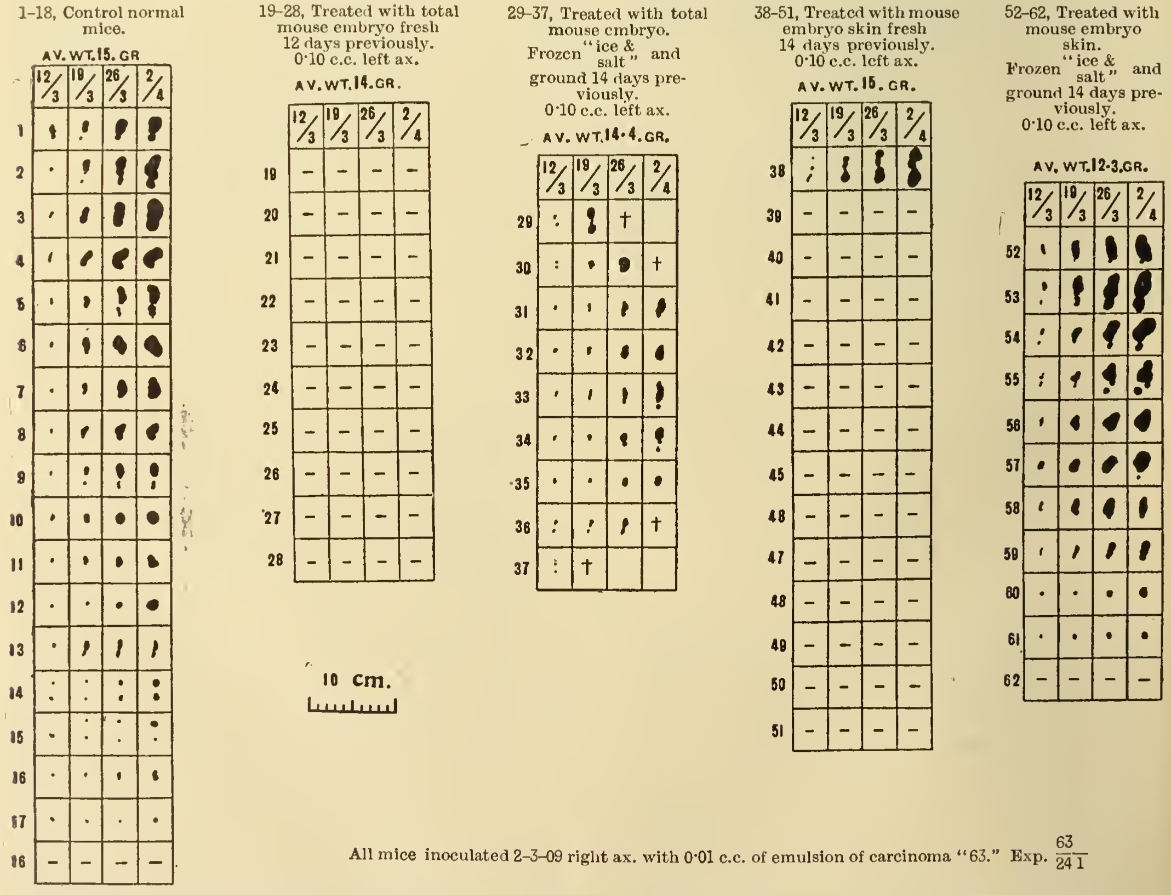
---

[1] A paper read before the Royal Society on Feb. 3rd, 1910.

Another method for obtaining the proteids of the cells has been tried: that of obtaining the press-fluid from tumours

Experiment.	Preliminary inoculation. Material.	Preliminary inoculation. How treated.	Preliminary inoculation. Dose.	Preliminary inoculation. Date.	Preliminary inoculation. Remarks.	Interval between treatment and testing inoculation.	Testing inoculation. Tumour.	Testing inoculation. Dose.	Testing inoculation. Date.	Result. Number of tumours.	Result. Number of mice.	Result. Percentage.	Analysis of result when mice killed. Days after inoculation when killed.	Analysis of result when mice killed. Number of tumours.	Analysis of result when mice killed. Number of mice.	Analysis of result when mice killed. Total weight of tumours.	Average weight of tumours. *Pro* mouse.	Average weight of tumours. *Pro* tumour.	Average weight of mice.
1	63 carc.	Ground at the temp. of liquid air.	0·10	6/1/09	No growth.	15 days.	63 carc. (Exp. 23B).	0·02 gr.	21/1/09	11	11	100	32	8	9	30·30	3·37	3·8	15·99
					Controls ...	...	—	—	—	8	10	80	—	8	10	20·30	2·03	2·54	18·24
2	As above	—	—	—	No growth.	17 days.	63 carc. (Exp. 24A).	0·025 c.c.	23/1/09	10	10	100	34	9	9	28·85	3·21	3·21	16·4
					Controls ...	...	—	—	—	9	10	90	—	8	9	21·40	2·38	2·68	17·43
3	As above	—	—	—	No growth.	20 days.	63 carc. (Exp. 23D).	0·05 c.c.	26/1/09	8	8	100	35	8	8	38·0	4·75	4·75	17·97
					Controls ...	...	—	—	—	8	9	89	—	7	8	17·30	2·2	2·47	18·5

FIG. 1.—ABOLITION OF PROTECTIVE POWER OF NORMAL TISSUES BY ACTION OF PHYSICAL AGENCIES.



All mice inoculated 2-3-09 right ax. with 0·01 c.c. of emulsion of carcinoma "63." Exp. $\frac{63}{24\,\text{I}}$

Experiment 63/24 I, showing the immunising effect of preliminary treatment of mice with normal tissues and the abolition of this effect after disintegration of the tissues by freezing and grinding. The numbers represent individual mice treated as stated at the top of each column. The silhouettes represent to scale the sizes of the tumours obtained in each animal at the dates stated, 10, 17, 24, and 31 days after inoculation. Negative results are represented by –.

and normal tissues by Buchner's press after disintegration of the cells by grinding in a mortar with sand. The effect of a preliminary inoculation of such press-fluid on a subsequent inoculation of cancer was studied. Injection of 0·50 cubic centimetre of tumour press-fluid 11 days previous to testing inoculation, far from having any immunising effect, on the contrary hypersensitises the animals. These experiments with ground material and press-fluid, both of cancerous and normal tissues, show that the power of inducing resistance is not bound up with the proteid of the cell as a chemical entity, but in some way or other depends upon properties of the living cells.

The investigations described above refer especially to mechanically disintegrated cells, but the results also apply to disintegration by autolysis, by heat, and to the influence of radium (Fig. 2). In this latter case the microscopical appearance of the cells and their anatomical structure remain apparently unaltered. This shows that the loss of immunising power is not bound to any special form of disintegration, but is common to all means by which the life of the cell is destroyed.

The conclusions are:—

Complete disintegration of the tumour cells robs them entirely of their immunising properties.

FIG. 2 A.

Action of radium on growth and on immunising power of carcinoma 63. Exp. 63/24 D. 12.2.09. Dose 0·05 c.c. Rt. Ax. Reinoc. 13 days later with 0·025 c.c. Lt. Ax. Exp. 63/25 A. 25.2.09.

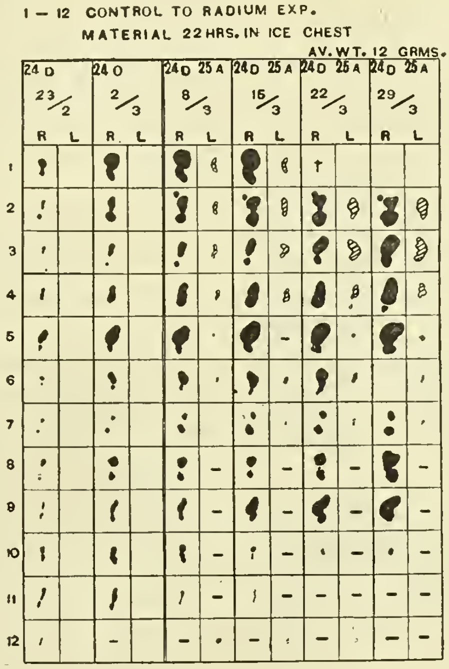


FIG. 2 B.

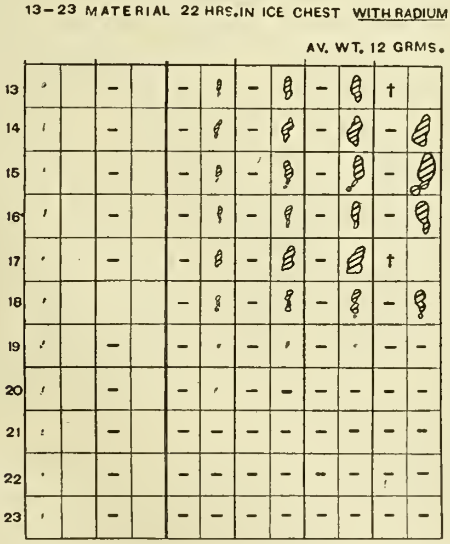
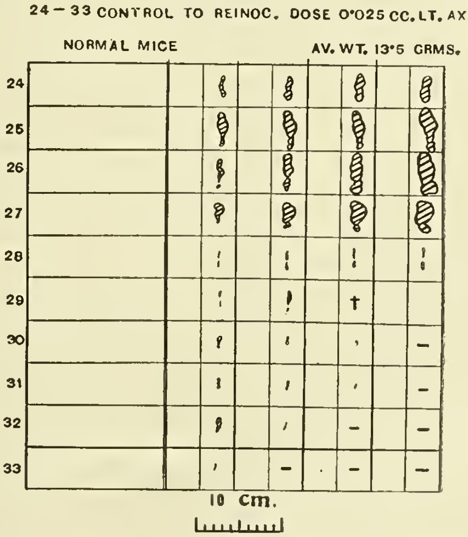


FIG. 2 C.



FIGS. 2A, 2B, 2C.—Experiment to show that tumour cells killed by exposure to radium have also lost their immunising properties. In 2A, under columns R, the full black silhouettes show the growth of tumour material inoculated in the right axilla of 12 normal mice after 22 hours in the ice-chest. In 2B, under columns R, the complete failure of growth of another portion of the same tumour after exposure to radium for 22 hours in the ice-chest when inoculated into 11 normal mice of the same weight. In 2C control to reinoculation of the mice in 2A and 2B. Note that the second inoculation (under columns L, diagonally striped outlines) is more successful in 2B, where no growth was obtained from the radium material than in 2A, in which the cells of the preliminary inoculation were undamaged.

There is no difference between tumour cells and normal cells in this respect.

The absence of immunising power does not seem to be a question of dose of introduced material, because relatively enormous doses of dead material (e.g., 1-26th of the weight of the animal) do not induce any resistance, whereas minimal doses of living cells (e.g., 1-1300th of the weight of the animal) have this effect.

The immunising property is not bound up with the protein of the cell, but depends on a different principle. Living cells are necessary to induce resistance to transplantation of cancer. It seems necessary that these cells must not only remain alive, but also even grow for a certain time; without the fulfilment of these conditions the reaction inducing active resistance is not set up.

The reaction which introduction of disintegrated cells calls forth is not only quantitatively different from that induced by living tissues, but also qualitatively different. Far from inducing any increased resistance, inoculation of disintegrated cells only seems to manure the soil for a subsequent growth of tumours.

The failure to elicit the reactions of immunity to the transplantation of cancer by devitalised tissues reveals an important difference from the immunity reactions obtained against bacteria and their products and foreign proteids in general, in which cases the immunising properties are independent of the vitality of the organisms or cells.

A BRISTOL CENTENARIAN.—Mrs. Ann Probert Killby died at her residence, 39, Whiteladies-road, Clifton, on March 10th, in her 101st year.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CHORIO-EPITHELIOMA OF THE TESTIS.

By O. C. Gruner, M.D. Lond.,
CLINICAL PATHOLOGIST, LEEDS GENERAL INFIRMARY.

The following case possesses some interest because the type of growth met with is very unusual, and though a few cases have been put on record during recent years it is probably not superfluous to record this case also.

The patient, who was 25 years of age, was admitted to the hospital in June, 1907, under the care of Mr. R. Lawford Knaggs, to whom I am indebted for the following clinical notes and permission to record the case. On admission the left testicle was found to be enlarged. Pain had been noticed in it for five months, and though the swelling was soft at first it had become hard for some weeks before admission, and he had noticed little knobs on it. His medical attendant had treated the swelling with Scott's dressing, but he came to the hospital because that treatment had had no effect. Examination of the testicle showed a hard swelling, partly involving the latter but mainly occupying the epididymis. The cord was not thickened and there were no adhesions between the swelling and the skin. Syphilis and tubercle were excluded, so that castration was performed. Recovery was uneventful.

The naked-eye characters of the tumour are as follows. The growth is almost exactly an inch in diameter, and only a little narrower from side to side than from before back. It is excessively vascular and occupies the middle of the testis, which apparently forms a thin layer all round the growth. The cut section is deep red, blotchy in appearance, and tends to fungate. The specimen is now in the Pathological Museum of the University of Leeds, Catalogue No. 5963.

The tumour contains relatively a large amount of blood, which occurs firstly in the form of minute hæmorrhages, partly within definite vascular spaces (which are lined by a very delicate endothelium), partly in the form of diffuse hæmorrhages (which pull asunder the constituent cells of the growth), and secondly in the form of large masses of blood. The latter sometimes show a limiting membrane of very delicate character, like a fragmentary endothelium.

The growth itself shows considerable areas of practically structureless material, apparently arising from past hæmorrhages, in which the red cells have become homogeneous; there are some indications of red cells in it, and leucocytes occur scattered through it. At the edges of the necrotic areas there are also fragmented tumour cells forming a broad zone, while external to this again is a thin zone of polymorphonuclear leucocytes.

The cells of the living parts of the tumour present very striking characters. In the first place, their shape is remarkably polymorphous—that is, some have a spindle shape, others are tailed at one end, others are polygonal, others are quite round, and others are like the cells of spheroidal-celled carcinoma. There are also marked variations in size, the first-mentioned shapes being small and the last-mentioned very large.

The cytoplasm of the cells stains deeply with hæmatoxylin, and frequently has a granular appearance. The deep staining of the cytoplasm is most striking and causes a close resemblance to the cells typical of deciduoma malignum, the only difference being that in the present tumour the cells are perhaps larger and more swollen in aspect. The nuclei show almost as many variations in size and detailed characters as do the cell bodies. Some stain a deep blue with hæmatoxylin and appear so dense that no nuclear structure can be made out. Others are large and rounded, show two large nucleoli and numerous granular markings. Others again are very large and oval, transparent, and possess a single large nucleolus. In these particular nuclei only a few nodal points occur. Other nuclei show only chromatic spots without any obvious network. Others again have no nucleoli, but in addition the chromatic spots present a faint network. Some nuclei are very large (170μ) and contain irregular stained masses; the contour is then lobed and very sharply demarcated, while scattered granules also occur. Other varieties have a fine granulation at the very periphery, the remainder of the nucleus being quite transparent. Special attention must be drawn to the abundance of nuclei of this type. Others show mitotic figures of different stages, and others are multinucleate. This does not exhaust the variations presented by the cell nuclei, but all of them can be grouped into trachychromatic and amblychromatic forms. There are also some gland-like spaces lined by columnar cells, amongst which are a few goblet cells, so that perhaps they are not testicular in origin.

Comment.—The character of the cells strongly recalls that of deciduoma malignum. The close examination of the cells reveals a similarity on the one hand to sarcoma cells, and on the other to the cells of spheroidal-celled carcinoma, so that the tumour might be called a sarco-carcinoma.

Leeds.

A NOTE ON THE CREPITATIONS HEARD IN THE THIRD LEFT INTERCOSTAL SPACE IN SOME CASES OF MITRAL STENOSIS.

By C. Willett Cunnington, M.B., B.C. Cantab.

If a large number of patients suffering from mitral stenosis be examined, a certain small proportion of them will reveal the presence of crepitations in the third intercostal space on the left side. This fact does not appear to be noted in the text-books, but it seems worthy of notice, however, because there is some risk of a hasty diagnosis of pulmonary tuberculosis being given unless the observer bears in mind the possibility of this phenomenon. It is, indeed, not uncommon to find such a mistake made. The number of cases in which the sign is present form only a small percentage of all those with mitral stenosis examined.

The patch of crepitations is quite limited, being seldom larger in area than what would be covered by a halfpenny piece placed over the third left intercostal space close to the sternal margin. Rarely does it extend down to the fourth space or upwards into the second. That the crepitations are formed in lung tissue is proved by their disappearance while the breath is held. They are heard only during inspiration. They are found more frequently in women than in men, as would be expected from the greater frequency of mitral stenosis in the former sex. I am disposed to associate their occurrence with the thin type of mitral stenosis patient rather than with the stout, but one has to remember that most patients with this disease are thin.

These crepitations are by no means constant in any particular case, and may be present one day and absent another. It would seem that they are more likely to be present when the heart is particularly distended; thus they may be found at a patient's first visit, and after a week's treatment with digitalis they may have disappeared, reappearing when at a later date the heart is again labouring under the strain of overwork. On the other hand, I have noted their presence in some cases where compensation is, apparently, perfect. I have myself never heard these crepitations in cases where the lesion is other than mitral stenosis, or, indeed, where that lesion is complicated by a second. Thus, one would not expect to find them in a patient with "double mitral."

It is not possible to be certain about the cause of this phenomenon. That it is not due to tuberculosis is fairly certain. Firstly, other signs and symptoms of tuberculosis are absent, nor is any evidence of it to be found on X ray examination. Secondly, the crepitations are evanescent, do not spread as time goes on, and are strictly limited in position; moreover, the concurrence of pulmonary tuberculosis and mitral stenosis is a clinical rarity. One is compelled to conclude that they are due solely to the condition of the heart. In mitral stenosis the left auricle is distended and there is from time to time some pulmonary congestion of a passive nature due to the obstruction at the mitral valve. Now these crepitations are heard over the site of the left auricle, and it is probable that they arise in a small edge of lung tissue pressed on by the dilated auricle or auricular appendix. If this explanation be correct, one would expect that as treatment relieved the auricular distension the crepitations would disappear and, as I have said, this is found to be the case.

Finchley, N.

A CASE OF HÆMORRHAGE DUE TO EROSION BY SOFT CHANCRES.

By JAMES RAE, M.A., M.B., CH.B. ABERD.,
HOUSE SURGEON, CHELTENHAM GENERAL HOSPITAL.

IN the evening of Oct. 28th, 1909, a male, aged 32 years, was admitted to the Cheltenham General Hospital on account of severe hæmorrhage from the pubic region. He stated that the bleeding began on the previous afternoon and had been constant, but he was not collapsed. There was some oozing from two cavities about the centre of the anterior aspect of the scrotum, but the chief origin was a vessel on the left of the root of the penis. The hæmorrhage was controlled by pressure and the use of hydrogen peroxide solution. A temporary dressing was applied and the patient was conveyed to bed.

On re-examination shortly afterwards it was found that there had been a little further bleeding. The skin at the root of the penis was seen to be completely divided except for a portion of tissue on the under surface about a quarter of an inch broad; half an inch to the left of this was a bridge of skin of nearly equal breadth, but this was divided to gain access to the depth of the wound. The wound was almost an inch wide, and was a serpiginous ulcer. On the under surface of the penis was a typical soft chancre of about the size of a sixpence; this was half an inch from the remaining portion of tissue. In the scrotum were two cavities: the larger was of very irregular shape, one inch and a quarter in length at its longest diameter, and over half an inch deep; the other was of about half these dimensions. The corpus spongiosum was much distended, the penis at its largest part being $7\frac{1}{8}$ inches in circumference; the glans was of normal size.

The patient had syphilis when he was 21 years old. About three weeks before his admission to the hospital he had exposed himself to the risk of venereal infection, and about a week later (it was impossible to fix the dates more precisely) a pimple appeared on the side of the glans. He squeezed this and a yellowish discharge came from it which continued for several days. He said that his penis swelled on Oct. 21st, the day after he had struck it with the handle of a spade when gardening. As already stated, the hæmorrhage began the day before admission. He was not suffering from syphilis at this time.

The parts were dressed with strips of gauze soaked in lotio nigra. On Nov. 2nd the treatment was changed, and a powder consisting of equal parts of aristol and boric acid was dusted on the sores. Pressure was applied to reduce the swelling of the corpus spongiosum, which was considerably, but not entirely, reduced by Dec. 12th, on which day the patient was discharged, with the ulcers at the root of the penis and on its under surface completely healed, while the cavities on the scrotum had almost disappeared.

The hæmorrhage was apparently due to erosion of an artery by the ulcer, and the swelling of the penis to contraction producing compression of the lymph channels. There was no trace of a blow to be seen on the penis. At no time had the patient any difficulty in micturition. Hæmorrhage of such a character following on extension of a soft chancre is apparently not common. The possibility of its occurrence is not mentioned in any of the text-books or the recent periodical literature which I have consulted.

The patient was under the care of Mr. H. Bramwell who has kindly allowed me to make this note.

Cheltenham.

THE WINSLEY SANATORIUM.—The annual meeting of the subscribers of the Winsley Sanatorium was held on Feb. 26th. The report showed that the income amounted to £5561, the expenditure being £4764. The medical report states that during the year 248 patients were admitted. 236 were discharged during 1909; of these 111, or 47 per cent., left fit for work; 82 (34·7 per cent.) were improved; 37 (15·7 per cent.) left not improved; and 6 (2·5 per cent.) died in the sanatorium.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANÆSTHETICS.

The Choice of the Anæsthetic.

A MEETING of this society was held on March 4th, Mr. RICHARD GILL, the President, being in the chair.

Dr. DUDLEY W. BUXTON opened a discussion upon the Choice of the Anæsthetic. He pointed out that the choice must be made by considering (*a*) the physical and mental state of the patient; (*b*) the exigencies of the operation, its duration, and the region involved; and (*c*) the skill and experience of the anæsthetist. The actual choice of the anæsthetic also was overridden by the method adopted in using it. Chloroform used by the older methods was properly regarded as a dangerous anæsthetic, but when applied by a strictly dosimetric plan it became comparatively safe. The safety of the patient must be the predominant aim, but his safety depended, not only upon his passing through the anæsthesia unscathed, but upon the successful performance of the operation and the absence of serious after effects. These might all depend upon the anæsthetic and the method of its employment. Ether, for example, might be safest during a laparotomy, but if subsequent tight bandaging was necessary and chest complications arose fatal effects might arise. The old rules which pronounced for certain anæsthetics for certain ages must be discarded and each individual case decided by the physique and standard of health, not by the actual age. Even young children might take ether well, old persons frequently did so, and the belief that infants and women in labour enjoyed immunity from risk in chloroform was exploded. The individual vitality and the duration of the operation would indicate safety or danger. Prolonged etherisation caused lowering of body temperature; much had to be inhaled to maintain anæsthesia and its elimination depressed vitality by lowering temperature and so damaged the epithelium of the emunctory viscera and enhanced "shock." Predisposition to after effects, respiratory, circulatory, renal or hepatic, had to be recognised and an anæsthetic selected which did not initiate the dangers to which the patient was most prone. Often trivial operations were attended with special dangers *quâ* the anæsthetic—e.g., circumcision which did not require chloroform since young children took ether well by the open method. Dr. Buxton discussed the best anæsthetic for different types of persons and diseased states, such as alcoholics, in renal inadequacy, in the presence of glycosuria, anæmia, neurasthenia, and other states. He deprecated the use of nitrous oxide or ether in obstructive conditions of the upper air passages, such as in goitres, also in all lesions of the brain and spinal cord. Morphine, except in certain cases, as when employed with scopolamine for neurasthenia and in states of arterial disease, was dangerous when given before chloroform. Methods which induced asphyxial complications made anæsthetics dangerous, and especially chloroform. Both with ether and with chloroform oxygen should be employed and thus was asphyxia avoided. Chloroform with oxygen and given in exact percentages of strength was safe; given otherwise it was always liable to cause danger. The delimitation of choice between general and local anæsthetics was difficult, and could only be decided in any case upon the merits of that case. He discussed various methods and sequences, and recommended nitrous oxide or chloride of ethyl followed by ether as a routine anæsthetic, while in prolonged operations he preferred to change from ether to chloroform when complete muscular relaxation had occurred. The causes of muscular rigidity were adverted to and their treatment considered.

The discussion was carried on by the PRESIDENT, Dr. BARTON, Dr. F. M. DICKINSON BERRY, Dr. J. F. W. SILK, and Dr. LLEWELYN POWELL, and Dr. DUDLEY BUXTON replied.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 4th, Dr. J. DUNDAS GRANT, the President, being in the chair.

Mr. HERBERT TILLEY described the Removal of a Rapidly

Growing Soft Fibroma from the Posterior Wall of the Left Maxillary Antrum by Rouge's Operation. The patient, aged 48 years, complained of left nasal obstruction, which had been increasing for 12 months. During the past six months there had been frequent nose-bleeding on that side, with discharges of glairy mucus. Examination showed the posterior half of the left nasal cavity to be completely filled by a dark red, very soft, and easily bleeding mass of growth. Operation: Laryngotomy, plugging lower pharynx; incision under lip from right canine fossa to left malar process; division of anterior half of nasal septum from its lower attachment; turning up of soft parts; removal of left canine fossa and ascending process of superior maxillary; removal of growth and final replacement of soft parts, secured by a few interrupted sutures.

Mr. ALEX. R. TWEEDIE showed the Face and Mouth of a Female Infant, aged 3 months, whom the parents found they were unable to feed properly on account of a deformity in connexion with the mouth. An operation was suggested, but before the child could be admitted for such treatment she died in a marasmic condition. There was a complete congenital cleft of the whole soft palate, the left half of which lay in the position usually seen in such circumstances, but the right half was continuous with a membranous structure, which, commencing opposite the posterior border of the hard palate, was attached continuously to the inner side of the right cheek and extended downwards and forwards to the floor of the mouth, where it terminated in front of the right side of the tip of the tongue.

Mr. SOMERVILLE HASTINGS described a case of "Bleeding Polypus" of the Inferior Turbinate. On Nov. 8th, 1909, a man, aged 42 years, went to the Middlesex Hospital complaining of epistaxis of a month's duration. Every time he blew his nose he was troubled by bleeding from the right nostril, which lasted about a quarter of an hour. When the nose was examined a pedunculated growth of about the size of a pea was seen growing from the lower border of the right inferior turbinate not far from its anterior extremity. The tumour was purple in colour and smooth on the surface, and blood-clot was adhering to it. On section it was seen to be a soft angeio-fibroma, in the delicate fibrous matrix of which were imbedded the characteristic oval endothelioid cells. It was bordered by squamous epithelium, and at one point where ulceration had taken place there was an infiltration with polymorphonuclear leucocytes; no mucous glands were present in the tumour, though abundant in the adjoining mucous membrane of the turbinate. Scattered through the growth were many spaces lined with endothelium, but, unlike the mucous sinuses, devoid of an investment of unstriped muscular fibre; some contained blood cells, others were empty and probably lymphatics. Fibro-angeiomatous meshwork was well seen. The histological structure falls closely into line with the loose-textured fibroma type of the small angeiomatous tumours ("bleeding polypus of the septum") fully described by Pegler in THE LANCET of Nov. 18th and 25th, 1905, wherein that author cites Kreig, and Siefert and Kahn as authorities for their occasional occurrence in connexion with the inferior turbinate. —Dr. L. H. PEGLER mentioned in the discussion that the characters above conclusively distinguished the tumour from a simple turbinal hypertrophy, and regarded the present example as probably the first of the kind recorded in this country.

Dr. E. A. PETERS exhibited the Larynx, Four Rings of Trachea, and part of Thyroid Gland and Gullet removed during an act of Suicide. A man, aged 29 years, subject to hallucinations and depression after bouts of alcoholism, cut his throat when sober at 5 A.M. He made a transverse cut down to the spine and two or three vertical cuts, one of which opened the larynx accurately in the middle line. The suicide seized the obstructing larynx, cut away the adherent gullet and trachea at the fifth ring, and threw the fragment exhibited into the garden. He walked 200 yards and collapsed outside a friend's house, where he was discovered. The two medical men who saw him found it impossible to bring the trachea to the skin. Death from lung suffocation followed at 10 A.M.

Dr. STCLAIR THOMSON showed: 1. A case of Complete Inspiratory Stenosis of the Larynx in a man invalided from the army in India. There had been ulceration below the right vocal cord and complete aphonia. Later he became cyanosed and tracheotomy was performed. The ventricular bands, red and swollen, occluded the larynx, and the larynx was generally bathed in pus. The case was probably syphilitic. 2. A case of Unilateral Suppuration of all Four Accessory Cavities, which were operated on at one sitting, with rapid recovery, in a man aged 21 years.

Dr. D. R. PATERSON showed a cast of an Upper Jaw from a case of Congenital Occlusion of the Right Posterior Naris.

Mr. NORMAN PATTERSON showed a case of a woman, aged 23 years, in whom there was complete occlusion of the right anterior naris by a web extending from the ala to the septum.

Dr. G. WILLIAM HILL showed a case of Carcinoma of the Gullet in a man, aged 62 years, with demonstration of radium apparatus and its insertion in the gullet by means of a special œsophageal tube designed by the exhibitor.

MEDICAL SOCIETY OF LONDON.

Colitis.

A MEETING of this society was held on March 14th, Dr. SAMUEL WEST being in the chair.

Dr. H. P. HAWKINS, in opening a discussion on Colitis, said that the disease presented a wide range of severity, varying from a few days of mild diarrhœa to a violent hæmorrhagic diarrhœa approaching in severity to tropical dysentery and ending fatally in a few weeks. In considering the effect of treatment they must realise how often a short severe attack with profuse hæmorrhage might subside under almost any treatment, and yet if followed up would be found to recur and prove fatal. Caution was necessary, therefore, in recording cures. He had seen good results from the Shiga-Kruse serum of the Lister Institute, and he would certainly use it in all acute cases with hæmorrhage. He had heard of cases in which improvement or cure had been attributed to a vaccine of the patient's bacillus coli or coliform bacilli, but in a considerable number of his own cases he had never seen any result. Much could be done towards cleansing the bowel, and appendicostomy-flushing had great advantages over rectal irrigation. In the various forms of ulcerative colitis he used normal saline, boric acid, hydrogen peroxide, silver nitrate, and adrenalin. In some cases, however, he had no doubt that a right colostomy afforded the only chance of saving life. In recommending this they must be guided by an estimation of the gravity of the condition, and it was very easy to be too late. He thought it must be recommended in spite of the probability that the use of the colon would never be regained. He had had only one permanent cure after colostomy and subsequent closure of the opening. He had seen a few cases in which removal of the appendix might perhaps have ended the colon disease. He had used sour milk in all ways—by mouth, as an irrigating solution, through an appendicostomy and per rectum, and he had never seen any result. However, it was a wholesome diet. As regards drugs he used nothing but calomel and opium, combining them in various proportions according to the severity of the case and the result obtained. It was remarkable how well the calomel was borne for long periods of time.

Mr. H. STANSFIELD COLLIER described a case of colitis in which he considered that the essential cause was an anaerobic organism; he mentioned details of improvement noted in the patient when air was injected every four hours into the bowel.

Dr. W. HALE WHITE gave an account of the value of the use of castor oil in mild cases of mucous colitis.

Dr. J. C. MATTHEWS recounted 35 cases of colitis treated by vaccine.

Dr. S. P. PHILLIPS did not think it essential to keep colitis patients entirely on a liquid diet.

Dr. A. MANTLE (Harrogate) described the Plombières method of irrigation.

Dr. F. DE HAVILLAND HALL was not sanguine in regard to appendicostomy.

Dr. C. W. BUCKLEY said that the lavage could be carried out in a patient's home equally well as at a watering-place.

After Dr. G. THOMSON had spoken, Dr. HAWKINS replied.

HARVEIAN SOCIETY OF LONDON.

The Treatment of Labour in Contracted Pelves.

A MEETING of this society was held on March 3rd, Dr. M. HANDFIELD-JONES, the President, being in the chair.

Dr. G. F. BLACKER opened a discussion on "The Treatment of Labour in Contracted Pelves, with Special Reference to the Justifiability of Pubiotomy," which we print in full on p. 778.

Dr. F. H. CHAMPNEYS emphasised the higher value of the mother's life compared with that of the fœtus. He considered Cæsarean section a fine operation; its risks were slight to the mother, very slight to the child, and its after-effects *nil.* In all these respects he considered pubiotomy compared unfavourably with it. If for any reason Cæsarean section was inadmissible he would prefer craniotomy to pubiotomy, as it had no risks for the mother, the so-called maternal mortality of craniotomy being due not to the operation but to the conditions requiring it. He advised the induction of premature labour in slight degrees of contraction diagnosed during pregnancy. As a teacher he thought that to recommend pubiotomy to the body of the profession would be to court disaster. He would like to know how many pubiotomies had been performed in private on intelligent patients who could appreciate what was going to be done to them. All change was not progress and England was not a country which depended for initiative on foreign work. He pointed out that abdominal surgery had been rendered possible through Lister and Spencer Wells, and that amongst obstetricians there were no greater names than Smellie, Denman, Rigby, and later Matthews Duncan.

Dr. G. E. HERMAN looked for improvement in the mortality and morbidity of childbirth mainly to the improvement of Cæsarean section. The mortality attending this operation in 1904 was 8 per cent.; but he saw no reason why it should not be reduced far below this. Cæsarean section stood alone among abdominal operations in this respect, that all the structures dealt with were healthy and normal. The operator who had to remove a tumour might find difficulties from its vascular supply, adhesions, &c. But in Cæsarean section nothing of this kind existed, and there ought to be no mortality where the routine procuring of asepsis was regarded as a religious ritual. He did not agree with Dr. Blacker in thinking that symphysiotomy was about equal to pubiotomy in difficulty. Subcutaneous symphysiotomy was one of the simplest and easiest operations. Pubiotomy seemed to him a difficult and tedious operation. He had never done it or seen it done, and at present did not intend to do it. The real objection to both operations was the injuries to the soft parts involved in the separation of the bones after division. He thought Dr. Blacker gave away the case for pubiotomy when he suggested that it ought only to be performed in hospitals. What was the use of a treatment that could not be employed in ordinary private practice? Lastly, he should have liked to hear more stress laid upon methods of ascertaining the size of the child, as he thought that was as important as pelvimetry.

Dr. W. S. A. GRIFFITH pointed out the difficulty of obtaining precise measurements of pelves, and gave an account of some experiments he had made. The conclusion he arrived at was that no exact measurements could be taken unless the whole hand was introduced into the pelvis or the pelvis was contracted to 3 inches or less. He considered that practice based on precise pelvic measurements, even if they could be obtained, was a mistake; many other factors were equally important. He recommended Cæsarean section where the head would not enter the brim of the pelvis.

Dr. HERBERT R. SPENCER supported the induction of premature labour, and declared that statistics of fœtal mortality were unreliable unless similar conditions obtained or cognisance were taken of individual features, such as the method or time of induction. Whether the child grew up depended largely on the care it received from its mother. He had induced labour six times in one woman, and she had as a result five healthy living children, and he mentioned many other cases of multiple premature inductions in his practice. He regarded individual cases like these as of more importance than statistics. He thought Dr. Blacker placed the elective Cæsarean section a little too high (3⅖ inches), thereby excluding some cases suitable for induction of premature labour. He had induced labour at the thirty-fifth week in a woman with a conjugate of 3 inches and the child, who weighed at birth 5 pounds, was now a healthy girl of 18. He thought there were risks from scars and adhesions following Cæsarean section from which the mother was quite free after the induction of premature labour. The percentage of morbidity following pubiotomy was too high for him, and unlike other operations it could not safely be repeated on the same patient. He had never seen any convincing evidence that pubiotomy was superior to symphysiotomy, and most of its advocates agreed that it was only suitable for hospital practice and in non-infected cases. The crucial question raised by Dr. Blacker was what was to be done in the case of patients in labour when the pelvis was too small to allow the head to pass. His answer would depend upon circumstances. He would not exclude craniotomy; he would prefer Cæsarean section if the patient had been skilfully attended, and would remove the uterus or do a retro-peritoneal Cæsarean section rather than do pubiotomy where there was infection or laceration of tissues.

Dr. W. J. GOW did not think it possible to measure the pelvis accurately even with the hand inside it, and regarded such measurements, even if obtained, as of secondary importance. Induction at the thirty-sixth week or Cæsarean section if labour had started, were better than pubiotomy for the size of pelvis indicated. He could only conceive of one condition in which pubiotomy might be indicated—namely, in a case that had been many hours or days in labour, with the head jammed in the pelvis, rendering delivery by Cæsarean section a matter of great difficulty. He would never do pubiotomy as an operation of choice, and would even prefer to do craniotomy.

Dr. AMAND ROUTH thought there was no doubt that if the woman was seen before full time with a conjugate of over 3 inches induction was the correct treatment. If a mistake of too late a date should be made, and dystocia were still present, the obstetrician could fall back upon Cæsarean section, pelviotomy, or embryotomy. If the conjugate was under 3 inches he would prefer to do Cæsarean section at full term. Cases seen for the first time at full term should be divided definitely into two classes: those where previous attempts had, and had not, been made to deliver *per vias naturales.* In cases where no attempt to deliver had been made with a conjugate up to 3¼ inches, and a living child, Cæsarean section should be done; but if the child were dead, craniotomy, provided the conjugate was over 2½ inches. The difficult cases to decide in this class were those where the child was alive and the conjugate between 3¼ inches and 3½ inches; these were, in his opinion, the only cases where pelviotomy was justifiable, and he preferred the subcutaneous symphysiotomy to pubiotomy, as the former operation could be more safely repeated, if necessary, at a future labour; personally even in these cases he would prefer to do Cæsarean section. In the second class where attempts had been previously made to deliver with resulting bruising and infection neither conservative Cæsarean section nor pelviotomy was justifiable, and he considered that embryotomy should be performed if the conjugate were over 2½ inches, and Cæsarean section followed by hysterectomy if under 2½ inches. He instanced his last case of Cæsarean section in this class where subsequently sloughs formed both on the child's head and over the mother's abdominal wound. This case had decided him to avoid Cæsarean section in future in all possibly septic cases.

The PRESIDENT congratulated Dr. Blacker on his paper and considered, having regard to the results of continental operators, that English obstetricians had exercised a wise discretion in their attitude to the operation of pubiotomy, and Dr. BLACKER replied to the discussion.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Electric-bath Treatment and Excretion of Creatinine.—Typhoid Carrier Infection.

THE quarterly meeting of this association was held on Feb. 24th, at the newly erected Leicestershire and Rutland Counties Asylum, Narborough, near Leicester, Professor W. BEVAN-LEWIS, the President, being in the chair.

Mr. MACKENZIE-WALLIS (University College, Cardiff) and

Dr. EDWIN GOODALL (Cardiff) communicated a paper on Electric-bath Treatment in 120 cases of Mental Disorder. The treatment extended over a period of nine years, and as a result of their experience they expressed their preference for the use of the alternating sinusoidal current in the bath with rhythmic variation, as against the usual faradic and galvanic methods. They went into considerable detail, describing the course of the baths, the kinds of mental disorder treated, the weights of the patients at different stages, the diet, and the results. As a rule those who were mentally improved gained in body weight at the same time; the cases which did not improve remained stationary or lost in weight. For purposes of comparison, particulars of the results in a series of cases, controls, treated by ordinary warm baths without current, were given. The major part of the paper dealt with an inquiry into the influence of electric and warm baths upon the metabolism of the body, as shown by excretion of creatinine in a series of patients who were kept during the investigation on a fixed diet. The conclusions were that previously to the treatment the excretion of creatinine in all cases showed a minimum value for the total daily volume. The electric baths were given daily for single and recurrent periods of seven days, and during this time the creatinine figure was markedly increased. Long-continued treatment with the baths tended to cause a marked fall even below the former value. Warm baths, on the other hand, had little or no influence on the excretion of creatinine. This evidence was believed to be in accordance with the clinical facts as regards the improvements in the patients' mental and physical condition. The excretion of creatinine in the urine showed the normal variations with age, weight, and sex. The variations in the volume of the urine seemed to be very characteristic of the insane, as also was the great proneness of the urine to bacterial contamination.—The PRESIDENT thanked Mr. Mackenzie-Wallis and Dr. Goodall for their able paper. He asked whether the amido acids were regarded as the necessary precursors of urea formation during protein metabolism in the tissues, especially in the muscles, and if the creatinine in the urine was simply the surplus of those precursors, which were eventually converted into ammonia and carbon dioxide, and so passed the liver and the kidney as urea. He was anxious to know whether there was a more simple mode of splitting off, as had been suggested by Drexell's experiments.—Dr. R. PERCY SMITH said that prolonged tepid baths were used in St. Bartholomew's Hospital many years ago for excited patients, and as a result they nearly always got calmer. Those patients also gained weight and slept better, and they eventually recovered. He was glad to hear that short baths were preferable to long ones. In those days there were no sinusoidal current baths. He would like to have heard of a larger series of cases not so treated, for purposes of comparison—i.e., treated by simple warm baths. Could creatinine be the elusive toxin at the basis of insanity for which so many people seemed to be searching?—Mr. SCOTT WILLIAMSON said that some time ago he made some observations in cases of phthisis, who were all undergoing sanatorium treatment, as a result of which some were increasing in body-weight, but the creatinine did not vary at all with that increase in body-weight.—Dr. BEDFORD PIERCE said the treatment had been tried at the "Retreat," York, on a considerable number of patients, and the general result seemed to be satisfactory. But the creatinine excretion was not scientifically tested, so that only the general appearance of the patient gave that impression.—Dr. W. H. B. STODDART said that at Bethlem Hospital they were rather behindhand in that treatment. But he asked whether it was a good thing to get rid of creatinine. Was that substance a poison to the body? Also did the sinusoidal current increase the creatinine excretion of normal people? His experience of warm baths was practically the same as that of Dr. Percy Smith.

Dr. C. HUBERT BOND read a communication on the subject from Dr. ROBERT JONES (Claybury), who stated that he had tried the electric bath mostly for adolescents chiefly exhibiting melancholia, and the main difficulty lay in getting them fed. It was not a very curable form. After consultation with Dr. H. Lewis Jones he tried it upon 18 male and 5 female patients. The latter all improved greatly in health, even though two of them were phthisical. Also the treatment was used in several cases of puerperal insanity and greatly aided their recovery. Of the 18 men, 9 had left the asylum; all had gained weight under the treatment, some many pounds. As a conclusion, Dr. Jones recommended the treatment in the melancholia of adolescents and in apathetic cases.—The authors replied on the various points raised.

Mr. G. SCOTT WILLIAMSON read a paper on Typhoid Carrier Infection. He narrated the results of his investigation into cases which had had typhoid fever some time ago, and who were found still to have the bacillus in a motile and active form in the body, these bacilli being capable on inoculation into animals of setting up the disease.—The PRESIDENT alluded to the case of the man mentioned by Deane, who 29 years before, had had typhoid fever and the bacilli were found in his excreta in a motile form. At one of the asylums an outbreak of typhoid fever was eventually traced to an old woman, aged 75 years, a dement, very dirty in her habits, who was found to have the bacillus in a virulent form.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Athletics and Physical Development.

A MEETING of this society was held on March 2nd, Dr. BYROM BRAMWELL, the President, being in the chair.

A discussion on the Use and Possible Abuse of Athletics during the Period of Growth and Development was introduced by Dr. T. M. BURN-MURDOCH. He said that during the past year public attention had been drawn to this question to a large extent. One could not fail to be struck with the marked change for the better on frames normally, deficiently, and defectively developed under active exercise. Pigeon-breast, hollow breast, drooping shoulders, stooping, and lateral curvature of the spine disappeared, and marked increase in height not infrequently started when systematic exercises were taken. Marked improvement in asthmatics was common, and surprising results had been noted even in organic heart mischief with the attainment of finer chest development. The importance of regulated gymnastics along with more strenuous athletic exercises could not be over-estimated, and should always be attended to at school. Dr. Burn-Murdoch quoted from the essay of McLaren of Oxford on "Growth and Development" to show the marked improvement which took place in army recruits after short training: "But there was one change—the greatest of all—and that was the change in bodily activity, dexterity, presence of mind, and endurance of fatigue—a change a hundred-fold more impressive than anything the tape measure or the weighing chair could ever reveal." Immense changes for the better had taken place in all schools since McLaren wrote, the pioneer in Great Britain being Dr. Almond of Loretto School. Dr. Heard of Fettes College endorsed the immense value of athletic exercises by saying that "the general outcome of the present arrangement of athletics in Scotland was quite excellent." Many other headmasters agreed that it would be impossible to run a school with any hope of success without the full development of its athletic side. Three head-mistresses spoke strongly of the deficiency of early muscular training in girls, and for this reason laid great stress upon the necessity for gymnastic training being given before severe games were indulged in. They stated that no exemptions whatever were given from gymnastic lessons; by this means hard games were made safe, whereas otherwise there would be constant danger of overstrain and other mischief. Another lady principal of a large college said that "she could not conceive a girls' school without organised gymnastics and games." Many girls on entering public schools had malformed chests and lateral curvature of the spine; for these special exercises were given with excellent results. Since the introduction of physical exercise the improvement in the appearance of the girls had been most marked, and anæmia, which formerly required treatment frequently, was now almost unknown. Dr. Burn-Murdoch referred to the intellectual advantages of athletics and quoted McLaren as saying that "the very *élite* of the university were more often found among the college eight than among any other section of the community." Several headmasters and medical officers of schools had told the speaker that their best boys intellectually were frequently those who excelled in manly exercises and who were well developed both in mind and body. As regarded the moral value of athletics, he said that they developed character, unselfishness, coöperation with others, and endurance. Purity in school life was the prime object to be aimed at, but without athletics it would be impossible to attain. Bad habits were less likely to gain ground in a school where athletics were cultivated than where they were neglected. A few accidents or overstrains were nothing as compared with broken-down morals, weakened will, or distorted intellect. It had not been from the ranks of the manly athletic boys that suspects had been brought to him, but from those who had not been able to enter fully into athletic life. As regarded the possible abuse of athletics, it appeared from Mr. C. W. Cathcart's report that at football 1 fracture occurred in 760 players; 1 dislocation or sprain in 373; 1 other injury in 1175; or on an average 1 injury in 206 players. In "skylarking" and unorganised games 1 fracture occurred in 2611 boys; 1 dislocation or sprain in 1958; 1 other injury in 2136; or 1 injury in 740 boys. Headmasters and medical officers of schools were not alarmed by the question of accidents. Such must occur in any form of sport. In a long experience he had only known of one accident of a serious nature which spoilt a boy's life. Careful grading of boys, partly according to age but mainly by their actual physical powers, would prevent many accidents from occurring. The danger of overstrain was much over-estimated, though it did occur. If proper precautions were taken this risk should be reduced to a minimum. There was very little definite proof that permanent cardiac trouble was produced by over-indulgence in athletics, and so long as boys were fit to enjoy it there was no reason for stopping cross-country races. The cases of overstrain which had occurred ought not to have happened if control had been effective. Dr. Morgan found in 1873 that "the results obtained by the life tables, in so far as they bear on duration of life, are decidedly favourable to the rowing man." The effect of athletics on mental work was transient and ought not to occur under proper management. One great danger of athleticism was that it engrossed too much of the time and attention of the boy to the exclusion of other interests. Many parents and practitioners were opposed to boys undergoing athletic exercises, and much tact was required by school authorities to overcome these scruples. Dr. Burn-Murdoch was in the habit of compromising such, and in a short time it was usual to find the boy coming to ask leave to engage in the sports for which previously exemption had been asked. The speaker gave certain recommendations to assist in lessening possible abuse of athletics: (1) medical examination of boys and girls to discover disease or defects; (2) their classification for exercise; (3) proper clothing; (4) arrangement of exercises in relation to meal hours—hard exercises should never be taken for at least one hour after the meal; (5) special caution as to resumption of exercise after illness—the existence of latent illness must also be kept in mind; (6) supervision of exercises; (7) character of exercises—cross country runs should not be competitive or against time, but walking and running should be alternately performed; and (8) the importance of developmental movements along with severer forms of exercise was of the utmost importance and ought to be a *sine quâ non* in all schools.

Dr. A. D. R. THOMSON, medical officer of Loretto School, said that Dr. Almond's reputation was that he made the weak strong by employing athletics in the widest sense. He had never known a case of heart breakdown in the school during 30 years nor of athletics having caused any other injury. In preventing the abuse of athletics he relied on a careful medical examination, a history obtained from the medical attendant, the maternal history, and then a prescription for exercise was given. Records were kept to see that there was no going back. Special weaknesses or defects were dealt with and exercises prescribed. It was most important to avoid risk of chills and dry clothes had to be put on immediately after exercise. After a long run no more physical exercises were done that day or any severe mental exercise, but merely music or drawing. In games it was important to choose equal sides, and runs were taken in all kinds of weather. A wholesome fatigue was induced and the purity of the school was sustained to a very large extent in this way. Athletics were of the greatest value to the feeble or delicate boys.

Mr. GEORGE SMITH, headmaster of Merchiston Castle School, said that physical exercises now consisted in bendings, marches, &c., as contrasted with the old time gymnastic appliances, and though he thought both were equally good, he asked if there was anything in the present mode which made up for the enjoyment in the old system. The employment of physical exercises really constituted a duty, but one had to guard against that excessive interest which boys evinced in the results of their own efforts or in those of others. The whole object of athletics was to "keep fit." If games were to be of any use they must have risks, though these should be minimised. The ideal in cross-country runs had changed much. At Rugby a continuous run for from 4 to 7 miles was the rule. Now it was a progression for from 3 to 6 miles by fast walking varied by short spurts of rapid running, and no doubt this was the best method, though the good moral effect of perseverance and plodding was thereby lost.

Mr. C. W. CATHCART thought that there was still room for improvement in day schools as regarded the proper systematising of athletics. At Loretto 30 years ago the chest circumference of a new boy, aged 14 years, on admission might be 29 inches. After three months' training it was 30·13 inches. At the age of 16 it had increased by 2·2 inches, and at 17 by 3·2 inches. This great difference is not now observed because there has been a great improvement in the physical condition of boys generally before public school age.

Mr. TILLARD, headmaster of Cargilfield, said that he personally doubted if in young boys a high state of training or if much training was necessarily good. Precocity did not make for ultimate success. Over-pressure was distinctly bad and he was not sure whether this was not true as regarded training in young boys. He asked them to think of the young colt at grass; if they raced him at two years he would not be as good as when raced at seven years. One could be gentle with children as regarded their mental work, they could be sent early to bed, no repetitions, &c., but it was difficult to do this in the case of games. He believed that "break-downs" in later life were often due to the strenuous life before puberty, and thought that one might take excessive exercise after adult life without harm.

Dr. GRAHAMS, headmaster of Dollar Academy, said that in every child there was the effort to take exercise according to the promptings of nature, and he failed to see how medical knowledge would allow one to settle the amount of exercise which should be taken at every age. As soon as they departed from the inclination of the child they were on unsafe ground. A prize for a mile race was often dangerously obtained, as there was not only the risk of heart strain, but also of debilitating every system. He would make the gymnasium a play-place under supervision. Every child would take such exercise as was proper for it. He himself was rather in favour of "skylarking," as the prompting was not in the mind only but in every muscle of the body. He put in a plea for trust in nature and less for systematised exercises. He thought that children should have more time for open-air exercises, and also thought that far too much time was spent in school.

Dr. JAMES CARMICHAEL, Dr. R. MCKENZIE JOHNSTON, Dr. JAMES RITCHIE, Dr. RUSSELL E. WOOD, Dr. ALEXANDER GOODALL, Dr. D. CHALMERS WATSON, Dr. A. B. FLETT, Dr. A. T. SLOAN, Mr. HAROLD STILES, and Dr. J. V. PATERSON also took part in the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Iso-hæmolysis.—Wertheim's Hysterectomy.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 25th, Dr. J. B. HELLIER, the President, being in the chair.

Mr. H. UPCOTT read a paper dealing with Iso-hæmolysis in Malignant Disease. He described a technique for carrying out the tests with minimal quantities of serum and corpuscle emulsion. Of 86 individuals examined, 34 had carcinoma. 56 per cent. of these were shown to have hæmolytic sera. Among five cases of sarcoma there was only one whose blood was hæmolytic. 50 per cent. of the sera from cases of tuberculosis were positive. There were 27 patients suffering from various other affections; only two of these were positive, one a youth with a chronic hydrocele and the other a man with paroxysmal hæmoglobinuria. 10 normal persons were all negative. The resistance of red cells to hæmolytic sera was discussed, and brief mention was made of Elsberg's cutaneous hæmolytic reaction in cancer.

Dr. W. GOUGH read a paper entitled "A case of Malignant Disease of the Cervix Uteri, treated by Wertheim's Hysterectomy, with resection of one ureter."

Dr. E. F. TREVELYAN showed: 1. A man, aged 34 years, with Tabes, who had developed whilst under observation during the past two years a paralysis first of the right sixth, then of the left third nerve, and more recently of all the external muscles of both eyes. There remained a very slight external movement of the left eye, accompanied by nystagmus. The knee and tendo Achillis jerks were still present. Gastric crises occurred frequently, and there was a history of syphilis. 2. A youth, aged 15 years, with Habit Spasm of three years' duration. The movements consisted of involuntary raising of the upper lip. The head remained turned to one or other side and the eyes were partially closed. There were no mental symptoms. He was improving under electrical and exercise treatment.

Dr. E. O. CROFT showed a specimen of Primary Epithelioma of the Vagina from a multipara aged 46 years. The growth was oval, raised and flattened, hard, and showed early ulceration on the surface. It was situated on the posterior and upper part of the vaginal wall, and was free from the rectum. No other disease was present in the uterus or elsewhere. Owing to the small distance between the healthy cervix and the upper margin of the growth it was thought better to remove the uterus together with the growth per vaginam.

Dr. C. OLDFIELD showed: 1. A specimen of Carcinoma of the Cervix Uteri removed four years ago by Wertheim's operation. The patient had remained well and had been free from recurrence. Though she had well-marked phthisis at the time of the operation she now appeared to be cured of that also. 2. Carcinoma of the Cervix Uteri, with Double Salpingo-oöphoritis. The growth was extensive and had been diagnosed seven months before. The patient, though fat and alcoholic, had recovered except for a leakage from the bladder, a piece of the wall having been removed owing to implication in the growth.

Dr. T. CHURTON gave an X-ray demonstration of an Extracerebellar Tumour.

Mr. H J. ROPER, Mr. R. LAWFORD KNAGGS, Mr. A. L. WHITEHEAD, the PRESIDENT, Mr. J. STEWART, Dr. W. H. MAXWELL TELLING, Mr. H. LITTLEWOOD, Mr. W. C. MORTON, Mr. J. F. DOBSON, Mr. H. COLLINSON, Dr. ALEXANDER SHARP, and Mr. MICHAEL A. TEALE showed cases or specimens.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on Feb. 22nd, Dr. F. J. Smith being in the chair.—Dr. James Scott, Governor of H.M. Prison, Holloway, read a paper on the Death Penalty. The chief thing which had influenced him, he said, in selecting this subject for discussion was a paragraph which had appeared in the *British Medical Journal* of Dec. 11th, 1909. This stated that as a result of what had been said at the Medical Congress held at Budapest last year a circular was being sent round to medical men containing a series of questions relating to the death penalty. He had also been influenced by the recent remarkable agitation in France on the question. He would deal with that first. In France during the nineteenth century a number of unsuccessful attempts had been made to abolish capital punishment. By degrees, however, the carrying out of the death sentence became less frequent. The power of juries to qualify their verdict by the addition of "extenuating circumstances" helped this movement, for with a verdict so qualified the death penalty could not be carried out. There was, in addition, a right of appeal to a higher court, and a final chance of commutation by the President. As a result of all these means of escape the annual average number of executions fell to 1·8 in the years 1901–1905. During these years murders and crimes of violence gradually increased. In Paris especially bands of lawless youths, known as "Apaches," were credited with many homicides. In November, 1906, a Bill was introduced to abolish capital punishment, and at first did not appear to meet with much opposition. Shortly afterwards, however, a particularly brutal murder—by one Soleilland—aroused a feeling of intense horror and indignation among all classes. A strong campaign against the abolition of capital punishment was started, and eventually the Parliamentary Committee which had at first been favourable to the Bill reported against it. The more important arguments in favour of abolition were, first, that the punishment of death is irrevocable and irreparable. This, however, applied equally to other punishments. No money payment could atone for a sentence of imprisonment of several years. Further, the precautions, numerous inquiries by the police, coroner, magistrate, judge, the special observation kept on the prisoner while in prison, the right of appeal, and the anxious and minute revision of the case by the Home Secretary, rendered the possibility of a mistake being committed practically negligible. The second argument was that the punishment was not really deterrent, or not to the same extent as other punishments, but this view was not accepted by most students of criminology. Finally, it was urged that some other countries had abolished the death penalty with advantage. Italy was one of these countries, and there crimes of violence had reached an enormous figure. Whereas in England there was an annual average of about 300 homicides, in Italy with a population not very different the annual average was about 3814, of which nearly one-third were premeditated murders. The questions in the circular to which he had referred were as follows: "Do you approve of the death penalty from the medical point of view, and in particular do you think that the responsibility of the criminal can in all cases be determined with certainty?" He had to admit that absolute certainty was difficult to obtain about anything. Great care, however, was taken to ascertain the state of mind of people charged with murder. Even if the law as to insanity was so unsatisfactory as some people thought, the practice in the courts was to give the prisoner the benefit of any reasonable doubt. It was not infrequently said that too many were treated as insane rather than too few. As far as this country was concerned he did not think that this was a very strong argument against capital punishment. The second question was, "Do you know of cases in which a post-mortem examination has revealed the existence of gross lesions in the brain of an executed criminal?" He had no knowledge of any such case. He could only recall reading of one case alleged to be of this nature in a French journal. The details were very scanty, and the evidence did not appear to be sufficient. Another question was, "Should a doctor attend at an execution in order to verify the death of the condemned person?" In this country the medical officer was required to attend an execution. So long as capital punishment was ordained by the law he thought it was advisable that a medical man should be present. It was a painful and unpleasant duty, but he did not see that it was unprofessional or undignified. The last question was, "Do you approve of the proposal which has been made that the next International Medical Congress should record its opinion against the death penalty, and against the propriety of a doctor witnessing the execution?" He did not approve for the reasons he had already given. In conclusion, he trusted that in bringing this subject before the society he might lead medical men to consider, before signing the proposed circular, whether there was not a good deal to be said in favour of the death penalty, however objectionable from some points of view it might appear.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of the Pathological Section of this institution was held on March 3rd, Dr. T. R. Bradshaw, the President, being in the chair.—Mr. D. Douglas-Crawford showed: 1. A Fractured Axis from a man who had fallen down a staircase, head foremost, death being instantaneous. The fracture had passed through the odontoid process. The transverse ligament was intact. 2. A Left Cervical Rib removed from a man aged 24 years, the first sign of which was nerve irritation following an injury to the shoulder. An X ray photograph showed that this rib articulated with a buttress of bone springing from the first rib, and that there was a small right cervical rib also. Operation removed all symptoms.—Mr. W. Thelwall Thomas and Dr. W. W. Mackarell showed: 1. A specimen of X Ray Dermatitis and Epithelioma in the finger of a worker in X rays. The trouble had lasted many years, an ulcer appearing in the middle finger above the joint. On the other hand there was an ulcer which also proved epitheliomatous. 2. A Loop of Small Intestine, 10 feet in length, removed from a patient aged 48 years, who had suffered for some years with intestinal obstruction, culminating in two previous operations, when many bands had been removed. At the third operation a matted mass with shortened mesentery was removed, the ends of the gut being joined by a lateral anastomosis; the patient made a good recovery. 3. Carcinoma of the Antrum. 4. Carcinoma of the Testicle.—Mr. R. W. Murray showed the Sac of Femoral Hernia, at the fundus of which were small bundles of muscular tissue, which were believed to be gubernacular fibres. Mr. Thelwall Thomas ventured to suggest that the tissue of the gubernacular fibres should be non-striped.—Mr. F. T. Paul showed: 1. A section of Recurrent Breast Cancer exposed to the X rays for some months; the shrunken character of the malignant cells was compared with those of the original tumour. 2. A small Ivory Exostosis removed from a frontal bone, which had only penetrated the outer table. 3. Two specimens of "Hypernephroma" or Renal Cancer—(*a*) from a lady, aged 56 years, which was fatal from recurrence in nine months; and (*b*) from a servant, aged 40 years, who was in good health a year after operation.—Mr. W. Rushton Parker showed a Papillomatous Carcinoma of the Upper Jaw and Nasal Septum.—Dr. N. Percy Marsh and Dr. T. J. Williams showed (1) Tubercle Bacilli in large numbers obtained from the cerebro-spinal fluid, removed by lumbar puncture in a case of tuberculous meningitis; and (2) a thymus gland, weighing 336 grains, from a boy, aged 11 years, who died from cerebro-spinal meningitis on the fourth day of the disease with a temperature of 108° F.—Dr. R. J. M. Buchanan and Dr. Ernest E. Glynn showed an Aortic Aneurysm which had burst into the left lung.—The President and Dr. Glynn showed: (1) The Intestines from a case of Acute Enterocolitis with a membranous deposit in the ileum; (2) Chronic Ulcerative Colitis with nodular hyperplasia of the glands in the mucous membrane; and (3) a specimen of Bronchiectasis with Cerebral Abscess.—Dr. T. Bushby mentioned the case of a woman who suddenly became hemiplegic and died with coma. At the necropsy a large abscess was found in the parieto-frontal lobe and a small bronchiectactic cavity in the apex of the left lung.—Dr. Glynn showed the wall of a Hydrosalpinx containing numerous large cells which he regarded as foreign body giant cells.—Mr. Paul read a paper on the Pathology of Prostatic Enlargement. He criticised the chronic inflammatory and neoplastic theories, and gave reasons—physiological and pathological—for believing that the enlargement was the result of an involution change comparable with involution hypertrophy of the breast in the female at the climacteric period. The paper was illustrated with lantern slides.—Mr. Thelwall Thomas thought that there were three classes of enlarged prostate: (1) fibrous, due to inflammatory trouble; (2) true over-growth; and (3) adenomatous masses.—Dr. Glynn and Dr. J. H. Abram also spoke.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 24th, Mr. George Wilkinson, the President, being in the chair.—Professor H. Harvey Littlejohn in a paper on "The Medico-Legal Aspects of Death from Asphyxia," dealt first with the general appearances in death of this kind, and showed that none of them were characteristic. Fluidity of the blood, petechial hæmorrhages, congestion of organs, &c., were all found in death from a variety of causes. In violent asphyxia such as hanging, strangulation, smothering, or drowning, a definite diagnosis can only be made when evidence is present of the asphyxiating medium—that is to say, in hanging, strangulation, in smothering, the presence of local marks of violence, and in drowning, proof that water has entered the lungs during life. The mechanism of death by hanging and strangulation was then considered, together with the appearances found in such cases. The special difficulties in the diagnosis of overlying were discussed, and it was pointed out how unsatisfactory statistics were in this country as to the frequency of death from this cause. Richter's work on the subject was referred to, and his views were given—viz., that in the majority of cases of infants found dead in bed under circumstances suggestive of overlying, careful post-mortem examination generally showed that another and sufficient cause of death, such as bronchitis, bronchopneumonia, or gastro-enteritis, was present. The relations of status lymphaticus, enlargement of the thymus gland, rickets, laryngeal spasm, and metabolic toxæmia, to sudden death in infancy, were also discussed in this connexion. As regards drowning, the work of recent investigators was cited, showing the uncertainty of the formerly accepted signs of death from this cause and the fallacies which the entrance of water post mortem into the air-passages may give rise to. Absolute proof of drowning can be obtained by showing dilution of the blood in the left side of the heart, as compared with that on the right side and in the body generally. The means by which this proof may be obtained were indicated.—Mr. Graham S. Simpson read notes of three cases in which the cystoscope had been used: 1. A case of Perinephric Abscess containing staphylococci, possibly secondary to an acute necrosis of the femur 20 years before. 2. A case of Vesical Calculus in which the patient had passed numerous phosphatic stones for the last few weeks; a uric acid stone was removed, but no other cause was found for the formation of phosphates. 3. A case of Tumour of the Kidney. It had been present for three years and was of large size, but the patient had presented no urinary symptoms; the urine was normal, and cystoscopy (after injection of indigo-carmine) showed the excretion to be similar in amount and colour. The kidney was removed and a large tumour was found at its lower end; the tumour had destroyed the lower third of the organ but had not invaded the pelvis.—Mr. Miles H. Phillips showed: 1. A Uterus containing a Papillary Carcinoma of the Corpus and a Submucous Cervical Fibroid of the size of a golf ball. It had been removed by the vaginal route from a multipara aged 56 years. The patient had consulted her medical attendant on account of a constant watery discharge, which she had supposed to be urine but which was found to be thin sero-pus. 2. A Uterus bearing a large Submucous Fibroid, half of which showed characteristic sarcomatous change. Discovery of this malignant change prompted removal of the cervix 11 days after the primary operation. The patient was a spinster aged 35 years. 3. A Corpus Uteri in a state of Subacute Metritis and Double Pyosalpinx. The left ovary was also removed as it was closely adherent to its corresponding tube and contained a fibroma 1 inch in diameter. The patient, aged 29 years, had contracted gonorrhœa two years previously. In each case the convalescence was uncomplicated.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 3rd, Mr. C. J. Jacomb-Hood being in the chair.—Dr. A. W. Williams showed a case of Dermatitis of the Hands due to irritation by the juice from the cut stalks of daffodils.—Dr. L. A. Parry read a paper entitled "Some Points of Interest Revealed by the Medical Inspection of 2000 School Children." Among the points brought out were the following. Incidence of the common infectious diseases: measles, 79 per cent.; whooping-cough, 54 per cent.; chicken-pox, 37 per cent.; scarlet fever, 12 per cent.; diphtheria, 5 per cent.; enteric fever, 0·37 per cent.; and ringworm of the scalp, 3 per cent. In reference to the latter he pointed out the very long duration of the usual ointment treatment, and strongly advocated the employment of X rays. As regards the preservation of the teeth of school children, the only solution seemed to be the appointment of school dentists. Large tonsils and adenoids, sufficiently marked to give rise to symptoms, were found in 10 per cent. of the children. He strongly urged the systematic employment of proper breathing exercises after any operation for the removal of these growths. Enlarged cervical glands were found in 87 per cent. of the children examined, in most cases associated with decayed teeth or large tonsils. Defective eyesight was discovered in 13 per cent. of cases. The standard fixed was as follows. Any child who could not see at least $\frac{6}{8}$ with each eye, or any child with squint due to error of refraction, was counted as abnormal. Tuberculosis in any form was not common and quite rare in the lungs. The coöperation of the parents in the treatment of defects discovered was very disappointing.—Dr. Hugh Galt showed a specimen of a Strangulated, Irreducible, Ileo-colic Intussusception, due to a simple pedunculated polypus situated about 12 inches above the ileo-cæcal valve and hanging free in the ascending colon from the apex of the intussusception. The extent to which the mesentery had been drawn in had produced a distinct curve of the intussusceptum. It was removed by Dr. F. J.

Paley from a woman, aged 38 years, who was about five and a half months pregnant.—The following resolution was carried unanimously and ordered to be forwarded to the committee of the Women's Hospital :—

> That this society deprecates the action of the authorities of the Women's Hospital in issuing handbills in connexion with their new branch at 5, Balfour-road : and also in charging for attending midwifery cases and advertising those fees.

Medico-Chirurgical Society of Glasgow.—A meeting of this society was held on March 4th, Dr. Alfred A. Young being in the chair.—The meeting took the form of a clinical demonstration on Diseases of the Nervous System. —Dr. T. K. Monro showed cases of (*a*) Syringomyelia; (*b*) Angioneurotic Œdema; (*c*) Tabid Arthropathy; (*d*) Progressive Muscular Atrophy complicated with Herpes Zoster; (*e*) Cerebral Diplegia; and (*f*) (with Dr. J. Guy) a case of Dissociated Anæsthesia.—Dr. Robert Kennedy showed: (*a*) An Intracranial Tumour which could not be localised during life, with photograph of the patient after a decompression operation; (*b*) a patient who suffered from Traumatic Paralysis and Atrophy of the Right Deltoid and Teres Minor Muscles, and in whom suture of the divided circumflex nerve was followed by restoration of function; and (*c*) a Gasserian Ganglion removed by the trans-zygomatic route, with photograph of the patient, showing area of anæsthesia.—Dr. W. K. Hunter showed: (*a*) A Brain from a case of Pseudo-bulbar Paralysis; (*b*) a case of Friedreich's Disease; (*c*) a Brain showing Subcortical Hæmorrhage limited to the Post-central Gyrus; and (*d*) a Brain from a case of Amnesia Verbalis with Word and Object Blindness.—Dr. J. M. Cowan showed casts and photographs from cases of Acromegaly; and (with Dr. A. J. Ballantyne) a case of Hemiplegia with Sensory Disturbance and Hemianopsia.—Dr. A. G. Hay showed a patient (a compositor) with Paralysis of the Thenar Muscles supplied by the median nerve.—Dr. A. MacLennan described a case of Tuberculous Meningitis with unusual symptoms of cortical irritation.—Dr. A. W. Harrington showed a patient with Charcot's Disease of the Knee-joint; and (with Dr. J. H. Teacher) microscopic sections of the Nerves, Spinal Cord, and Medulla from a case of Extensive Peripheral Neuritis, in which paralysis of the larynx, palate, and pharynx was present.—Dr. R. Muir showed a number of pathological preparations (*a*) of Cerebral Tumours, and (*b*) from cases of Cerebral Softening.—Mr. H. Rutherfurd showed: (*a*) Specimen of a large Cerebral Abscess; (*b*) a Cerebral Tumour from the neighbourhood of the corpus callosum (sections by Dr. Teacher); and (*c*) (with Mr. J. Battersby) a preparation of a Hydrocephalic Head.—Mr. J. H. Pringle and Dr. Teacher showed a preparation from a case in which Thrombosis of the Longitudinal and Lateral Sinuses, with Cortical Hæmorrhages, took place shortly after birth.—Dr. Teacher showed specimen and section from a Cortical Cerebral Lesion associated with aphasia.

Nottingham Medico-Chirurgical Society.—A meeting of this society was held on March 2nd, Dr. A. Fulton being in the chair. The following interesting cases were shown.—Dr. H. Michie exhibited a case of Cerebellar Disease in a middle-aged man. The classical symptoms of giddiness, sickness, nystagmus, and unsteadiness of gait, especially when the eyes were closed, were present. The nystagmus was of an outward and cerebellar type; no optic neuritis was present.—Mr. W. M. Willis and Mr. H. B. Tawse showed a boy, aged about 16 years, with a growth of some months' duration blocking the left nasal cavity right from the anterior nares in front to the posterior nares behind. Apparently it did not arise from the antrum. It was very vascular and a section showed it to be a rapidly growing carcinoma. No abnormal enlargement of glands could be discovered. Opinion of the members was divided as to the advisability of operation.—Dr. F. H. Jacob showed a case of Nævus with a peculiar distribution along the right intercostal nerve. The condition was not present at birth. Dr. Jacob gave a demonstration on this case of the treatment by solid carbon dioxide, applying it for ten seconds. The temperature produced was about 80° below zero, and he gave details of the success by this method in other cases. Dr. Jacob also showed pathological specimens of Bilateral Sarcoma of both Suprarenal Glands. The patient had been at work ten days before death and collapsed very suddenly. There was no bronzing of the skin in this case.

Reviews and Notices of Books.

Contributions to Abdominal Surgery. By the late Harold Leslie Barnard, M.S., F.R.C.S., Surgeon to the London Hospital. Edited by James Sherren, F.R.C.S., Surgeon to the London Hospital, Surgeon to the Poplar Hospital for Accidents. London: Edward Arnold. Pp. 391. Price 15*s.* net.

One of the many ways of bearing witness to the loss that has been sustained by the death of a friend is to collect and publish all his writings, whether they have already been printed or have never appeared before. And especially satisfactory to his friends is it when these writings have been of marked value in advancing the progress of the subject worked at by him who has died. It is in conditions such as these that the contributions to surgery made by Harold Leslie Barnard have now appeared in volume form, and whoever reads them will acknowledge that by the death of the author surgery has indeed sustained a loss, for we may judge what Barnard would have done by that which he had already accomplished. For those who knew him, this work of Barnard requires no introduction; to those who knew him not, the very sympathetic introduction by Dr. H. H. Bashford will reveal somewhat the manner of man he was; those to whom he was something more than a name will find in this introduction many facts hitherto unknown to them that will go far to explain some points in Barnard's character which they may not have understood before. He was born in 1868, and it is worthy of mention that he was a great-nephew of Michael Faraday. Even in his school life he showed his dislike to take anything for granted, and the habit of verifying personally whenever possible the statements that were presented to him grew with his growth. At the London Hospital, which he entered at the age of 20, he did extremely well and a large number of academical honours fell to his lot. He worked unusually hard, and filled many resident appointments before he started work as demonstrator in physiology in the London Hospital Medical College; and his work as a physiologist bore good fruit when he turned his attention to surgery. The first contribution in the book deals with intestinal obstruction, and as it occupies more than 250 pages it forms, in fact, two-thirds of the whole volume. It reflects the latest teaching of modern surgery, but withal it shows the impress of an original mind. It is filled with illustrative cases showing the foundations for the opinions expressed, and its bibliography is extensive. Without any wish, however natural, to praise unduly the work of one no longer with us, we may say without fear of contradiction that no more clear exposition of the subject, no more philosophic consideration of the mode of production, the symptomatology, and the treatment of intestinal obstruction, is to be found in the English language. Especially noteworthy is the balanced judgment with which the various methods of treatment that have been recommended are discussed, and in no part of the subject is care more needed than in this, where individual opinions differ so widely. Not less interesting is the lecture on gastric surgery which he delivered at the Medical Graduates College. Here we have an interesting description of the anatomy and physiology of the stomach, especially in their relation to the surgery of the organ. An even more important subject follows. Most surgeons have at one time or another encountered cases in which symptoms of acute abdominal disease were due to intrathoracic inflammation, and the chapter on the simulation of acute peritonitis by pleuro-pneumonic diseases, which appeared in the columns of The Lancet of August 2nd, 1902, is a useful warning against the danger of mistaking one group of diseases for the other, while the account of the pathology helps us to understand how this mistake may arise. The three lectures on acute appendicitis are noteworthy, and here again the reader is struck with the care devoted to the discussion of the reasons for the treatment to be adopted. The last paper is on the surgical aspects of subphrenic abscess, and it is by no means the least important of those contained in this volume. In it we find a careful classification of subphrenic abscesses, and it is shown how in the different groups the etiology varies. A valuable table is given stating the causes of 76 consecutive cases of subphrenic abscess which occurred in the London Hospital during eight years, and from this it is seen that perforated gastric and duodenal ulcers accounted for about one-third of all the cases; appendicitis was responsible for one-sixth; and hydatids and tropical abscess of the liver caused another sixth between them. The practical nature of Barnard's work is seen by his discussion of the value of the aspirating needle in the diagnosis of a subphrenic abscess and in his account of the qualities of an efficient aspirating needle—points small perhaps in themselves but of vast importance in practice.

We have not examined this volume in a critical spirit, though it can well stand critical examination. We have merely endeavoured to show the high quality of Barnard's work so as to induce surgeons to read what he wrote, but we may point out that none of those who had the privilege of benefiting by his instruction is likely to forget his teaching. When success was almost within his grasp he learnt that he had not long to live. Knowledge of this fact would have exerted on many minds a crushing force, but on him it had no such effect. He pursued his work with an energy that was greater than ever, and nothing in his manner revealed even to his nearest friends the fact that he was working under the shadow of death. Those who can appreciate the work he did can guess at the work he would have done; and they cannot fail to regret the untimely end of so useful a man.

Transactions of the Medico-Legal Society for the Year 1908–09. Edited by DIGBY COTES-PREEDY, M.A., Emmanuel College, Cambridge, of the Inner Temple and Oxford Circuit, Barrister-at-Law; and WILLIAM A. BREND, M.A., M.B. Cantab., B.Sc. Lond., of the Inner Temple, Barrister-at-Law, Examiner in Forensic Medicine to the University of Edinburgh, Lecturer on Forensic Medicine, Charing Cross Hospital. Vol. VI. London: F. J. Lamb. 1909. Pp. 248.

THE papers read before the Medico-Legal Society and the discussions which follow them contain so much that is interesting and suggestive that the volume published annually for the society deserves a wider circulation than is indicated by the limits of membership. In some instances the topics dealt with are suggested by unusual incidents not likely to be of frequent recurrence. An example of such an incident is to be found in the present volume, recounted and discussed in a paper by Dr. Charles Mercier, upon the arraignment of a person, a deaf-mute, with whom it was found impossible to communicate. Dr. Mercier was able to show that this was an example of a *casus omissus* for which our criminal procedure makes no satisfactory provision, with the result that such a person has to be treated as one mentally deficient or to be released after a formal acquittal. This matter demands consideration upon the ground of possible injustice and hardship to a very limited number of individuals, but it is essentially one for ventilation by those interested in the medico-legal aspects of crime. Other topics discussed are of wide medico-legal interest and affect not only the medical and legal professions in the pursuit of their callings, but the general public or large and important sections of it. Unqualified Practice and the Medical Act of 1858, by Dr. A. G. Bateman; Some Aspects of the Legal Responsibility of Medical Men, by Mr. A. Douglas Cowburn; Some Experiences of the Difficulties and Abuses of Workmen's Compensation Act, by Mr. Arthur S. Morley; The Workmen's Compensation Act: its Defects and their Remedies, by Dr. R. J. Collie, are titles suggestive of interesting contributions to the literature of these subjects, and it may be added that in the chapters referred to will be found an assemblage of references and notes of cases likely to be of use to counsel engaged in tracing that elusive quarry "the law" relating to matters of a more or less special character. The true importance of articles of this kind, however, lies in their appeal to the attention of the thinking public in order that undesirable conditions may be remedied by legislation. The evils of quackery receive little ventilation while so large a section of the press expects a substantial revenue from the advertisement of quack medicines. This is a thing which the public could put right, and an enlightened public, further, will view with pleasure new legislation for the control of quackery. The fact that a large section of the working class has obtained recognition of the right to compensation for industrial injury may prevent for some time interference tending to curtail the privileges of those who admittedly abuse this right, but here again the public will be wise to ask for legislation. Subjects of this kind are not exhausted in a single evening's discussion, and we hope that the society will keep them alive by bringing to bear upon them fresh instalments of recent and cumulative evidence derived from the experience and observation of its members. The last paper in the volume is "The Socialist Criticism of the Medical Profession" by Mr. Bernard Shaw. Mr. Shaw, on the evening when he addressed the Medico-Legal Society, had enjoyed an early opportunity for the perusal of the reports of the Poor-law Commission, and won over by "much the abler document," as he called the Minority Report, he was prepared to advocate and to predict a state service of medicine, offering such overwhelming advantages, that he had to leave unforetold what would "happen to the surviving private practitioner when you have the doctor in the responsible, and dignified, and independent position of a public servant instead of a private tradesman." Mr. Shaw's criticisms are worthy of serious attention even at the hands of those who are prepared to dissent from them most strongly.

Surgical Anatomy. By JOHN A. C. MACEWEN, B.Sc., M.B., C.M. Glasg., Senior Assistant to the Regius Professor of Anatomy in the University of Glasgow. With 61 figures. London: Baillière, Tindall, and Cox. 1910. Pp. xiv. + 478. Price 7*s.* 6*d.*

WHILE following the arrangement and methods usually adopted by English writers on surgical anatomy, the author, without being obtrusive, has succeeded in producing a new work with a commendable individuality. The outstanding feature of the text is its terseness and brevity—merits which when carried to excess may become almost faults. For instance, the parathyroid bodies are dismissed in two lines as "two small round masses found on either side towards the lower border of the lateral lobes" (of the thyroid)—a picture not sufficiently exact to be useful. These too-curtailed descriptions are but minor blemishes which must not be allowed to detract from the real merit of a text which presents a brisk practical picture of the human body from a surgical point of view.

We cannot help recognising that the author has been deeply and rightly influenced by the teaching of the distinguished occupant of the chair of surgery in the University of Glasgow. We are especially pleased to see that the libellous statement of being a vestigeal and useless organ has been withdrawn from the appendix, and an attempt made to restore it to a legitimate place in the economy of the digestive system. "Certainly," writes the author, "a number of obscure digestive troubles have been traced to affections of the appendix, and it is well known that obstinate constipation frequently follows its removal. It has been further noted in actual cases that mental impressions have a marked effect upon the secretion of the appendix and cæcum." We demur, however, to the statement that the ileum and appendix have a common nerve-supply; at least pain arising in them is referred to quite different areas of the body. Nor is the term "valve," although it be the conventional one, a happy one to apply to the ileo-cæcal orifice, which, as Glasgow surgeons know, is guarded by a special sphincter. The hernial regions of the body are described by the author as seen from the peritoneal aspect of the abdominal wall—an advantageous innovation. The operation preferred by the author for the removal of the Gasserian ganglion consists in following the superior maxillary division of the fifth nerve backwards, through the antrum of Highmore, and pterygo-maxillary space and middle fossa, a route not often adopted by English surgeons.

The book, as already said, is a good one, and ought to prove useful to student and practitioner alike. There are, however, certain traditional statements common to most books on surgical anatomy, as well as to Mr. Macewen's, which are open to criticism. One is that the subarachnoid spaces at the base of the brain serve as a supporting water-bed for the brain. These spaces are confined to a comparatively small area of the base of the brain; the greater part rests directly on the base of the skull, and leaves on it a very distinct impress of its convolutions. The surgical significance of the great basal subarachnoid space lies in the importance of the structures which pass through it and the frequency with which it is the site of a purulent meningitis. The description of "tongue-tie" as due to a shortening of the frenum linguæ and the condition of flat-foot as the result of a "loss of tone and stretching of the tendons and ligaments of the sole of the foot" are highly questionable statements. The custom of naming trivial structures after one of the authors who may have called attention to them—such as the "pouch of Prussak," "the spine of Henle," the "aperture of Bezold," &c.—serves to complicate rather than to simplify anatomy.

LIBRARY TABLE.

Aseptic Surgery. By C. B. Lockwood, F.R.C.S. Eng., Surgeon to St. Bartholomew's Hospital. Third edition. London: Henry Frowde and Hodder and Stoughton. Pp. 275. Price 5*s.* net.—Many of the treatises on the practice of aseptic surgery err by reason of excess of size. They contain all, or nearly all, that can be said as to the methods by which aseptic surgery is carried out, and they prove of great use to those already far advanced in the practice of surgery by asepsis. But there are many who have hardly crossed the threshold of the subject, and the presentation of an immense volume may deter them from wishing, or at least attempting, to enter further on the study. To such as these Mr. Lockwood's little book should prove very serviceable. While not attempting to contain the whole of the theory and practice of aseptic surgery, yet little of vital importance has been omitted. In chapters devoted to bacteria and to the organisms of wounds the student is initiated into the reasons which guide the surgeon practising asepsis in his work. The sources of infection are discussed, and then follows a chapter on disinfection and antisepsis. Chemical disinfections and antiseptics are described, and, curiously, carbolic acid and iodoform are especially honoured, a chapter being devoted to each. The preparation of the skin and the instruments and the mode of carrying out the aseptic details of an operation are well described, and not the least interesting chapter in the book is that devoted to the results of aseptic surgery. We do not discuss here the controversial points which are presented. The author speaks dogmatically, but of this we make no complaint, for in teaching a certain amount of dogmatism is essential to the reception of the principles by a student. The excellent printing always associated with the Oxford Medical Publications, of which this is one, adds appreciably to the appearance of the book.

Hoblyn's Dictionary of Medical Terms. Fourteenth edition. Revised, with additions, by John A. P. Price, M.D. Oxon. London: George Bell and Sons. 1909. Pp. 868. Price 10*s.* 6*d.*—A book which has reached its fourteenth edition is evidently one of value for some people. But of late years, medical terms, to say nothing of those employed in the collateral sciences—and this book deals with the latter as well as with the former—have increased so enormously as to make it impossible for any one volume of reasonable size to deal with them all. And this is where the book before us fails. It is good so far as it goes, and especially in that it gives a number of medical terms which are now obsolete. These, however, are necessary for a comprehension of the older writers in medicine. But as regards comparatively modern terms it appears, so far as we have checked it, very incomplete. For instance, there is no mention of many of the "signs"—e.g., the sign of Babinski, or of Kernig—though many of the eponymous signs are given such as Stellwag's. Again, take the "positions." There is no mention of that of Trendelenburg, of Walcher, or of Sims. Argyll Robertson's pupil is only given under the word "pupil." The editor has rightly given the Greek terms from which many words are derived, but in the next edition he should see that the error of translating a first person singular indicative by an infinitive is not repeated.

The Practical Medicine Series. Comprising Ten Volumes of the Year's Progress in Medicine and Surgery. Under the general editorial charge of Gustavus P. Head, M.D. Vol. IX.: Skin and Venereal Diseases and Miscellaneous Topics. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. Series 1909. Chicago: The Year-Book Publishers. Obtainable in Great Britain through G. Gillies and Co., Glasgow. Pp. 240. Price 5*s.* net.—This volume, or series of handbooks, contains a useful *résumé* of some of the chief papers which have recently appeared on medical and surgical subjects. There is little that is missing, but we think it worth mentioning that it contains no reference to solid carbonic acid or to liquid air as of value in dermatological therapeutics. It would have been perhaps as well if the editors had expressed an opinion as to the value of each paper abstracted, for it is difficult often in reading a *précis* to gain a very clear idea of the original article. We might also have expected to find more reference to the Wassermann reaction in the diagnosis of syphilis. The second portion of the book is rightly called miscellaneous, for it deals with such varied topics as heredity, physical degeneration, smoking, longevity, the necessity for more frequent necropsies, and the liability of anæsthetists. It is convenient to have these special articles for reference, though they differ widely in their relative importance.

An Introduction to the Study of Biology. By J. W. Kirkaldy and I. M. Drummond, Science Mistress at the North London Collegiate School for Girls. With 101 figures in the text. Oxford: Clarendon Press. 1909. Pp. 259. Price 6*s.* 6*d.*—Within this little book the authors have successfully compressed the leading principles and facts of zoology, botany, and physiology. The book is intended for the upper forms of schools, but it ought to appeal to university students as well, and especially to medical men who wish to renew an earlier and perhaps unpleasing acquaintance with biology. A quotation from the first chapter on the amœba gives a fair idea of the style and scope of the work: "When a pseudopodium is being formed, the clear ectosarc flows out first to form a tiny hump; then the endosarc is seen, by the movement of the granules, to run into the hump, and seems to push it out further and further, often to such an extent that the greater part of the body becomes pseudopodium, the granules running out into the pseudopodium all the time. The granules are partly stored-up food, partly little collections of waste matter." The book is divided into three parts: Part I. is devoted to unicellular organisms (hæmamœba being one of the types selected, illustrated with one of Schaudinn's figures); Part II. deals with the simpler multicellular organisms; while in Part III. a concise but clear and accurate account is given of types of the higher plants and animals. The manner in which the authors have woven physiological and historical facts into the descriptive text is most commendable.

Thornton on Patents. London: Chas. Jones, Limited. Pp. 556. 1910. Price 21*s.* net.—This book is replete with fussiness, of which there are many examples diffused through the work. We take the following specimen, by way of illustration, from p. 134. The text at this point consists of a reprint of the Patent Act of 1907, with annotations. The notes are not profuse, but are amplified by the employment of large type and leading; and under these conditions of emphasis we find, under Section 34, the following sentence, indexed in the margin of the page by the rubric "Author's note"—"Needs no comment." The "Author's notes" are not always equally judicious. We observe, for example, on p. 136, in a note to Section 37 of the Act, the following somewhat startling statement concerning patents in particular and personal property in general: "Patents, like other property, devolve upon heirs-at-law as part of the patentee's personal estate." But Mr. Thornton, we observe, is not a lawyer, and it would be unfair perhaps to criticise his law with any severity. We turn to a subject which should be specially his own, since he practises as a patent agent, and on p. 77 we find him directing our attention by a marginal rubric to what is described as a "Rule as to Sufficiency," the sufficiency in question being the sufficiency of a complete specification to satisfy the requirements of the Act. And here we must transcribe the whole sentence and the footnote which completes it. Says the author, after having expounded in general terms that it is better in a specification to give more information than is strictly necessary rather than incur any danger of falling short of the legal requirements by giving too little: "In the opinion of the writer, it may not be agreed by all, neither may the reason be too apparent, the perfect specification in this respect is the one that strikes the happy medium and gives just that information that is necessary and no more." Footnote—"It is not desirable in a work of this kind to enter into a lengthy discussion on this point." This is, as our readers will perceive, an unconventional book, and it might be much improved by unsparing revision.

Beasts and Men, being Carl Hagenbeck's Experiences for Half a Century among Wild Animals. An abridged Translation by HUGH S. R. ELLIOT and A. G. THACKER, A.R.C.S. Lond. With an Introduction by P. CHALMERS MITCHELL, M.A., D.Sc., LL.D., F.R.S., Secretary to the Zoological Society of London. With Photogravure Portrait of the Author and 99 other Illustrations. London: Longmans, Green, and Co. 1909. 8vo. Pp. xiv. + 300. Price 12*s.* 6*d.* net.—The name of Carl Hagenbeck has become of late years something of a household word, for he has been to the denizens of our great zoological gardens very much what, in his day, John Howard was to human prisoners. It is to Herr Hagenbeck that the great carnivora, the apes, the parrots, so long tortured by close confinement in small cages with inadequate supplies of light and air, and often with an unsuitable dietary, owe their introduction to the open-air treatment, now so conspicuously and beneficently employed in many of the large zoological gardens at home and abroad, and especially here in London, where Dr. Chalmers Mitchell has worked wonders for the creatures under his charge by allowing many of them to roam in large cages open to the healthy influences, with their imperfections, of London light and air. "Beasts and Men," *mutatis mutandis*, deserves to rank with Lockwood Kipling's "Man and Beast in India," and with the classics of travel. It is a fascinating book, a record of faithful and intrepid endeavour in the cause of zoological science quite as much as of the trade we have hitherto associated with the name of Jamrach. To medical men it should prove especially interesting reading, for it deals with problems of acclimatisation and the open-air treatment of creatures with tuberculous tendencies not so far removed from human beings as to render them valueless examples. The Hagenbeck experiments have been primarily carried out at the model zoological park of Stellingen, near Hamburg. They are fully described among other interesting matters in the text. Dr. Chalmers Mitchell and the translators and adapters of the work are to be congratulated respectively on the luminous introduction and on the rendering of the German original. The illustrations are full of interest, and Plate 19, representing two little black boys and their friend, an ape, may be commended to the consideration of those sentimentalists who persist in believing that the negro races have degenerated from a higher type of humanity.

Essentials of Medical Electricity and Radiography. By E. R. MORTON, M.D. Toronto. With 129 illustrations. London: Henry Kimpton. Glasgow: Alexander Stenhouse. Second edition. Crown 8vo. Pp. 349. Price 6*s.* net.—Dr. Morton is to be congratulated on the second edition of his book which exposes the uses of electricity in medical and surgical practice in simple language and at a very moderate price. This edition has not only been revised but augmented by a second part treating of radiography in 12 chapters, which cover the whole range of X ray diagnostic work in a very clear manner. The descriptions of apparatus throughout the book are good. The subject of the therapeutic uses of X rays does not appear to be dealt with. We can recommend Dr. Morton's volume as giving a concise and clear account of the essentials of medical electricity and radiography.

JOURNALS AND MAGAZINES.

The Dublin Journal of Medical Science.—In the February number Dr. Henry T. Bewley discusses medical education and criticises some features in the existing curriculum, urging that the courses of study in the early subjects should be more adapted to the needs of medical students and with that object lessened in severity so that more time should be devoted to practical matters. We feel that his views are those of most teachers, but almost despair of seeing them carried into effect. Dr. Henry C. Drury writes on Glycosuria and Graves's Disease, recording a case of this combination and dealing with the relationship between thyroid secretion and pancreatic action; and Dr. James Craig writes on the Treatment of Gastric Ulceration and notes good results from Lenhartz's method in certain cases.

THE LANCET.

LONDON: SATURDAY, MARCH 19, 1910.

The Streptotrichoses and Tuberculosis.

THE Milroy Lectures, which were recently delivered before the Royal College of Physicians of London, the concluding one being published in our columns to-day, contain an unusual amount of instructive and suggestive information, and Mr. A. G. R. FOULERTON may be congratulated not only on his valuable original investigations but in having arranged and brought into the compass of three lectures an excellent *résumé* of much which has been done in the pathology and therapeutics of various forms of tuberculosis. Those observers who have been principally engaged in clinical work, but who at the same time have taken advantage of the laboratory to assist them in diagnosis and treatment, have become so accustomed to the words "tubercle bacillus" that any other phraseology would seem unusual and vague. The investigations that have been made within the past decade have been widely accepted as tending to show that the various forms of tuberculosis as occurring in man, animals, and birds, and according to some investigators in reptiles also, were all caused by the same micro-organism modified by the soil on which it was grown. Mr. FOULERTON, however, in a most able manner, has dealt fully with the evidence which he found available in support of the following propositions :—(1) That under the name of "tuberculosis" there are commonly included infections caused by more than one species of parasite ; and (2) that the parasites, generally reputed to be bacilli, which are the cause of tuberculosis belong in reality to a higher group of organisms, and should, as streptotricheæ, be included with the hyphomycetes, or mould fungi. That the "bacillus of tuberculosis" is not a fission fungus at all, but that it belongs to a higher group of mould fungi, is no new idea, for a few years after KOCH'S announcement of his discovery of the cause of tuberculosis certain pathologists gave expression to the same view. Thus in 1888 NOCARD published an account of the characteristics of a parasite which had been proved to be the cause of a common disease of a tuberculous nature occurring in cattle in France and Guadeloupe. The parasite was described as a fine, long bacillus presenting occasional branching. This organism, now known as *Streptothrix nocardii*, has acid-fast properties, and under the conditions of artificial infection causes a definite tuberculous condition in guinea-pigs.

It was, then, one of Mr. FOULERTON'S purposes in delivering the Milroy lectures to present evidence in support of the proposition that the reputed bacillus of tuberculosis is a parasite—or more probably represents several parasites—which has been placed erroneously amongst the bacteria or fission fungi, when its correct position would have been amongst the mould fungi. Hence the exact position in botanical classification of the genus *Streptothrix* becomes of considerable importance. He has therefore dwelt at considerable length on the morphological and cultural characteristics of these organisms, and his remarks are of an erudite and extensive nature, exhibiting a profound knowledge of the subject. Mr. FOULERTON'S observations as to the unity of tuberculous infections are interesting, but some of his teaching is a little hard to follow. He mentions five distinct types : (1) tuberculosis occurring in fishes and other cold-blooded species ; (2) avian tuberculosis ; (3) tuberculosis of the rat ; (4) bovine tuberculosis ; and (5) human tuberculosis. These types or varieties are usually recognised, and it is also generally admitted that the parasites in each kind of infection have their own more or less distinctive peculiarities. He then remarks : "The question as to whether the five varieties of disease are caused by as many differentiated strains of a common stock, or by as many distinct, but generically allied, species is of little more than academic interest from a purely biological point of view." We doubt whether this statement would meet with general acceptance, and it might possibly tend to discourage further investigations, but the next sentence partially qualifies his position, for he adds that it is "highly probable that the absolute specificity of these, at any rate, closely allied low forms of life, with their rapid reproduction and quick susceptibility to varying conditions of environment is, and in no unlimited sense, merely a matter of time." In referring to avian tuberculosis he says that when the pathogenic activity of the parasites of human and avian tuberculosis is compared strongly marked differences suggest the separate identity of the two species, and he quotes experiments which showed the difficulty that was experienced in infecting poultry, pheasants, and pigeons by the human parasite. He also considers that the parasite of rat tuberculosis is specifically different from either the human or avian parasite. With regard to intercommunicability of human and bovine tuberculosis he believes that whilst the human adult is susceptible only, or only in any important degree, to infection by parasites from a human source, the child is equally susceptible to infection by either species, "human" or "bovine." The susceptibility of the ox to infection by "human" parasites has, as is well known, been proved by inoculation experiments.

On perusal of these lectures it will be seen that Mr. FOULERTON has covered a large field of investigation. His contention that the pathogenic organism of tuberculosis is a streptothrix and not a bacillus will probably meet with large acceptance ; the arguments in favour of this view are strong and are supported by many competent observers. With regard to his views on the various "species" or "varieties" of tuberculosis and their relations to one another, we consider that further investigations are necessary before definite conclusions can be drawn. The results of other investigators tend in the direction that Mr. FOULERTON has adopted. There are undoubted facts which appear to prove that avian tuberculosis is not the same disease as bovine or human tuberculosis, yet there are other facts that suggest that we are dealing with one disease in modified forms. Inoculation of human tuberculosis into fowls sometimes succeeds, and when it does reinoculation is also successful. Much controversy has raged around the question of the identity or diversity of the organism which produces tuberculosis in man and in bovine animals respectively, and the prevailing opinion is that in man and animals symptoms are produced by the same organism, modified by the special environment in which it exists in different parts. Before Mr. FOULERTON'S views, which we have quoted above, can be substantiated, further evidence in regard to latent tuberculosis must be collected. The possibility of infection through the healthy intestinal canal, and the uncertain period during which the pathogenic organism can be retained in the glands, would weaken the assumption that in the adult infection is mainly from human sources. Mr. FOULERTON'S lectures will be a stimulus to other workers, especially to those who may disagree with him, to continue their investigations, so that a matter of the utmost importance to public health may ultimately be placed upon an unassailable basis, and all pathologists will thank him for his labours.

◆

The Statistics of Voluntary Charity.

THE tables contained in "Burdett's Hospitals and Charities" for 1910, recently issued, include two which show the amounts collected and expended during 1906 and 1907 by the voluntary charitable institutions in Great Britain and Ireland, and as these have been preceded by tables giving the corresponding sums from 1896 to 1905 we are able to follow the course of the nation's benevolence during a period the latter part of which, at any rate, was not signalised by any notable degree of general financial prosperity. In contrast, however, to that which might have been expected, Sir HENRY BURDETT invites us to contemplate a steady and progressive increase of the income of our voluntary charities and to consider it in connexion with the suggestion that voluntary charity is inadequate to the task which lies before it, and that the State or the municipality should step into its place. The income referred to, arising from investments, legacies, subscriptions, and donations, amounted in 1896 to £8,011,495, nine years later this total had been increased to £11,407,406, in 1906 it was £11,753,278, and in 1907 £12,159,084. From these figures it will be seen that an average annual increase of £340,000 per annum is to be found in the earlier decade, and that in the last two years examined the average annual increase was about £375,000. It may be mentioned in further explanation of these figures that Sir HENRY BURDETT assigns about 50 per cent. of the totals given to legacies and investments, leaving the balance to the credit of the live donor, and that the income enjoyed by medical institutions in 1907 amounted to £4,658,623, or about 38 per cent. of the whole. These are figures of which the nation may justly be proud. They show an annual voluntary contribution of the living to the cause of charity, as Sir HENRY BURDETT points out, equal to about one-sixth of the revenue which the Chancellor of the Exchequer raises by means of the income-tax, and the fact that they exhibit a notable advance from year to year proves that under existing conditions the source from which they are derived is not in any danger of failing.

We are, however, if not actually in a period of transition, at any rate in one in which measures which may lead to considerable change are being discussed and advocated. It is true that neither the Majority nor the Minority Report issued by the Royal Commission on the Poor-law recommends or even suggests the supersession of voluntary by rate-aided charity. The question is rather one of tendency. We have to estimate the results likely to follow indirectly from any change which may cause the voluntary giver to think that the good work which he has at heart is being undertaken by the State, and that his gift will merely operate to relieve others to some extent from contribution by means of rates and taxes. In the first chapter of Sir HENRY BURDETT'S volume we find some interesting observations upon the effect predicted for, and the conditions actually following the institution of, King Edward's Hospital Fund. It was predicted that it would divert subscriptions that otherwise would be paid directly to individual hospitals. As a matter of fact, the sums collected by the King's Fund and the Hospital Sunday Fund and Hospital Saturday Fund have shown a steady growth, which has occurred simultaneously with an increase in the incomes of the metropolitan hospitals and dispensaries. Those who fell into the error referred to no doubt miscalculated the effect of His Majesty's timely and sagacious recognition of the work being achieved by the hospitals. Attention was called by his action to their needs and in every direction the efforts of the benevolent on their behalf were stimulated. It is possible that those may be wrong who regard with some apprehension the future of the voluntary hospitals when the legislature has accomplished the task of amending the Poor-law which lies before it. The hospitals, no less than the existing Poor-law medical arrangements, must be affected in no small degree by any change that takes place, and the study and comparison of the proposals made by the Majority and Minority are not rendered of less interest to members of the medical profession by the fact that they can criticise not merely as interested parties but as experts. They will probably find that under the scheme of the Majority more definite provision is made for the continued usefulness of the voluntary hospital as a branch of voluntary charity than under that of the Minority. And they will find in Sir HENRY BURDETT'S statistics some reassuring facts as to the charity and helpfulness of the public.

◆

The Bogey of Premature Burial.

PERHAPS an apology is needed for a return to such a well-worn subject as the risks of premature burial, but knowing that these supposed risks are a source of anxiety to a great number of people and that medical men are not infrequently consulted as to their reality it may be of service if we once again try to lay the bogey which has recently been revived by a number of well-meaning if fussily minded people. Of the reality of the apprehension which exists on this point we have ample evidence, and need only instance the testamentary directions which have not infrequently been made that the medical attendant should after the supposed death sever an important artery before allowing the body to be consigned to the grave. We are not trying to refute the probability of any human being having been buried alive during the history of the world; indeed, the evidence of such burial having been performed either as a punishment or a propitiatory rite in ancient times may perhaps be regarded as fairly conclusive. And there may well have been a too true foundation for the tradition that in the days of the Great Plague of London dying and dead were upon occasion dumped together into a common pit. But we cannot envisage a return of such horrors unless the whole civil state were once more to be paralysed by a disaster the possibility of which we presume to consider obsolete, and it is no sentimental shudder for ancient agony that seizes the members of the Association for the Prevention of Premature Burial when they meet together. The stories of wretched beings struggling through their last minutes of unwelcome life in superhuman efforts to burst open the coffin that confines them have no relation to the horrors that may follow an extraordinary epidemic, but are put forward in order to suggest that premature burial is a not infrequent happening.

Although a general denial of such stories will not convince anybody wishing to believe them, it is possible that an examination of the probability of premature burial in the light of certain facts may be of consolation to the less prejudiced of those who dread its occurrence. In the first place, we can dispose of the idea that it happens with even moderate frequency. Wild statements have been made on this point, and even considerable percentages of live burials have been advanced on no better authority than that of a scaremonger's imagination. We need only ask one question in disproof of this contention. In all the thousands of post-mortem examinations which have been performed throughout the civilised world during the last 50 years has there been a single instance of the supposed corpse under examination showing signs of life such as would infallibly appear at the dissection of a living subject? We venture to say that if this had occurred the world would have heard of it. We would point out, moreover, that the bodies upon which post-mortem examinations are performed are in no sense selected, but include those of persons of both sexes and of all ages who have died from all sorts of natural and violent deaths and at widely varying intervals of time before the *sectio cadaveris.* In our minds this consideration at once disposes of the assumption that premature burial is of any frequent occurrence, and limits discussion to those unusual cases in which either because of a trance condition having existed before the supposed time of death or from the delay of rigor mortis, or from the temporary persistence of the body-temperature of life, there are reasonable doubts of the fact of death. But surely these are just the cases in which expert opinion will always be sought and in which burial will naturally be delayed until the onset of the incontrovertible sign of putrefaction. In speaking of the summoning of expert opinion in such cases we would not have it thought that we are opposed to such an amendment of the law of death certification as would render it illegal for a medical man to give a certificate of death without having seen the body; but we must point out that it is impossible to recommend such an alteration in the law until the State sees its way to remunerate the men who at present perform as an act of obligation the most important public duty of providing their fellow citizens with their passports to the grave. But although for many reasons it is desirable that no body should be buried except on a medical man's ocular evidence of death we do not consider it at all probable that signs of life in a supposed corpse can be overlooked by all of the various people who see and handle a dead body before its committal to the ground. Indeed, the length of time during which in this country it is customary to keep bodies before the coffin lid is fastened down makes us extremely sceptical of its possibility. Evidence more conclusive than that of opinion is forthcoming in another column of the present number, for our Vienna correspondent describes the elaborate system of death certification which has been enforced in Austria during the last 50 years, which provides that every body before burial must be seen at least twice within 48 hours after death by two independent medical men, and by one of them again immediately before the closing of the coffin. In no single instance has the fact of death been controverted during these repeated examinations, and to make assurance doubly sure in Vienna those persons who desire it can have the uncoffined bodies of their dead friends kept under observation in special mortuary halls for as long as eight days before burial, but of the many thousands of bodies which have been laid out in this manner not one has ever risen from his or her probationary bier.

It may be asked, How is it if premature burial never takes place that there are so many circumstantial stories of coffins having been found with unmistakable signs of the revival of their occupants? The answer is simple. Such stories are either not well authenticated or the facts are open to a simple explanation based upon well-known post-mortem occurrences. Our Vienna correspondent scotches one such tale. In a small mountain village the bearers of a coffin heard a knocking come from within, and hastily setting down their burden they opened it only to find the corpse in a state of decomposition, a hammer, left carelessly within the coffin, being responsible for the disturbance. In spite of the testimony of those present, including the priest, the tale was long cited as an instance of an averted attempt at premature burial. We will recall one other specific case which made some stir in 1884. The facts were brought to light in our own columns, and in the minds of most impartial people gave the quietus to what at first sight appeared a well-supported instance of premature burial. The Vicar of Llanelly, Canon DAVID WILLIAMS, wrote to describe how on opening a double brick grave, in which one coffin had been placed, for a second interment 11 years after, the gravedigger "was startled at finding that the lid of the coffin had been forced upwards against the stone slabs, leaving an opening in the coffin of about 8 inches, the right arm and right leg of the woman's body hanging over the left side of the coffin and her face lying sideways, or nearly downwards, the right knee being placed against the north side of the grave, outside the coffin." The letter proceeded to set out that the body had been buried without a medical examination within three days of death and that there were reasons to think that the lid of the coffin had not been screwed down. The object of his letter was to elicit a medical explanation of the occurrence, which could hardly fail to gain local credit as an instance of live sepulture. The letter was answered by Mr. CHARLES WILLIAMS, district medical officer of the Bodmin union, who advanced the explanations either that the occurrence was due to the late onset of rigor mortis with movement due to contraction of the muscles, or else that the coffin had been burst by the pressure of gases of decomposition. This position was traversed by Dr. CHARLES ELGOOD, but the correspondence was closed by a letter from Mr. D. J. WILLIAMS, which is so significant that we quote part of it as an interesting commentary upon the whole story of premature burial. He began by remarking that Canon WILLIAMS had only the sexton's authority for the condition of the remains, not having seen them himself, and continued: "The deceased, aged 73, died on Easter Monday, 1873, and was buried the following Friday. She had been suffering from very extensive varicose ulcers for 20 years, was asthmatic, and died dropsical. For a long time before her death she had been unable to move without help. The body was placed in a strong, well-made oak coffin ...... and was so swollen that the coffin lid had to be forced to enable it to be secured by screws. These facts I have from two sons-in-law and a daughter, all of whom witnessed what I have described, and they are, I think, sufficient to destroy the notion of a live burial; and it had been well if our vicar had taken counsel and inquired carefully into these matters before rushing into print and giving rise to such false and disquieting alarms. ...... The idea of an old woman of 73, who died in a state of extreme asthenia, after giving no evidence of life for over four days, suddenly waking up, and bursting open a strong coffin-lid firmly secured by four screws, seems to me the height of absurdity." Looking back at the correspondence we think Mr. WILLIAMS was a little hard on his vicar, who seems to have written to us for information, and not necessarily to create an alarm, but the rebuke is of a pattern which is properly applicable to the great majority of scaremongers who noise abroad equally "well-authenticated" rumours of premature burial.

Annotations.

"Ne quid nimis."

THE PATHOLOGY OF THE SOIL.

THE struggle for existence amongst micro-organisms is, of course, one of the most interesting factors in pathology, and in some ways a similar battle may be said to be going on in the soil. Observers have recently been struck with the fact that the fertility of the soil can be very greatly increased by certain antiseptic treatment or by heating it at a definite temperature. It was found, for example, that when certain soils were heated to a temperature of 100° C. for two hours they yielded twice as great a crop as the same soil untreated when the two were afterwards cultivated in pots under similar conditions. In the same way an increased yield of 30 per cent. was shown when soil was first exposed to the vapour of such volatile antiseptics as carbon disulphide, chloroform, or toluene for 48 hours, provided that the soil was afterwards completely freed from the antiseptic before the experiment as to its fertility was commenced. The effect is so marked as to be comparable with the fertilising advantages of nitrogenous manuring. The phenomenon was obviously well worth investigating, having regard to the importance of a possible application in practice, and the better utilisation of the soil in agricultural industry. A study of the pathology of the soil seems to have supplied a very interesting answer. At Rothamsted, where very great and important agricultural questions have been studied with results of the highest practical value, it was found that the antiseptic treatment to which the soil was subjected did not effect complete sterilisation. The numbers of bacteria were enormously reduced by the process if they were counted immediately afterwards, but when the soil was moistened and put under conditions suitable for growth the numbers rapidly increased again and eventually reached a figure never found in normal untreated soil. With this increase in the number of bacteria in the soil came an increase in the rate at which ammonia was produced by the breakdown of the more complex carbon compounds of nitrogen present in the soil. It soon appeared that the difference between the treated and untreated soils was due to some factor in the latter which normally limits the number of bacteria, and therefore the rate of production of ammonia. The factor was ultimately found in the presence of numbers of protozoa and amœbæ which subsist on bacteria and keep their numbers within narrow limits. It would thus seem that the fertility of a soil is dependent upon the number of its ammonia-producing bacteria—a number which is kept in equilibrium by the action of protozoa in consuming the bacteria. If, therefore, the number of protozoa is reduced or destroyed the bacteria lose their destroyers and so are left free to carry on the work of fertilisation by elaborating ammonia. The question then arises, Can these enemies of the beneficent ammonia-producing bacteria be vanquished by practical means and the process applied to agriculture? It is probable that part of the work of the sun is to deprive the protozoa of the soil of their spoil, and by sparing the lives of the fertilising bacteria the soil is enriched by the increased work of these micro-agencies. The pathology of the soil has obvious points of resemblance to that of the human subject.

THE TERRITORIAL MEDICAL SERVICE.[1]

UNDER this title we have issued from this office a reprint in pamphlet form of the series of articles contributed last summer by a special military correspondent on the duties of the Medical Service of the Territorial Army, with a preface by Sir Alfred Keogh, late Director-General of the Army Medical Service, in which that distinguished sanitary administrator speaks of the publication of such a series as "a matter of great moment," and "an indication that the part which the science of medicine can play in helping the army of our nation to contend against the violence of our enemies is at last beginning to receive the attention that is essential to successful war." We need hardly remind our readers of the great part which Sir Alfred Keogh played in the creation of a complete medical service which should be an adequate branch of Mr. Haldane's Territorial Army, or of the fact that last summer a number of medical men in this country were encamped for the first time as medical officers of an army in the field, and were called upon to give expert advice upon matters of sanitation and physical hygiene under conditions that were entirely foreign to those obtaining hitherto in the practice of their profession. Whilst we believe that their duties were in the main carried out satisfactorily, we also believe that many would have welcomed the possession of such a practical little textbook of instruction as we are now enabled to place in their hands, and which we desire to bring to the notice of all commanding officers of units in the field and of their medical officers no less than of the departmental officers of the Territorial branch of the Royal Army Medical Corps. It is not our business to review the publication in detail, but we may say that the chapters deal with the following subjects: (1) Organisation: Duties in Camp; (2) the Selection of Sites for Camps: Water-supplies; (3) the Sanitary Upkeep of Camps; (4) the Medical Examination of Recruits: the Selection of Men for Active Service; (5) Some Medical Aspects of Marching; and (6) the Medical Aspects of the Food-supply of the Soldier. All these subjects are treated from a thoroughly practical point of view, and though, of course, no printed instructions can replace experience, we believe the teaching contained in the pamphlet will form a useful foundation upon which the military medical experience of many of our readers may speedily be based.

---

[1] The Territorial Medical Service, by a Special Correspondent of THE LANCET, with a Preface by Sir Alfred Keogh, K.C.B. London: THE LANCET Offices. Pp. 48. Price 6d.

THE INFECTIVITY OF SCARLET FEVER.

IN recent years many authors have expressed the opinion that scarlet fever is by no means so serious a disease as it was formerly considerded, and have raised doubts as to the necessity for insisting on the isolation of patients suffering from it. The point of view urged by Dr. F. G. Crookshank in THE LANCET of Feb. 19th, that the provision of means for the isolation of such sufferers is a cheap form of insurance against the trouble and inconvenience of nursing them at home, can only be maintained if it be proved that the disease is so common as to affect a large proportion of all householders, and so grave that very special measures are required for nursing it. In a recent paper which has now been published in book form [1] Dr. R. Milne, medical officer to Dr. Barnardo's Hospitals and Homes, maintains that by the adoption of very simple measures all risk of spread of infection can be obviated, so that the disease is little, if at all, more serious than an attack of influenza or a simple tonsillitis. The procedure which he advocates consists in careful inunction of the patient from head to foot with oil of eucalyptus and repeated swabbing of the throat with carbolic oil. He states that these simple measures absolutely prevent spread of contagion, and that patients suffering from scarlet fever can safely be nursed side by side with healthy children or with others suffering from surgical diseases. It certainly needs some courage to shake off the effects of all past teaching and to rely on these means alone, but, according to Dr. Milne, those who have done so bear testimony to the efficacy of the procedure. Complications also seem to be rare under this treatment, so that the affection is less perilous than measles, for example, in which such conditions as broncho-pneumonia and diarrhœa give rise to a considerable mortality. It is certainly desirable that steps should be taken to put the question of the true character of scarlet fever on a certain basis. If it is really a mild disorder, which can be easily prevented from spreading, then a large number of beds in our isolation hospitals may be made available for other purposes. If we are not mistaken, Dr. Louis C. Parkes some years ago suggested the advisability of utilising such accommodation for the treatment of sufferers from pulmonary tuberculosis, for whom, when their malady is advanced, there are at present few suitable institutions, and who may act as a source of infection to others, when living under unsuitable and insanitary conditions. Even if this were not found feasible, much expense might be saved if the necessity for isolating cases of scarlet fever were definitely disproved.

HELP IN CHILDBED.

A MOST interesting and praiseworthy scheme for rendering assistance to lying-in women has been initiated during the last few years by Dr. Van de Velde in Haarlem. With the assistance of a few friends he has been able to inaugurate a system of nursing necessitous women in their confinements by trained nurses much on the lines of district nursing as practised in this country. These nurses are instructed by himself, the course of training extending over a period of eight months, and are under the supervision of a matron. During the first four to six weeks of their course the women work under the guidance of the matron, but after this period they go out by themselves and visit on an average two to three patients daily. Each patient is visited three times a day and most careful notes are kept of the condition of the woman and of her child. These reports are furnished to the matron and inspected daily by Dr. Van de Velde, who in this way is kept well acquainted with the progress of the cases and is able to undertake the treatment and isolation of any case of sepsis at the very commencement. In addition to supplying nurses the fund also provides the mother with the necessary articles she requires at the time of her confinement and afterwards. If the patient is able to pay she is charged a small fee, and the question of the amount to be paid or of gratuitous help being given is settled by lady visitors who see the patients in the later months of pregnancy, and if necessary send them to the free polyclinic which has been instituted in connexion with the scheme. In this way the patients are seen before their confinements, and it is simple to guard against any possible sources of infection existing before labour, to treat defects of the nipples, and to recognise the presence of any pelvic deformity. It is interesting to note the great stress Dr. Van de Velde lays upon the necessity for proper rest on the part of these working mothers after their confinements; as he rightly points out, it is impossible if such patients are allowed to rise a day or so after their confinement to avoid their working, and all, even those obstetricians who are advocates of early rising, admit that early working does a great amount of harm in these cases. This beneficent scheme is not, however, limited merely to help in childbed; it is further directed, as its author claims, to the complete protection of maternity, and for this purpose there is a mothers' school intended to train young women in the responsibilities of the task which they may have to undertake. In this school two courses of instruction are given, one for the more educated mothers and the second for mothers of the working classes. In these the women are taught all that they can be of the prevention of infantile mortality, the feeding and rearing of young children, and the hygiene of pregnancy. As Dr. Van de Velde considers that maternal protection should include maternal assurance, he has started a system of insurance in which the women pay a sum averaging about 5*s*. a year and receive 25*s*. for each of their confinements. In comparing this system with those in existence in other places, Dr. Van de Velde calls attention to what are, in his opinion, the defects of the district nurse practising midwifery. He maintains that the district nurse, compelled, as she often is, to attend many septic and often suppurating cases, is a very dangerous attendant for the lying-in woman. In his opinion, while at the present day much care is taken to prevent the infection of the lying-in patient, too little attention is paid to the prevention of the possibility of infection before and after delivery. It is of the utmost importance that rigorous examinations should be carried out of all pregnant women suffering from any purulent discharge, combined, if necessary, with a bacteriological investigation. If the patient is delivered in her own home there is a great risk of infection being conveyed to her from persons living in the same house and suffering from purulent discharges. Dr. Van de Velde is of opinion that even in lying-in hospitals not enough care is taken to ensure the complete safety of the patients, since, as he points out, it is not the custom to isolate patients exhibiting mild degrees of septic infection, and he believes that the high morbidity-rate of some lying-in hospitals is to be explained in this way. In support of his views he gives some very interesting figures of the occurrence of pyrexia among women of the working-classes who were not nursed at all and those who were attended by the nurses trained under his system. In the former class the morbidity-rate was as high as 59 per cent., while in the latter it only reached 10 per cent., a very striking difference. The great advantage to the infants under this scheme is well shown by the mortality occurring among them during the first year of life; this amounted to only 4 per cent. as contrasted with 12 per cent. among babies of the same age in Haarlem as a whole. These results are largely owing to the great pains which are taken to induce the mothers to suckle their children. The children feel the good effects of the nursing, and the mothers, encouraged by the success of their efforts, receive a valuable training, and in their turn become advocates of natural feeding. Further than this, they seek the advice of the matron in any difficulty they may meet with in the later feeding of their children, and so the good outcome of the care expended upon them tends to last for many years. For the purpose of helping the mothers a consultation office has been opened where advice can be obtained on the nursing and feeding of babies, and from which lady visitors are sent out to supervise the mothers and to see that they carry out the instructions they have received. Nor is this all; there is also a kitchen where children's food is properly prepared, and where the mothers are taught to prepare such food themselves. The whole scheme undoubtedly reflects great credit on its organiser and forms a model which might well find imitators in this country, while not the least of its many merits is the fact that the work is carried out for a total expenditure per head of not more than 9*s.*

---

[1] A Plea for the Home Treatment and Prevention of Scarlet Fever. By Robert Milne, M.D., C.M. London: John Nisbet and Co. 1910. Pp. 80. Price 2*s*.

THE PARIS MEDICAL SCHOOL.

IN our fathers' days the Paris medical school was the Continental seat of education to which they turned their steps. In the two decades following 1870 the German and Austrian schools took the place of Paris, who began to resume her old supremacy towards the end of last century. The University of Paris will ever have a claim upon the affections of Britons, for she was in some sense the mother of the University of Oxford; and as in these days many a student from these islands turns his face to Paris to complete his medical education we welcome the appearance of the second edition of Dr. A. A. Warden's excellent little handbook to the Paris Medical School.[1] It is not given to many men to receive the degree of M.D. of Paris, for the standard is very different now to what it was in early times, when apparently no one failed in his examination for the Bachelor of Medicine for over a century—i.e., from 1395 to 1500 At least, so much may be inferred from the silence of the registers on the subject.[2] But whether pursued with a view to the taking of a degree or not, medical study in Paris is of great value, and for those who can afford the time and the money to spend a year or less in that city Dr. Warden's unassuming little work will prove most useful. It contains the article on post-graduate work in Paris which appeared in our columns in 1903 and a host of information about the Faculty of Medicine, the various hospitals, such ancillary institutions as the Pasteur and Radium Institutes, a list of medical and scientific societies, the museums and libraries, the Institute of France and the Continental Anglo-American Society. Since the first edition of the handbook was printed the opening of the Bureau de Renseignements at the Sorbonne, mainly due to the efforts of Dr. R. Blondel, has made the way of the student far more plain than formerly, and fortified with the knowledge which he will obtain at this institution, together with that contained in Dr. Warden's handbook, the student should be able to spend a most profitable time.

ACUTE ŒDEMA OF THE LUNGS THE ONLY MANIFESTATION OF PNEUMOCOCCIC INFECTION.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Feb. 25th M. Georges Guillain and M. Guy Laroche reported a case in which occurred a condition that appears to be so far unique—acute œdema of the lungs the only manifestation of pneumococcic infection. A labourer, aged 45 years, was taken to the Cochin Hospital one night in a state of such extreme dyspnœa that he was almost asphyxiated. He had been in good health until that day. After dining with good appetite but not eating or drinking to excess he went to bed, where he was seized at 9 P.M. with severe dyspnœa, which compelled him to get up. He went out into the street but was unable to stand and was taken to the hospital in a cab. On admission he was as pale as wax, his lips were cyanosed, and his extremities were cold. On auscultation, fine subcrepitant râles were heard all over the lungs, but there was neither cough nor expectoration. A bruit de galop was heard over the left ventricle; the pulse was 120 and hard, the temperature was 97·5° F., and the urine contained a little albumin. Bleeding to the extent of 600 grammes was immediately performed and as the blood flowed the patient was relieved and the dyspnœa diminished. He passed a comfortable night and next morning the respiration was calm. Auscultation showed only some subcrepitant râles at the right base. The temperature was 99·6°, the arterial tension registered 21 on Potain's sphygmometer, and the heart sounds were normal. He expectorated some rusty sputum which was typically pneumonic. It contained numerous pneumococci which were virulent for the mouse. On the following days the albumin gradually disappeared from the urine. The patient contracted syphilis at the age of 17, and had been addicted to alcohol. He showed signs of slight tabes, abolition of the knee-jerks and tendo-Achillis reflexes, and Argyll Robertson pupils. Acute œdema of the lungs due to the pneumococcus was diagnosed. It was thought that the "tabes fruste" might have been an adjuvant cause in the production of the œdema. Though the important part played by the pneumococcus in the pathogenesis of certain forms of œdema of the lungs is well recognised, no case in which the œdema was the sole result of the pulmonary infection appears to have been described. It is interesting to recall the different clinical forms of pneumococcic pulmonary œdema. 1. Agonal pulmonary œdema is a generalised œdema of the lungs which occurs at the termination of grave pneumonia. 2. In the course of pneumonia a crisis of acute suffocating pulmonary œdema may occur; it is often associated with cardiac failure. Death is the usual termination, but sometimes the expectoration of frothy fluid leads to recovery. 3. Merklen and Pouliot have called attention to an acute pulmonary œdema of pneumonic origin which occurs in the subjects of heart disease. In a case described by them there were for six days apical pneumonia, dyspnœa, cyanosis, and sonorous and sibilant râles scattered over the chest. At the necropsy a fatty heart was found. In this form the œdema sets in early in the pneumonia, which is marked by dyspnœa from the beginning. The signs of œdema predominate; those of consolidation of the lung are manifested only late in the attack or are unnoticed. Fever and rusty sputum, mixed with frothy expectoration, are sometimes the only indications of pneumonic infection. At the beginning of the attack the expectoration may be bloody. There are remissions or paroxysms of the dyspnœa, which are in relation with recrudescences of the œdema. These seem to occur at the same time as new foci of consolidation. Death is the usual termination. The pneumonia with pulmonary œdema may be the first indication shown by the patient of cardiac insufficiency. 4. After various pulmonary infections subacute pulmonary œdema may occur. The signs and symptoms are milder than in acute pulmonary œdema: there are only some large bubbling and some fine subcrepitant râles. Abundant albuminous expectoration continues for two or three weeks and the pneumococcus is found. 5. In the form described above there is possibly a latent central pneumonia of slight extent which shows itself clinically only by acute pulmonary œdema. The pneumonia is abortive. M. Guillain and M. Laroche suggest that the œdema is a defensive reaction against the pneumococcus.

---

[1] An English Handbook to the Paris Medical School. By A. A. Warden, M.D. London: J. and A. Churchill. Philadelphia: P. Blakiston's Son and Co. Pp. 52. Price 2*s.*

[2] Hastings Rashdall: Universities of Europe in the Middle Ages.

MYTH AND SCIENCE.

Traditions concerning so-called extinct animals still surviving in little-known regions of the earth's surface are persistent enough to warrant the attention of men of science. Whether, however, the strange creatures spoken of by savages as haunting lonely lakes and forests are really survivals from the pre-glacial epoch is quite another question. According to that great authority on wild animals, Herr Carl Hagenbeck, whose book is reviewed in another column, an animal akin to the Brontosaurus, which is twin brother to the Diplodocus, is still alive in the fever-haunted swamps of Rhodesia, whether northern or southern we are not told. Many years ago the observer Menges, who is a very trustworthy authority, was informed by negroes of the existence of this huge saurian, and a recent writer in the *Bulawayo Chronicle* mentions the continuance of the tradition and adds many interesting details. Were the late Professor Seeley, who above all other palæontologists was an authority on South African fossil fauna, still alive it would be interesting to hear his weighty opinion on the subject, if he has not already adverted to it in his book on dragons. The story has so far been treated as a rumour. Only a week or so ago private advices reached this country that in the dense and gloomy forests of an island in the Malay Archipelago (we believe it is Ceram) there still exist monsters of a species long believed to be extinct. The news first reached Mr. Alfred Stalker, a young collector of natural history specimens, who, we understand, has done good work for leading museums both here and in Australia. Mr. Stalker was told that the monsters would be found two days' march in the interior and that they lived in water. He is said to have postponed his search for them and now the melancholy news reaches us of his death by drowning. It is, of course, possible that the creatures are only tapirs. Readers of Mr. Andrew Lang's whimsical "Disentanglers" will remember that he chose Cagayan Sulu, one of the most southerly of the Philippine Islands, as the habitat of the mystic and mythic "Berbalangs." It is to this island that the explorers in his story brought their finds—the giant sloth (mylodon) of Patagonia, the bunyip of Central Australia, the beathach of Loch Odha, the eggs of dinornis, the gorilla, and so forth. Now we know that the mylodon existed in times comparatively recent, for it has been found, and the *Daily Express* sent out an expedition to investigate the matter not many years ago. The bunyip rests apparently on the authority of Buckley, the convict who escaped from Port Phillip a century ago, lived long as a savage among primitive Australian blacks, and doubtless was the antitype of the ingenious M. de Rougemont, as Selkirk was of Crusoe. Still, huge marsupials of the bunyip type may very well have existed in lagoons in Central Australia to times quite within the memory of persons still living. Sutherlandshire Celts have told Mr. Andrew Lang that in winter nights the beathach, a creature of immeasurable length, has been heard breaking up the ice in the lochs. Perhaps this creature is a dim reminiscence of the Pittsburg diplodoccus, the skeleton of which is well known to us in the British Museum of Natural History. The dragons, the kraakens, the many huge serpents of the "Lesser Edda," a work compiled in the snakeless Iceland of the thirteenth century, are doubtless also mere memories lingering for ages in the primitive mind. Of their family is the sea serpent, so solemnly reported upon in 1821 by William Clift, conservator of the Museum of the Royal College of Surgeons of England. This creature was perhaps a manatee. The mammoth, again, was long half mythic. Its tusks were sought for in Siberia, but the whole creature remained unknown until 1803, when the well-preserved body of a mammoth was melted out of a large block of ice on the shore of Lake Oncoul, and, though afterwards partially devoured by packs of wolves, was discovered in its entirety by a Tungoose ivory hunter, and in 1806 fully examined by Mr. Adams. The wild hunter at gaze before the mammoth was the subject of one of Ernest Griset's pictures long in the possession of the late Sir Joseph Prestwich in his Shoreham home. To medicine these strange histories are of considerable interest, though few men of science believe in the possibility of the survival among us of animals belonging to the pre-glacial epoch.

AUTO-SEROTHERAPY IN PLEURAL EFFUSION.

During the year 1907 Dr. Gilbert of Genf and Dr. Fede of Naples introduced a method for the treatment of pleural effusions, to which the former applied the name of auto-serotherapy. Briefly stated, it consisted in the withdrawal by means of a Pravaz syringe of 1 cubic centimetre of the fluid and immediately afterwards injecting it under the skin of the back, if it be serous or hæmorrhagic. Dr. Joseph Dodal of Vienna publishes an interesting paper in the *Wiener Medizinische Wochenschrift* of Feb. 19th, in which he gives a review of previous work on this subject and records his own experience of the method in 17 cases treated in one of the military hospitals of Vienna. It was claimed by both Gilbert and Fede that this procedure, repeated if necessary in severe cases, led to a rapid absorption of the fluid, whether it were hæmorrhagic or serous, the excretion of urine being increased at the same time. Shortly afterwards Nasseti reported favourably upon the method. He endeavoured to explain the beneficial results obtained, partly as the result of the mechanical stimulus of the puncture and partly from the effects of antitoxic and bactericidal products of the tubercle bacillus in the serum in tuberculous cases. Schuntgen used the method in a series of cases, including not only examples of pleurisy but also of hydrothorax, ascites, and other serous effusions. He found no advantage as a rule in cases other than those of pleurisy with serous or hæmorrhagic effusion, for which he strongly recommends it. Zimmermann also reported favourably upon the method, and suggested that the mode of action was by the production of a general leucocytosis of short duration which promoted absorption and diuresis. Marcon recommended auto-serotherapy in pleurisy, but regarded empyema as contraindicating its use. Szurek obtained less uniformly successful results and was of opinion that the value of the method had been exaggerated, and Koch found no benefit from the method. Dr. Dodal has employed auto-serotherapy in cases of serofibrinous pleurisy both of tuberculous and non-tuberculous origin from the time the method was described by Gilbert and Fede until the present, and in view of the conflicting opinions expressed by other observers his results are of interest. The routine adopted has been to wash the skin with soap-spirit and with other disinfecting agents, and then to induce local anæsthesia. A sterilised syringe armed with a long needle, also sterilised, is then employed to withdraw about 4 to 5 cubic centimetres of fluid. The needle is then drawn out from the pleura, without being entirely withdrawn, so as to avoid the necessity of repuncture, and pushed into the subcutaneous tissue. Two cubic centimetres are then injected, the needle is withdrawn, and the puncture wound sealed with sterile gauze and plaster. The remainder of the fluid is used for microscopical investigation. In severe cases the procedure may have to be repeated. Dr. Dodal gives details of his 17 cases, and on the whole reports favourably of the method, stating that it was almost invariably useful and in some cases markedly so. In one case on the day after injection an evanescent rash appeared, but otherwise no unpleasant effects occurred in any case. Dr. Dodal concludes that auto-serotherapy promotes diuresis, influences the body temperature and general condition favourably, and leads to more rapid absorption of the exudate. He finds that it is more useful in acute than in chronic forms of pleurisy.

DEFECTIVE VENTILATION AND SORE THROAT.

AN instructive series of experiments in connexion with the heating and ventilation of convalescent homes has just been made at the Yarrow Home at Broadstairs. It appears that this home has been troubled for some long time past with small epidemics of sore throat, and the circumstances pointed to defective ventilation being the *fons et origo mali.* An examination of the original installation of ventilating appliances, at all events, showed that under certain conditions which very generally prevailed ventilation was reversed in certain of the rooms. It was proved, for example, that the ventilation was satisfactory when there was no wind, but the moment a slight wind arose (a condition from which Broadstairs is hardly ever free) the air in many of the rooms was found to be taking a direction contrary to that which had been intended. Instead of passing away through the ventilating passages and up the shafts the air was actually drawn down owing to the suction due to the reduced pressure in those rooms situated on the lee or sheltered side of the building. Instead, therefore, of receiving a fresh air-supply there were occasions when air was being admitted into the rooms by a back-draught action through the ventilators themselves—through passages, that is to say, which can never be cleaned and in which accumulate large quantities of dust with its inevitable concomitant the micro-organism. Bacteriological examination, in fact, showed that amongst the rich crop of micro-organisms found on an experimental plate exposed near the air-shafts there were many pathogenic varieties and notably the micrococcus catarrhalis and staphylococcus. A plate facing downwards near the air-shaft showed few organisms, while the plate facing upwards swarmed with them. This afforded good proof that the action of the air-shafts was the reverse of that which was intended: they acted sometimes as inlets and sometimes as outlets, so that there were times when an accumulation of dust was liable to be drawn into the room. The epidemic of sore throat ceased as soon as the ventilating shafts in the ceilings were closed and ventilation by the open window was adopted. There can be little doubt that in all systems of ventilation provision should be made as far as possible to keep the air uncontaminated with dust or dirt, and that therefore the supply should be remote from the floor level. It follows also that air should never be allowed to enter by a channel the office of which is intended to be that of a discharge pipe. Reverse action in regard to many sanitary appliances is undoubtedly a frequent source of danger to health and it should be guarded against. We congratulate the authorities at the Yarrow Home on the satisfactory results reached by their scientific investigations and on receiving the best reward in the shape of a clean bill of health.

THE VACCINE TREATMENT OF LOBAR PNEUMONIA.

FROM time to time physicians describe some new method of treatment of lobar pneumonia, and claim success for it, only to be met by the retort that the recoveries which occurred were in spite of the treatment employed, not because of it. The advocates of treatment by inoculation with bacterial vaccines have learnt to expect this criticism of each new effort put forth by them; but one of them at least has been able to report six consecutive cases of lobar pneumonia treated with pneumococcus vaccine to which the familiar answer will scarcely apply. H. A. Craig[1] describes his experience of pneumonia as it occurs in the patients, most of them elderly men, admitted to a hospital for sailors. During the four years which elapsed before vaccine treatment was adopted two-thirds of all the cases of pneumonia ended fatally; now, however, six consecutive cases have been treated by inoculation, all of them recovering. This is, of course, a small number only; what is worthy of note is the type of patient concerned. All were men, ranging in age from 66 to 83 years; all were arterio-sclerotic subjects, all but one had a chronic nephritis, and three were alcoholics. In one case an empyema developed and had to be treated surgically; this man, having recovered completely from the empyema, died before leaving hospital from hæmorrhage due to the rupture of an aortic aneurysm. Craig's method is to inoculate the patient as soon as the diagnosis has been confirmed by bacteriological examination of the sputum with a stock vaccine of as recent a date as possible, a dose of from 20 to 35 million pneumococci being used; subsequently inoculations are made with vaccines prepared from the patient's own pneumococcus at intervals of 24 to 48 hours once, twice, or thrice as progress indicates.

PERFORATED GASTRIC ULCER IN A CHILD.

GASTRIC ulcer is rare in children; still rarer is perforation. In the *Boston Medical and Surgical Journal* of Dec. 23rd, 1909, Dr. F. B. Lund has reported the following case. A boy, aged 8 years, was admitted into the Boston City Hospital on Dec. 29th, 1908. The history was that he was brought up on the bottle and had the diseases of childhood in a mild form. Since the age of one year he suffered from occasional attacks of illness accompanied by vomiting. About a year before admission he was ill with paroxysmal pain in the epigastrium and slight fever. The pain was not related to his meals. He vomited a few times, and on one occasion the vomit was blood-streaked. A few months later a similar but more severe attack occurred, during which he vomited at one time a teaspoonful of bright blood and for two days the stools were black. On admission he was in another attack. He had been ill two weeks with severe and paroxysmal pain which radiated upwards and to the left from the epigastrium with frequent vomiting. On one occasion he vomited about 2 ounces of bright blood. The pain was more severe late in the evening or at night. The stools were sometimes dark. On admission the temperature was 101·5° F. and the pulse was 108. There was slight epigastric tenderness. Chemical and microscopic tests showed that there was blood in the stools. The symptoms rapidly subsided, the tenderness disappeared, and he was discharged on Jan. 9th, 1909, to attend as an out-patient. On Feb. 20th he was readmitted. He had been attacked two days previously with epigastric distress and vomiting. There were small amounts of bright blood in the vomit. Attacks of pain occurred in sharp paroxysms. The temperature was 102° and there were marked epigastric tenderness and muscular spasm. These symptoms subsided somewhat on the three following days. It was thought that subacute perforation of the ulcer had taken place. On the 24th a median incision was made above the umbilicus and a large indurated ulcer was found on the lesser curvature near the pylorus and firmly adherent to the liver. The adhesions were not disturbed. Posterior gastro-enterostomy was performed with a short loop. Recovery was uneventful save for slight bronchitis. After the operation the child was able to eat well and gained weight, and in November was in excellent condition. Dr. Lund claims that the boy is the youngest patient on whom an operation has been performed for gastric ulcer.

---

[1] New York Medical Record, Feb. 12th, 1910.

WELSH HOUSING.

Our columns have from time to time contained reports indicating serious deficiencies in the housing conditions of Wales, and we welcomed recently the formation of an influential society for the purpose of improving them materially. In our present issue will be found an interesting and lurid little communication from W. St.J. H. (p. 815), in which there appears ample confirmation from the published returns of the Registrar-General and other sources of the existence of a condition of things which calls for fuller inquiry and some action beyond that which is possible to private enterprise. The workers of Wales are entitled to attention that is too often denied to the patient and helpless toilers. The housing question is, however, not entirely a question for the working classes, since the general health and welfare of the community concern deeply the classes whose means enable them to select for themselves fitting housing amenities. The question has even a still wider aspect. Wales is so much the happy hunting ground of the health-seeker from English towns that the housing of the Principality becomes, to a considerable degree, a concern of the nation, as well as of the native labouring hard for existence on his own soil. We are not ourselves committed to the figures given by our correspondent, but we have every reason to trust his accuracy, and it is evident from the references constantly appearing in the press of Wales that there is a *primâ-facie* case for the inference that the excessive mortality in Wales is in some measure due to the faulty housing of the people. Instances are not wanting—one authenticated case is now before us—of the occurrence of pulmonary tuberculosis contracted by even septuagenarians on removal to dwellings occupied by tuberculous patients. Obviously the conditions are entirely favourable for such occurrences, and, consequently, even more so for those of more susceptible ages. The work of the Housing Association for Wales requires the coöperation of a large number of benevolently-minded persons, and we have no doubt that the medical profession will become, as always, a powerful ally in promoting preventive, as well as remedial, measures. We shall need no excuse for returning to this important question if, on further inquiry, we are furnished with the fuller data which are now urgently needed.

We are informed that all those recently elected to the Beit Memorial Fellowships for Medical Research were required to resign their paid appointments. Two Fellows were allowed to retain honorary posts necessary in order to obtain material for their research. One Fellow was allowed to hold an appointment of quite minor importance not directly connected with the subject of his research. There is no intention of departing from the regulation requiring the Fellows to devote the whole of their time to their authorised research. The list of academic distinctions, contributions to science and medicine, and appointments held was published in order to indicate the status of the candidates elected to Fellowships.

The Second International Congress on Occupational Diseases will be held in Brussels this year from Sept. 10th to 14th. A powerful British National Committee has been formed to promote the objects of the Congress under the honorary presidency of the Right Honourable Winston S. Churchill and the Right Honourable Herbert Samuel. The Presidents are Sir Thomas Clifford Allbutt and Professor Sheridan Delépine, and the secretaries Dr. T. M. Legge, H.M. Medical Inspector of Factories, and Mr. W. F. Dearden, honorary secretary of the Association of Certifying Factory Surgeons, to whom communications may be addressed at 15, Salisbury-buildings, Trafford-road, Manchester.

We regret to announce the death, at Dumfries, on March 8th, of Dr. James Rutherford, the distinguished alienist, who was physician-superintendent of the Crichton Royal Institution, Dumfries, for 25 years, until his retirement in 1907. He was in his 71st year.

An important International Exhibition of Hygiene, concerning which we shall publish particulars in a future issue, is announced to be held at Dresden in 1911.

The "Enseignement Médico-Mutuel International."—The seventh post-graduate tour of this body, which is better known under the short title of the "E. M. I.," will this year take place under the patronage of the Government of France between August 1st and 20th, the countries to be visited being Belgium and Holland, and the return journey being made *viâ* Luxembourg and Alsace. The meeting place will be Lille and the place of disbanding Vittel. The itinerary will include Ostend, Middelkirk, Blankenburg, Bruges, Ghent, Brussels, Louvain, Antwerp, Rotterdam, The Hague, Leyden, Amsterdam, the Ile de Marken, Utrecht, Liège, Spa, Bourgoumont, Luxembourg, Strasbourg, Munster, La Schlucht, and Gérardmer. The organising committee of the "E.M.I." has arranged for this year's tour to coincide with the International Exhibition at Brussels, which the members of the tour will have full opportunities of visiting during their stay in the Belgian capital. The detailed programme of the tour will be found in the February number of the "*E.M.I.*," which is published at 12, Rue François Millet, Paris, and will be sent to anyone who forwards a postage stamp voucher to the value of 15 centimes. We have much pleasure in commending this tour to the notice of our readers, seeing that some of its predecessors have been joined with enjoyment and profit by medical men from this country. The object of the tour is to visit the medical institutions at the various stopping places and to promote good-fellowship amongst medical men of different nationalities who may participate in it.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

IX.[1]

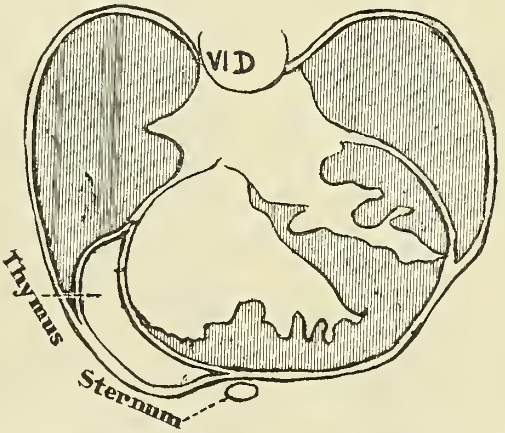
Thoracic Physics.

SPACE does not permit me to treat the subject of thoracic physics with that detail which its importance deserves; for it is in truth one of exceeding importance, and I make so bold as to affirm that no physician can approach the treatment of diseases of the heart and lungs with full wisdom and with full confidence (unless, indeed, it be the confidence born of ignorance) until he has mastered it. How little this subject is understood is evidenced by the orthodox accounts of the pathology of such diseases as emphysema, bronchiectasis, and spasmodic asthma. The student who is expected to understand them has my complete sympathy.

In this section I shall mainly occupy myself with establishing the principle that in all cases of dyspnœa the mean size of the chest tends to be increased.

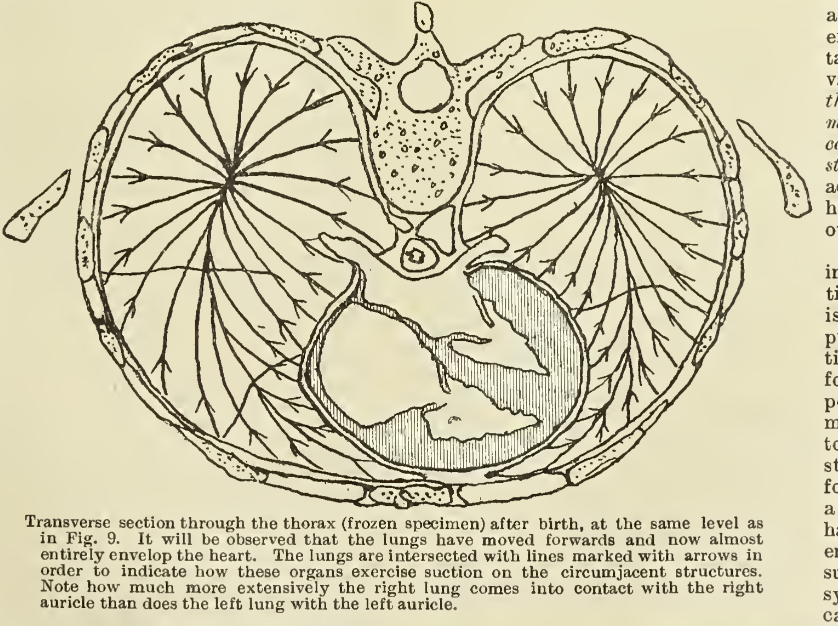
The lungs in the fœtus are solid and only come in contact with a small part of the heart laterally (Fig. 9). At birth the chest is expanded, air is drawn into the lungs, which in consequence come to occupy the chief part of the intrathoracic space, and almost entirely to envelop the heart (Fig. 10). Note in this connexion that the right auricle is much more completely enveloped by lung than the left.

FIG. 9.



Transverse section through thorax of fœtus at the level of the sixth dorsal vertebra (from frozen specimen). It will be observed that the solid uninflated lungs lie chiefly at the back of the thorax and only come into limited contact of the heart at its sides.

FIG. 10.



Transverse section through the thorax (frozen specimen) after birth, at the same level as in Fig. 9. It will be observed that the lungs have moved forwards and now almost entirely envelop the heart. The lungs are intersected with lines marked with arrows in order to indicate how these organs exercise suction on the circumjacent structures. Note how much more extensively the right lung comes into contact with the right auricle than does the left lung with the left auricle.

It is important to take note of the fact that the thoracic expansion which draws the air into the fœtal lungs does not cease with the mere inflation of the lungs to a degree just short of stretching them (i.e., rendering them tense). On the contrary, the inspiratory muscles for some days after birth continue to enlarge the thorax to a degree beyond that which is necessary to effect this—not only, i.e., until the alveoli are freely opened up, but until the entire pulmonary tissue is considerably stretched; and *throughout life these muscles are ever on the watch*, so to say, *to maintain the lungs in this state of elastic tension.* As a result these organs are continually striving to retract towards their roots, away from the chest walls, heart, and other circumjacent structures. They may thus be said to exercise a kind of suction on the latter, since the pressure they exert upon them is less than that of the alveolar air by the amount of elastic tension of the lungs. We may conveniently speak of this force as "pulmonary suction." It is manifest that, other things being equal, its degree varies directly with the degree of pulmonary tension, being decidedly greater at the end of a full inspiration than at the end of a full expiration.

I believe that one of the functions of pulmonary suction is to favour cardiac diastole.[2] It is possible that the ventricles may possess some diastolic aspiratory power of their own; but there can be no doubt that the thin-walled auricles would, unless sucked upon from without, often experience considerable difficulty in diastole. Especially is this true of the right auricle in the upright position of the body when the blood in the inferior cava flows at very low pressure. Hence the interest attaching to the fact, referred to above, that the right auricle is more completely enveloped by lung than the left, this arrangement bringing the former so much more under the suction influence than the latter. We thus see that Nature has so arranged matters that the heart works in a partial vacuum, and that this arrangement facilitates diastole, especially of the auricles, and above all of the right auricle; and we must think of the inspiratory muscles as ceaselessly striving throughout life to keep the tension of the lungs up to the normal so as, among other effects, to maintain this partial vacuum. In short, *the inspiratory muscles furnish a contributory diastolic force:* they actually pull the heart chambers outwards.

Inasmuch as the inspiratory position of the chest is that in which pulmonary suction is greatest, it follows that this position is the one most favourable to cardiac diastole, and therefore to cardiac action, for the hampering influence of pulmonary suction on cardiac systole is practically negligible.

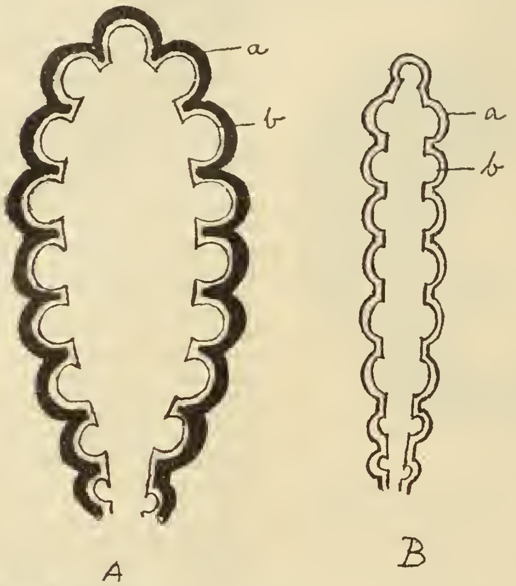
So much for pulmonary suction and its influence on cardiac action. Let us now consider the effect on the capacity of the pulmonary vascular system of the expansion and contraction of the lungs in respiration. This is expressed by saying that when the lungs are expanded to their utmost in inspiration they contain, other things being equal, not only the maximum amount of air, but the maximum amount of blood also—i.e., in the position of complete inspiration the vessels belonging to the pulmonary circuit are opened out to their utmost (Fig. 11), and in consequence of this *offer the minimum resistance to the right heart*. But we have just seen that in this position of the chest pulmonary suction is at its maximum, and the heart, consequently, most favourably circumstanced for sucking blood into its chambers. Hence it follows that the *thoracic position most favourable to the circulation in both the systemic and pulmonary circuits is that of extreme inspiration, and the position least favourable to it is that of extreme expiration.*

---

[1] Nos. I., II., III., IV., V., VI., VII., and VIII. were published in THE LANCET of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), 22nd (p. 256), and 29th (p. 318), and Feb. 5th (p. 388), 19th (p. 521), and 26th (p. 590), respectively.

[2] I am not contending that the sole object of pulmonary tension is the production of pulmonary suction. Pulmonary tension is a prime essential, for it is manifest that if the vesicular walls were kept constantly slack they would be apt to be wrinkled and to encroach on the vesicular cavities, thus interfering with respiratory interchange. Pulmonary suction is thus a secondary and, as it were, accidental consequence of pulmonary tension which would necessarily exist, even if the organism could dispense with pulmonary suction.

FIG. 11.



These diagrams represent an infundibulum. A, at the end of a full inspiration, and B, at the end of a complete expiration. B = alveolar wall, A = blood-vessels of the same.

Such being the case, we should expect the chest to manifest a tendency to assume the inspiratory position in dyspnœa, in which condition there is need both for increased respiratory surface and for increased pulmonary blood-flow, and such, in point of fact, is the case. *In all cases of dyspnœa the mean size of the chest tends to be increased.* This may be observed in the physiological breathlessness produced by exertion, and in the pathological breathlessness of such diseases as emphysema, bronchitis, pneumonia, pleural effusion, pneumothorax, spasmodic asthma, phthisis, and cardiac failure. This dyspnœic expansion is effected by a preponderating action of the inspiratory muscles, for except in the dyspnœa due to obstruction in the upper air passages, as from diphtheritic membrane or foreign body, the expiratory muscles in dyspnœa come little, if at all, into action, and then rather for the purpose of driving up the diaphragm, the recoil of which is sluggish from defective pulmonary suction, than of pulling down the ribs. Let us now test this generalisation by reference to some of the diseases in which breathlessness is observed.

Emphysema.—Two important facts stand out in connexion with the morbid anatomy of this disease: (1) loss of pulmonary elasticity, and (2) atrophy of the smaller pulmonary vessels.

1. With advancing years the elasticity of the lungs, like that of the skin and of other tissues, steadily grows less. In consequence of this the inspiratory muscles come into extra play so as to tighten up the pulmonary tissue, which would otherwise become increasingly slack, and thus maintain pulmonary tension, as far as may be, at the normal level. In short, the elastic tissue of the lung has with advancing years to be constantly strung up, much as the strings of a musical instrument have to be, for otherwise pulmonary tension would steadily get less and less, there would be a corresponding fall in pulmonary suction, and the vesicles would become puckered and wrinkled and thus encroach upon the vesicular spaces. Hence the progressive increase in thoracic girth and shortening of the neck which takes place after middle life. We may speak of this condition of the lungs as a semi-pathological emphysema, since it is a necessary accompaniment of advancing years. Exactly the same loss of pulmonary elasticity occurs in the pathological variety.

2. The atrophy of the smaller pulmonary blood-vessels which takes place in emphysema causes an increase in the resistance to the flow of blood through the lungs and a diminution in the respiratory area. Consequently, as these vessels atrophy, thereby diminishing the respiratory area and imposing increased work on the right heart, the inspiratory muscles come to the rescue and tend to neutralise these evils by expanding the chest and increasing the mean size of the lungs.

There is thus a twofold reason why the chest should be expanded in emphysema—first, because of the loss of pulmonary elasticity; and secondly, because of the atrophy of the pulmonary blood-vessels.

It will be seen that the enlargement of the chest in emphysema is compensatory and that its essential object is to facilitate the circulation and to prevent the vesicles from encroaching unduly on the air spaces. The enlargement is effected by the preponderating activity on the part of the inspiratory muscles. As a result of this they shorten and fix the chest in the inspiratory position. It is owing to this shortening of the inspiratory muscles that the emphysematous patient is unable to expire adequately. In advanced emphysema the chest is fixed by the shortened inspiratory muscles in a position of super-extraordinary inspiration. This fixation saves these muscles a considerable amount of labour, but it has the disadvantage of rendering expectoration difficult.

I have said that the enlargement of the chest in emphysema is compensatory. No patient with advanced emphysema could live five minutes were his thorax to resume its normal size. I admit that in advanced emphysema the abdominal muscles may be observed to contract vigorously, but I have satisfied myself that this contraction involves mainly the transverse fibres, for the purpose, not of depressing the ribs, but of retracting the anterior abdominal wall and thus thrusting up the diaphragm, which, owing to the loss of pulmonary elasticity, would have little or no expiratory movement.

Heart disease.—In most cases of organic heart disease the heart is enlarged, sometimes enormously, and by so much as it enlarges by so much must the chest enlarge in order to make room for the lungs and enable them to expand to the normal degree. But in serious disease of the heart it is of advantage that the chest should expand even beyond this. When the central pump fails badly the circulation, especially that through the lungs, needs all the help it can get, and to this end the inspiratory muscles are called into extra play in order to secure those circulatory advantages which we have seen to belong to a high degree of pulmonary expansion.[3] This vigorous action of the inspiratory muscles may be observed in all cases of cardiac dyspnœa. In extreme cases the patient sits up in bed; he raises his shoulders and fixes his arms so as to get all the purchase he can for the inspiratory muscles attached to the shoulder girdle. The expiratory muscles, on the other hand, act but slightly, if at all. This feeble action of the expiratory muscles in cardiac dyspnœa is especially noticeable in children in whom the thoracic cage is so pliant that vigorous expiratory effort would subject the heart to a positive pressure; the child with severe cardiac dyspnœa simply dare not expire powerfully. In adult sufferers, in whom the chest is more rigid, the abdominal muscles may sometimes be seen to contract with some vigour, but, as in the case of emphysema, I believe that this contraction involves the transverse fibres chiefly, causing a retraction of the belly rather than a depression of the ribs, and that it occurs essentially for the purpose of driving up the diaphragm.

Pericardial effusion.—As the fluid accumulates in the pericardium the lungs are encroached upon, and the inspiratory muscles come into extra action for the purpose of securing normal pulmonary expansion. In this way normal pulmonary suction is maintained, and the exterior of the heart may, for a time, continue to be subjected to the normal negative pressure. As the effusion increases the chest becomes more and more expanded, not merely to maintain the normal expansion of the lungs but to hyper-expand them, and thus, by augmenting pulmonary suction beyond the normal, to neutralise the tendency of the pericardial effusion to cause a positive pressure round the heart. With the continued increase in the effusion, however, it becomes increasingly difficult to maintain a negative pressure round the heart, and sooner or later the effusion attains a positive pressure when the heart far from being sucked upon from without is actually compressed by the fluid enveloping it.

---

[3] There is yet another reason why the chest should be expanded in cardiac disease. When this leads to pulmonary engorgement the vesicles are encroached upon by dilated capillaries. The evil effects of this are manifestly lessened by full pulmonary expansion.

When the pressure in the pericardium becomes decidedly positive we find great dyspnœa and distress, distension of the veins of the head and neck, and a feeble pulse, the patient dying from arterial anæmia and passive venous engorgement. The only way in which the blood can get into the arteries when the heart is subjected to such a positive pressure is by being driven along its venous course under a decidedly positive pressure; and this I assume to be effected by the diaphragm and abdominal muscles, which, by their vigorous contraction, force the blood along the inferior cava into the right auricle, and by the cervical and neighbouring muscles in the case of the superior veins.

These observations concerning the enlargement of the chest in the dyspnœa of cardiac disease I could make good by reference to a large number of cases observed during a series of years. In cardiac dyspnœa the chest is always in a state of inspiratory expansion.

Spasmodic asthma.—During an asthmatic paroxysm the chest is in a position of full inspiration, and some have, indeed, thought that the attack is due to an inspiratory spasm fixing the chest in this position; but spasm of the inspiratory muscles—I cannot too often insist—is the rule in dyspnœa, no matter how produced, and I have no doubt that in spasmodic asthma it is secondary to the dyspnœa produced by the narrowing of the smaller bronchial tubes, probably by turgescence of their mucous lining. The dyspnœa of the asthmatic paroxysm can be exactly imitated by closing the mouth and compressing the nostrils, so that only a meagre current of air can pass into, and out of, the lungs. It will be found that the chest under these circumstances gradually expands, and eventually assumes the position of complete inspiration—the position, namely, most favourable to the circulation through the lungs and the aeration of the blood. In the dyspnœa which attends the asthmatic paroxysm there is a special reason, over and above those already given, why the chest should assume an expanded position—namely, for the purpose of holding apart the walls of the smaller bronchial tubes, which would otherwise be entirely obliterated by the turgid conditions of their mucous membrane. Did the asthmatic patient not keep his chest expanded he would suffocate. It is somewhat strange that Salter should have failed to realise that the expanded condition of the chest during the asthmatic paroxysm is compensatory.

Croupous pneumonia.—In this disease the chest is always expanded to make up for the diminution of the respiratory surface and the narrowing of the pulmonary vascular bed. There is a further reason for this expansion—i.e., the protection of the inflamed lung: the inflamed portion of the lung being distended by inflammatory products to the size which obtains in full inspiration would be compressed by the chest walls were these latter not pulled out by the inspiratory muscles; and such compression would manifestly add to the pain and distress of the patient.

Catarrhal pneumonia.—The thorax of a child suffering from catarrhal pneumonia or capillary bronchitis (the two diseases are practically identical) is always expanded, notably in the upper part. The upper parts of the lungs undergo the greatest expansion owing to the fact that they are least involved in the disease; the lower portion may, indeed, show areas of collapse. The occurrence of this collapse causes the non-collapsed portion of the lungs to be expanded to a degree which would otherwise be impossible. So greatly, in fact, may the unaffected portion of the lungs be expanded that the vesicles may be stretched beyond the power of immediate recoil; hence after death the excised lungs often maintain this hyper-inflated condition. This I believe to be the pathology of the so-called acute emphysema in children: it is brought about by the forcible action of the inspiratory muscles; the child instinctively utilises to their full extent all the available aveoli by expanding the lungs to their utmost, and inasmuch as large areas of pulmonary tissue are prevented from expanding the remaining portions are subjected to such an extreme degree of stretching that they temporarily lose their normal power of recoil.

Pleural effusion.—As the effusion is poured out the lung tends to relax. To counteract this the inspiratory muscles come into extra play, and often to such good purpose as to maintain some pulmonary suction even when the pleura contains large quantities of fluid. The expansion of the chest on the affected side is thus essentially produced by extra action of the inspiratory muscles; not until the pressure of the effusion becomes very decidedly positive would it be possible for the chest walls to be pushed out by the fluid. In all cases of extensive effusion, causing dyspnœa, the chest, in obedience to our principle, will be found to be expanded on the unaffected side, though not generally quite so much as on the affected side.

Pneumothorax.—The dyspnœa resulting from the pulmonary collapse causes predominant action of the inspiratory muscles, and thus causes the chest to assume the position of extreme inspiration.

Phthisis.—The preponderating action of the inspiratory muscles in dyspnœa is well shown in the case of phthisis, and in spite of the destruction of the pulmonary tissue frequently leads to an increase in the mean size of the thorax in this disease. This increase is apt to be overlooked if the chest be viewed from in front, but if viewed in profile the increase in the sagittal diameter becomes apparent. In point of fact, the thorax does not diminish in size in phthisis unless its walls are drawn in by the contraction of the cicatricial tissue which forms in the lungs. In the first stage of the disease—before the tubercular material breaks down—the chest tends to increase in size from augmented action of the inspiratory muscles in order to compensate for the damaged pulmonary tissue. Indeed, even after cavitation has begun, prior to the formation of contracting fibrous tissue, there is no impediment to the expansion of the chest in phthisis, for the vesicles filled with tubercular and inflammatory products occupy as much space as, if not more space than, healthy vesicles, and the cavities formed by the broken-down tubercle occupy at least as much space as was occupied by the previously normal lung tissue. All that is needful up to this point in order to get hyper-expansion of the chest is a physiological stretching of the unaffected pulmonary tissue. It is only when fibrous tissue has formed and by its contraction has come to occupy less space than was occupied by the normal pulmonary tissue which it has replaced, that any impediment is put in the way of hyper-expansion of the chest. It is manifest that if at this stage of fibrous contraction the volume of the lung in the affected area is to be prevented from diminishing, or to be enabled to increase—and there is often considerable thoracic expansion even at this stage—it can only be by an increase in the size of the air-containing spaces situated in the neighbourhood of the fibrous areas—i.e., the vesicles and bronchial tubes, and the cavities formed by the breaking down of the tubercular deposit.

Naturally the delicate vesicles are the first to yield. As the fibrous tissue begins to contract the tautness of (or "elastic tension" in) the neighbouring vesicles increases. This would happen, even though the affected part of the lung were not in a condition of generalised hyper-expansion from hyper-activity of the inspiratory muscles. As a matter of fact, there is always a tendency to such hyper-expansion in phthisis, in which disease hyper-activity of the inspiratory muscles is constant. There are thus two factors causing an augmentation of vesicular tension in phthisis, fibrous contraction and inspiratory hyper-activity. At first the augmented tension leads to simple dilatation of the stretched vesicles, but, sooner or later, many of them get stretched to the point of rupture, with the production of emphysema often of an extreme degree. If this stretching and rupture of vesicular tissue does not suffice to provide the necessary increase of space, a dilatation of the vomicæ and tubes ensues. The mechanism of this dilatation is as follows: The fibrous tissue, arranged as it is for the most part concentrically round both the one and the other, tends by its contraction to reduce their size. When it is strictly localised, such reduction in size does in point of fact occur. It has, however, to be remembered that the fibrous tissue which forms in pulmonary phthisis stretches right across the lung from pleura to pleura, and that, owing to the high degree of rigidity of the chest walls, the effect of its contraction *en bloc* is to increase the tension through all its parts and thus to exert a tug operating for the most part at right angles to the walls of the bronchial tubes and vomicæ.

Were the chest walls highly yieldable the effect of this cicatricial contraction would be to pull them in from the very first and to encroach upon all the air-containing spaces of the affected portion of lung—vomicæ, bronchi, and vesicles. Not only, however, are the chest walls for some time prevented from yielding by the powerfully acting inspiratory muscles: they are actually pulled outwards by them, the thorax being thereby expanded. Thus a struggle ensues between the inspiratory muscles, on the one hand, and the contracting cicatricial tissue on the other, and only when the tension produced by the latter gains the upper hand does the damaged lung fail to maintain its expansion above the mean. It is not until this stage is reached that the chest walls begin to be pulled inwards, and how great must be the tug which the contracting cicatricial tissue exerts upon them is evident when we consider the great strength of the inspiratory muscles. It is no wonder that the bronchial tubes and vomicæ should be expanded by it. The latter, as might be expected, tend to assume a spherical shape, that, namely, which gives the maximum cubical contents.

We thus see that the emphysema and bronchiectasis observed in fibroid phthisis are in large measure brought about by hyperactivity of the inspiratory muscles, and that this is also in large degree responsible for the spherical shape which the vomicæ tend to assume. It should here be observed that the tension in a tubercular lung may vary considerably in different parts of it. Suppose, e.g., the upper part of one lung has reached the stage of cicatricial contraction, the lower portion being unaffected, the tension in the former will be greatly augmented, while that in the latter may be scarcely affected at all.

(*To be concluded.*)

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE COLLEGE AND THE UNIVERSITY OF LONDON.

AN extraordinary Comitia was held on March 14th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following communications were received:—1. From the delegates of the Clarendon Press, asking permission of the College to photograph the portraits of Sir Thomas Browne, Sydenham, and Harvey for the book entitled "Historical Portraits." The request was granted. 2. From the Privy Council, enclosing a further notice of the International Congress of Obstetrics and Gynæcology to be held at St. Petersburg. The President nominated Dr. Amand Routh as representative of the College. 3. From the Home Office, enclosing a letter from the Danish Legation in which certain inquiries were made respecting the practice of massage. It was resolved to appoint a committee to consider the communication, and the President nominated Dr. S. J. Sharkey, Dr. J. A. Ormerod, Dr. F. E. Batten, Dr. Donald Hood, and Dr. Lewis Jones.

The report, dated Feb. 15th, of the delegates appointed by the Royal College of Physicians of London and the Royal College of Surgeons of England in 1908, to consider a scheme for establishing a system of Conjoint examinations in accordance with Statute 123 of the University of London, came up for debate.

This report recommended that the Royal Colleges should jointly give evidence before the Royal Commission sitting to inquire into the working of the reconstructed University, and suggested that witnesses should be appointed by each College to give evidence: 1. On the disability under which the London medical student labours by not being able to obtain a degree of M.D. on such terms as exist in other universities in the United Kingdom. 2. On the desirability of an association between the Royal Colleges and the University in a scheme for granting degrees of M.B., B.S., and M.D., with the diplomas of L.R.C.P. and M.R.C.S. for students who have completed at least four of the five years of professional study at a London medical school, and in so far as such degrees are concerned the establishment of a coördinated medical faculty in London. 3. On the advantages to be gained by adopting a scheme such as the following, which has been drawn up by the delegates as a basis of negotiation:—

SCHEME.

Matriculation.

PASS DEGREE AND L.R.C.P. & M.R.C.S. for Students who shall complete not less than 4 years of Professional study at London Medical Schools and Hospitals.	HONOURS DEGREE (with or without L.R.C.P. & M.R.C.S.) for Students from any Medica School and Hospital, i.e., the Degree as granted at the presen time.
The Matriculation Examination of London or equivalent accepted by the University together with such other Examinations as may be agreed upon. Candidates who pass a Preliminary Examination recognised only by the Royal Colleges shall be eligible for L.R.C.P. and M.R.C.S. alone, but arrangements shall be made for such Candidates at a later stage of their curriculum to be allowed, by passing in certain special subjects of general education, to be transferred from Conjoint to Pass Degree Candidates.	Matriculation Examination, or equivalent accepted by the University.
Preliminary Scientific Examination.	
First Conjoint Examination in Chemistry, Physics, and Biology, conducted by Conjoint Examiners with University Assessors.	First Examination for Medical Degrees (Inorganic Chemistry, Physics, and Biology). To be conducted by University Examiners only.
Candidates must be educated at Medical Schools or Institutions either in London or elsewhere, recognised by the University or the Royal Colleges.	No conditions as to place of study.
Intermediate M.B., B.S. Examination.	
Second Conjoint Examination in Anatomy, Physiology, and Practical Pharmacy, conducted by Conjoint Examiners with University Assessors.	Second Examination for Medical Degrees, Part I. (Organic and Applied Chemistry), Part II., Anatomy, Physiology, and Pharmacology, conducted by University Examiners only.
Final M.B., B.S. Examination.	
Final Conjoint Examination in Medicine, Pathology, Forensic Medicine, Hygiene, Surgery, Midwifery, and Diseases of Women, conducted by Conjoint Examiners with University Assessors.	Third M.B., B.S. Examination in Medicine, Pathology, Forensic Medicine, Hygiene, Surgery, Midwifery, and Diseases of Women, conducted by University Examiners only.

[NOTE.—Candidates for the Honours Degree who desire to take also the Diplomas of L.R.C.P. and M.R.C.S. may pass the Final Examination for the Pass Degrees and Diplomas and shall undergo such further Examination for the Honours Degree as the University may determine.]

M.D.

Examination conducted by, or Thesis approved by, a Board of Examiners appointed jointly by the University and the Royal Colleges.	Additional Examination conducted by University Examiners or original research. (Same as at present.)

Such conditions of admission to the Degree and Diplomas, after Examination as the statutes of each Body may require, shall remain.

If thought desirable by the University, the scheme shall permit of the same papers and the same examination machinery being utilised for the Pass and Honours Degrees, with such a higher standard of marks and additional conditions as the University may determine for the Honours Degree.

4, 5, and 6. On the general desirability of establishing a wider system of clinical teaching, of endowing medical teaching, and of organising medical research in London. 7. On the necessity of the Royal Colleges preserving their autonomy in every other respect.

Sir WILLIAM ALLCHIN (Senior Censor) proposed the adoption of the report. He said that the object of the report was to provide facilities for students in London to obtain a degree more readily than has hitherto been the case. He gave the history of previous attempts to meet the situation and said that the report now before the College consisted of proposals which had been previously before the College and which had received their sanction. The College had taken up a disinterested position, for the proposals would not be to the pecuniary advantage of the Colleges, which were working for the public good. The main principle that there should be an association between the College and the University, had been accepted,[1] and the delegates had been instructed to make suggestions as to the evidence to be given before the Royal Commission; and he contrasted the terms of reference of the latest Royal Commission with those of the previous Commissions, and thought that the decision of the present Commission would represent a most thorough inquiry, and therefore the opportunity now before the Royal College of Physicians to express their views was a valuable one. The report was the basis on which the representatives were recommended to give evidence before the Commission. There was no intention of offering criticism on the procedure of the University itself, but the main point was to give effect to what was best for the medical student in London. Sir William Allchin then considered the paragraphs of the report *seriatim*, reminding his hearers that in every centre of teaching save London there was a university. The third heading, under which it was proposed that evidence should be given before the Royal Commission, had been prepared before the Commission was appointed. He particularly referred to the fact that nothing in that scheme conferred any disadvantage on provincial students. There would be some changes as the result of the Commission, and he asked if it were not desirable that the Colleges should take part in the movement, or otherwise their position would deteriorate.

Dr. FREDERICK TAYLOR seconded the adoption of the report. He asked why the London student did not obtain the London degree, and said that the standard of the degree was the bar, for it was certainly higher than that of the Conjoint diploma. The Preliminary Scientific and the first M.B. examinations had a higher standard. A degree was clearly required of the same standard as that of the provincial universities.

Sir THOMAS BARLOW said the subject was one in which there had been a wide divergence of opinion in the College and the Faculty of Medicine of the University. The external side of the University presented a great difficulty. He thought that the provisions for the external student were unnecessary now that there were so many provincial universities. The second difficulty was that the teachers of the schools were not properly represented on the Senate of the University. The whole machinery had proved too complex and cumbrous. The Medical Faculty had been placed in a difficulty, for their only power had been to elect representatives to the Senate; all the rest had been permissive. The Faculty, he maintained, should be the body regulating the teaching of medicine in the University of London. He read the following proposals of the Faculty (four in number[2]) which the Faculty had made to the Senate:—

1. That the medical degrees of the University of London should be open only to those students who are students in the schools of the University.
2. That all medical questions affecting the University should be submitted to some such body as the Faculty Board recommended by resolution of the Faculty of Medicine on March 26th, 1909.
3. That all Boards of Studies in medical subjects shall be committees of the Faculty and appointed by the Faculty after receiving a report from the Faculty Board.
4. That the Faculty Board shall report to a body of the character of the present Academic Council, who shall have executive power in all academic matters not involving finance.

If the Faculty had the requisite powers such questions as they were debating would come before the teachers more simply than they would under the complex scheme suggested in the delegates' report. The teachers must keep the matters in their hands and allow the College to carry on the work which it has done for generations. The difficulties of the London matriculation had been partially overcome by accepting certain equivalents. Modifications had also been made in the Preliminary Scientific Examinations, and he thought that the College would not be acting properly in discouraging scientific knowledge. It would be folly to suppose that every student entering in London should take the University degree. A diploma must be granted, and therefore he pleaded again that the College should continue on its own lines. He moved an amendment to the effect that the College heartily thanks the delegates for the trouble they had taken, but that the whole matter should be referred back to a large committee of the College for consideration and report.

Dr. J. ROSE BRADFORD seconded the amendment. He wanted the question looked at from rather a larger standpoint. He would abolish the external side from all faculties of the university. In medicine this side was a sham. Owing to the existence of the provincial universities there was no place for the external student. The ideals of the external side were radically opposed to those of the internal side and no compromise was possible. He thought the report did not meet the fundamental difficulty—namely, the higher standard of the University—and he could not understand how it could be overcome by holding examinations with assessors. The curriculum was the rock upon which the two views split, and the report did not adequately meet this difficulty.

Dr. W. P. HERRINGHAM spoke as a member of the Faculty of Medicine of the University of London. He said that the second clause of the report did not satisfy the high aspirations that he had formed. He thought that the Faculty of the University should control the course of study and not be overruled by any other body. He argued that the main difficulty was one of standard, and thought that the abolition of the external student would help to remedy many of the difficulties that had been mentioned.

Dr. E. H. STARLING said that the Colleges must act in unison with the members of the Faculty of Medicine, as several of these members were Fellows of the College. He wanted to give the London students a good degree, but not a cheap one, and he did not think the report should be construed as affording a cheap degree. The main thing, therefore, was the maintenance of a high standard, and he hoped that the representatives of the College would strongly support the members of the Faculty of Medicine here.

Dr. NORMAN MOORE said that no conclusion should be arrived at until the question had been considered by a committee. He suggested that Sir Thomas Barlow should alter his amendment into one proposing that the matter should be referred to such a committee, and that no further steps should be taken until that committee had issued its report. He strongly objected to admitting assessors to the examinations of the College.

Sir THOMAS BARLOW agreed to the modification of the amendment.

Dr. E. IVENS SPRIGGS strongly supported the resolution.

The PRESIDENT said that the principal idea had been to provide a degree for the genuine London student, who should be able to, but could not, obtain such a degree after four years' study in the metropolis. It was not for this College to suggest to the University that the external side should be abolished—that was a suggestion that must come from the University itself; but he hoped that the College would place its views in a very decided manner before the Commission.

Sir WILLIAM ALLCHIN, although agreeing in many particulars with Sir Thomas Barlow and Dr. Rose Bradford, reminded the College that the delegates had to approach the question from another side—namely, the reference given to the delegates by the College as to the association which should exist between the Royal Colleges and the University.

The PRESIDENT then said that the amendment as altered was:—

That the report dated Feb. 5th, 1910, be referred to a large committee of the College for report to a future meeting of the College on the whole subject.

This was carried by a large majority, and subsequently put and carried as a substantive resolution. The President was authorised to nominate the committee.

The PRESIDENT then dissolved the Comitia.

HOUSING IN RELATION TO ENDEMIC DISEASE IN WALES.

> "Cain rose up against Abel his brother and slew him ...... and Cain went out from the presence of the Lord ...... and he builded a city."

HOW much may be implied in the conjunction of being the first murderer and the first to build a city can only be fully appreciated by those acquainted with the statistics of the slum dweller. The conjunction need not be pressed too hard, but common observation associates a high death-rate with undue crowding of habitations, and Dr. Farr's discovery, that length of life and density of population bear to each other a direct statistical relation, is still an accepted truth, withal it may not be the whole truth. Recent returns from London County Council dwellings show that in the most crowded quarters of London the death-rate can be reduced to 8 per 1000. This must be qualified by the fact that the occupants of Council dwellings are, partially, selected lives. Certain grim facts which are to follow show, however, that the condition of the housing even when diffused may be responsible for much avoidable disease. This hardly needs stating, it is true, and it is not often that it is so obvious as in Wales. The official returns relating to tuberculous phthisis and pulmonary tuberculosis, cancer, and diphtheria indicate a state of affairs that is somewhat alarming. After due allowance is made for peculiarities of dietary, employment, climate, and other suggested contributory causes, the conclusion becomes quite inevitable that the state of housing in Wales calls for a careful inquiry and prompt steps to remedy.

---

[1] See the Annual Report of the Council of the College published in THE LANCET, Oct. 23rd, 1909, p. 1234.

[2] THE LANCET, Nov. 6th, 1909, p. 1379.

Among the most obvious indications are the high mortality rates among infants. Glamorganshire doubles that of Oxfordshire. Allowing for the high birth-rate in the former and different employment conditions, the excess is serious. Since 1880 the infantile death-rate has declined substantially in all the counties of England and Wales with the exception of *five* out of the six counties in South Wales and in Northumberland. Children of school age show also that something is amiss. Cardiganshire has 106 schools and 10,000 scholars, of whom Mr. Walter E. L. Davies states that 75 per cent. have previous history of disease, and he adds: "The houses in large numbers of cases were damp, dilapidated, ill-ventilated, and insanitary. Despite these conditions the children were particularly bright."

The average school attendance in England is 88·11 per cent. of those on the registers and in Wales 85. As there are 420,000 on the registers in Wales this shows over 12,000 as failing attendance for some cause not applicable to England. Carrying the inquiry into the returns which include adults, we find in Carnarvonshire that the ratios of deaths for the same population were: from phthisis as 150 is to 100 for England and Wales, from cancer as 120 is to 100 for England and Wales; and another Welsh county shows deaths from phthisis as 196 is to 100 for England and Wales, from cancer as 141 is to 100 for England and Wales; while yet another Welsh county gives (1905) the ratio of 178 deaths from phthisis (females) to 100 in England and Wales, 157 deaths from cancer (males and females) to 100 in England and Wales, and 206 deaths from diphtheria (males and females) to 100 in England and Wales.

Dr. T. H. C. Stevenson in his report (1909) to the Registrar-General states, in reference to the following table, that "of the 15 counties suffering the highest mortality from phthisis, not fewer than seven are Welsh; and that among these Cardiganshire experienced a death-rate which is nearly double the *average* for England and Wales."

—	Rate per million.		
	Persons.	Males.	Females.
England and Wales	1156	1362	963
Cardiganshire	2270	2419	2130
Merionethshire	1576	1699	1461
Carmarthenshire	1574	1475	1668
Carnarvonshire	1533	1618	1491
Pembrokeshire	1413	1443	1385
LONDON	1386	1808	992
Northumberland	1363	1488	1246
Anglesey	1335	1190	1472
Lancashire	1323	1602	1061
Cornwall	1277	1642	936
Montgomeryshire	1240	1352	1135
Hampshire	1218	1493	961
Warwickshire	1192	1560	848
Durham	1180	1201	1159
Suffolk	1177	1263	1096

There appears to be substantial reason for attributing the state of affairs just disclosed as due very largely to the housing conditions. The population of Wales has increased 87 per cent. in 50 years, while the increase in dwellings is estimated to be under 70 per cent. For a population of under 2,000,000 (including the summer invasion) there are, by last census, but 244,000 dwellings. Of these, 120,000 are one-, two-, three-, and four-roomed tenements. Glamorganshire (not including Cardiff or Swansea) has 7629 two-roomed tenements, of which 1172 were each occupied by *four* persons; that is, every sixth of these humbler-class dwellings has four persons occupying a two-roomed tenement. According to the Registrar-General's standard of overcrowding Pembrokeshire shows 9·72 to 4·91 per cent. for Glamorganshire.

Mr. J. D. Lloyd (Chirk), at an inquiry in 1894, referring to the fact that North Wales was the black spot in regard to phthisis on the map of England, said, "It was really due to overcrowding, ignorance of sanitation, and bad drainage." These statistics, together with visual and olfactory observation, show that defective housing was an important factor in 1908 in killing off over 4200 of our fellow countrymen and women in Wales from the diseases of phthisis, cancer, and diphtheria, the gravity of which may be further gauged from the fact that in the ten years ending 1908 there died in Wales from diphtheria 26,029 and 163,032 from phthisis, and that of the latter 21,676 were in Cardiganshire and 15,533 in Carmarthenshire.

The economic loss from such results as the foregoing must be enormous, since for every death many must be ailing, and the virulence of the diseases is further aggravated by insanitary surroundings. The latest Local Government Board returns show an almost complete neglect in Wales of the facilities given by the Housing Act (1900), where the obligation is obvious. Much may be expected from the Housing and Town Planning Act in promoting greater enterprise on the part of local authorities which would stimulate private and associated efforts—such as have succeeded so well in England—in the provision of better housing for the people of Wales. The Welsh Housing Association referred to in THE LANCET of Jan. 1st (p. 44) should help forward the educational aspect of the question, but, *qua* Portia:—

> "If to do were as easy as to know what good to do, chapels had been churches, and poor men's cottages princes' palaces."

W. ST.J. H.

MEDICINE AND THE LAW.

The Poor Man's Lawyer Movement and the Medical Profession.

NOT the least interesting evidence given before the Royal Commission on Divorce has been that of members of the legal profession, who in connexion with the University settlements in the East-end of London have gained experience of their subject as poor men's lawyers. The witnesses in question have brought into prominence the benevolent work undertaken and carried on without ostentation and without reward during recent years by them and their colleagues with a view to placing sound legal advice, free from any potentiality of subsequent profit to the giver, within the reach of the poorest classes. It has been suggested that the medical profession might take an important part in the movement by supplying advice as distinct from treatment in cases of a medico-legal character. Obviously such advice might be useful, not only in cases in which questions of compensation for injuries are raised, but in many others, as, for example, in divorce, the subject of the Commission's inquiry. The medical profession, however, already does vast masses of work gratuitously as well as of work inadequately paid for among the poor, and the difficulty which would obstruct its members in undertaking to any considerable extent functions of a purely medico-legal character as a work of charity would be such as do not affect the poor man's lawyer. The latter can do much by giving advice, although no doubt he could do more if he could appear for his client in courts of law. From this, however, he is deterred by professional etiquette and by the fear lest it should be suggested that he sought self-advertisement. The medical man, in like manner, could hardly hold himself out as an expert witness ready to appear in court in support of one of the parties to litigation, but in his case the advice alone would not be likely to be of substantial service. What would be wanted of him would be that, being in the position to give a trustworthy opinion upon certain physical conditions, he should come forward and establish his opinion as a witness in cases in which the evidence of the hospital surgeon or of the paid medical man might be unobtainable or in which their testimony might be usefully supplemented and confirmed. To do this would not only cause questions of medical ethics to be raised but would involve a considerable tax, through loss of time, upon those undertaking to do it.

An Impudent Fraud.

At the recent Durham assizes Adam Melrose Porteous pleaded guilty to obtaining by false pretences a sum of £81 and food from the visiting committee of the Durham County Asylum in the following circumstances. A. M. Porteous having at one time entered as a medical student at Edinburgh, and having since qualified as a member of the Veterinary Surgeons' Institute at Edinburgh, practised for some time as a veterinary surgeon at Plumstead, describing himself at the same time on his door-plate as Dr. Porteous, and practising medicine under that title upon human patients. In 1907, counsel informed the court, he made an attempt to get his name inserted in the Medical Directory, accompanied by an imposing list of medical degrees, to none of which he was entitled. The vigilance of the editor of the Directory, however, detected the deceit, and the prisoner merely repeated his claim to the titles put forward and expressed indifference as to their appearing with his name in the volume. In 1908, however, he applied for the post of surgeon on board a ship and assumed in so doing the names of Mr. William James Porteous, a registered medical practitioner. In this application he was unsuccessful, but, still personating Mr. W. J. Porteous, and armed with forged testimonials, he was afterwards accepted as locum-tenent during the absence of the medical superintendent at the Durham County Asylum. He occupied the post without detection until August, 1908, and it was not until after he had left the asylum that the fraud was discovered. He was at length arrested after his return from serving as a ship's surgeon, in which capacity he appears also to have been engaged between the time of his committal and his trial. Mr. Justice Ridley passed a sentence of six months' imprisonment in the second division, observing that he would have made it a heavier one if it had turned out that the prisoner had been ignorant of the duties which he undertook to perform. This reason for a light sentence on such an occasion hardly seems adequate. The fact that the visiting committee did not have their attention called to any proof of such ignorance does not show that none existed, and the dangers which have been incurred by helpless persons are obvious.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 17th, 1832.

ON THE DISINFECTING POWERS OF HEAT.

BY WILLIAM WALLACE, *Esq.*, *Surgeon*, *M.R.I.A.*, *Dublin.*

To the Editor of THE LANCET.

SIR,—It is more than twelve years since a series of experiments were instituted and performed by me, with the view of ascertaining the power of heated air, and of many other agents, to destroy contagion. These experiments, and their results, were made known at the time in my lectures, and in conversations with professional friends. The attention of the General Board of Health of this city was also drawn to the subject by me nearly ten years ago, as will appear from the following letter, written at a time when contagious fever prevailed most extensively in Ireland:—

October 11, 1822.

"Sir,—At this moment, when fever is causing such devastation in some parts of this country, I feel it to be my duty to request, through you, the attention of the "General Board of Health" to the apparatus which I have constructed for destroying any contagion that may exist in the bed-clothes, or wearing apparel, of fever patients, upon the principle of exposing them to heated air of any temperature, either alone or saturated with aqueous vapour, or any gaseous agent. I shall not occupy your time by any details respecting its mechanism; this will be sufficiently understood from the drawings* which accompany this letter, and from an examination of a model, which I shall have the honour of sending you for the inspection of the Board; and as the importance and utility of such an instrument will at once appear evident to you, whose attention has been for so many years and with such advantage directed to contagious fever, I shall not further trespass than by enumerating a few of the benefits which may be obtained from the employment of this apparatus.

1. It will afford the means of disinfecting articles which cannot be conveniently washed, such as hats, shoes, many woollens, and which it would therefore be often necessary to destroy.

2. It will greatly diminish, or altogether remove, the danger necessarily attendant upon the process of disinfecting clothes by washing; by often enabling us to dispense with washing, or by destroying the virulence of the contagion, before the clothes are submitted to this process.

3. It would cause a very considerable reduction in the expenditure of fever institutions by lessening the quantity of washing.

4. It can be immediately placed in any situation in which it may be required, being portable.

5. This apparatus, by a little addition, forms a most perfect instrument for fumigating partially or generally the surface of patients, or for administering any possible description of vapour-bath; its being applicable to these purposes must necessarily increase its utility in hospitals.

6. It is scarcely necessary to observe, how perfectly it will afford the means of destroying insects in wearing apparel or bed-clothes, and how useful it would therefore be in prisons and poor-houses. I have the honour to be, your most obedient servant,

W. WALLACE.

To Fr. Barker, Esq., M.D.,
Secretary to the General Board of Health,
Dublin."

To the above letter I received the following answer:—

"February 1, 1823.

"Sir,—I am directed to forward to you the following resolution of the General Board of Health, passed at a meeting held on February 1, 1823:—

"Resolved, That the instructions under which we act, as a Board of Health, do not authorise us particularly to notice Mr. Wallace's apparatus for the application of steam, gases, &c., as a means of curing disease, or destroying infection, but we feel ourselves bound to acknowledge that it has been seen and examined by several of the members of this Board, who have expressed a very favourable opinion of its utility and fitness for the purposes to which it is applied. I have the honour to be, Sir,

Your very obedient servant,
FR. BARKER,
Secretary to the General Board of Health.
To W. Wallace, Esq., &c."

---

* These interesting drawings were reproduced in the same number of THE LANCET from which the above excerpt is transcribed. *Vide* also "Looking Back" in THE LANCET of Jan. 22nd, 1910, p. 261, referring to the classic experiments of Dr. Henry of Manchester on the "Disinfecting Powers of Increased Temperatures."

Public Health.

COLONY OF HONG-KONG: PUBLIC HEALTH REPORT FOR 1908.

A JOINT report on the public health of Hong-Kong in the year 1908 has been issued by Dr. J. M. Atkinson and Dr. W. W. Pearse, respectively the principal civil medical officer and the medical officer of health of the colony.

For administrative purposes that portion of the colony which is under the jurisdiction of the sanitary board consists of the Island of Hong-Kong, together with a section of the "new territories" known as New Kowloon. The population of the colony is estimated at 336,000, of whom about 13,000 are either Europeans or Americans, the rest consisting of Chinese, Malays, East Indians, and Africans. Of the white population 6838 belong either to the army or the navy, the remainder being civilians. At the census of 1906 not less than 70·1 per cent. of the inhabitants, exclusive of the army and navy, were male adults; at the 1901 census the percentage had been 72·6, so that the proportion of females in the Hong-Kong population has increased in the last few years.

The birth-rate among the non-Chinese population was 14·43 per 1000, whilst among the Chinese population it did not exceed 6·24 per 1000. But the registered total of Chinese births does not even approximately represent the number that have actually occurred; for it is known that few, if any, of the births of infants dying within the first month of life have been registered at all. On this account the large number of infants at this early age which are found dead or dying in the streets, as well as those brought to the convents in a dying condition, are assumed to have been born in the colony but not registered. In order to arrive at something approaching a true birth-rate these are added to the registered births, but even then the birth-rate (6·24 per 1000) is believed to be far below the truth.

The detailed public health work of Hong-Kong is performed for the most part by sanitary inspectors charged with definite duties of disinfection and with the carrying out of special measures for the suppression of plague; but in certain instances these duties are discharged by police officers acting in their respective districts. The health of the inhabitants of Hong-Kong is under the care of medical officers of exceptionally high qualification. Not only are they in most cases graduates of British universities, but many of them are specially qualified in sanitary science, whilst two of them hold in addition the Cambridge diploma in tropical medicine and public health. The deaths in the year 1908 numbered 9271, of which about a tenth part were due to plague. The Chinese community died at the annual rate of 28·4 per 1000 living, and the non-Chinese community at the rate of 14·8 per 1000. The causes of mortality are set forth in the report and particulars are given of the ages at death and of the chief diseases causing it; but the disease groupings adopted in the tables hardly admit of comparison with those of the mother country. Among the Chinese tuberculous phthisis accounts for a death-rate of 2·3 per 1000, and "respiratory disease" for a rate of 7·8 per 1000. Coincidently with the establishment of appropriate measures considerable diminution in the fatality of malaria has been observed. There was a recrudescence of plague during 1908, the total attacks amounting to 1073 with 986 deaths. The special recommendations of the Indian Plague Commission for dealing with this disease have been carried out hitherto with encouraging results. Of Asiatic cholera 56 cases occurred, all but 3 of which were among the Chinese. All the Chinese cases and one of the others ended fatally. The cases of enteric fever numbered 38, being only half as numerous as in the preceding year. The source of infection in this disease is frequently traced to the eating of raw vegetables, salads, &c., which in China are always manured with diluted human excreta. Oysters also should be looked upon with suspicion, and should never be eaten uncooked. Both diphtheria and puerperal fever appear to assume an exceptionally fatal form in Hong-Kong, 12 out of 14 native patients suffering from the latter disease, and all the 8 native patients suffering from the former disease having died during the year.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8288 births and 4361 deaths were registered during the week ending March 12th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 17·0 to 14·5 per 1000, further fell to 13·6 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 15·3 per 1000; the mean rate in London during the same period was also equal to 15·3. The lowest reported annual rates of mortality in the 76 towns last week were 4·9 in King's Norton, 7·5 in Tottenham, 7·8 in Warrington, and 8·2 in Leyton; the rates in the other towns ranged upwards, however, to 19·2 in Coventry and in Birkenhead, 19·4 in Stockport, 21·6 in Swansea, and 23·3 in Stockton. In London the recorded death-rate last week did not exceed 13·4 per 1000. The 4361 deaths registered in the 76 towns last week showed a further decline of 288 from the numbers returned in recent weeks, and included 289 which were referred to the principal epidemic diseases, against 266 and 328 in the two preceding weeks; of these 289 deaths, 122 resulted from whooping-cough, 45 from measles, 37 from diarrhœa, 34 from scarlet fever, 32 from diphtheria, and 19 from enteric fever, but not 1 from small-pox. The mean annual rate of mortality in the 76 towns last week from these epidemic diseases was equal to 0·9 per 1000, against 0·8 and 1·0 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Brighton, Tottenham, Southampton, Norwich, Halifax, Wolverhampton, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·0 in Hull and in Stockport, 2·3 in Hastings, 2·8 in Burton-on-Trent, and 3·9 in Burnley. The 122 fatal cases of whooping-cough in the 76 towns last week showed a further slight increase upon the numbers in the two preceding weeks, and caused annual death-rates equal to 1·3 in West Hartlepool, 1·6 in Barrow-in-Furness, 2·3 in Hastings, and 2·8 in Burton-on-Trent. The 45 deaths from measles, however, showed a decline of 43 from the number in the previous week; the highest death-rates from this disease last week were 1·5 in Hanley, in West Bromwich, and in Burnley. The fatal cases of scarlet fever, which had been 22, 32, and 29 in the three preceding weeks, rose again to 34 last week, of which 9 occurred in London, 4 in Liverpool, 3 in Coventry and in Manchester, and 2 in Leicester. The 37 deaths attributed to diarrhœa differed but slightly from the numbers in recent weeks, but included 3 in Middlesbrough. The 32 deaths from diphtheria showed a decline of 18 from the number in the previous week, but included 10 in London and its suburban districts, 3 both in Burnley and in Hull, and 2 each in Bristol and in Birmingham. The deaths referred to enteric fever, which had been but 14 and 17 in the two preceding weeks, further increased to 19 last week, of which 2 occurred both in Preston and in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had declined in the 21 preceding weeks from 2819 to 1766, had further fallen to 1754 on Saturday last; 190 new cases of this disease were admitted to these hospitals during last week, against 193 and 211 in the two preceding weeks. The Metropolitan Asylums Hospitals contained no case of small-pox on Saturday last. Of the 1254 deaths registered in London last week, 279 were referred to pneumonia and other diseases of the respiratory system, against numbers declining steadily from 425 to 290 in the four preceding weeks; these 279 deaths last week were 164 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 45, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death last week were duly certified in Leeds, Sheffield, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Salford, and in 49 other smaller towns; the 45 uncertified causes of death in the 76 towns last week included 11 in Birmingham, and 5 each in Manchester, Liverpool, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 865 births and 622 deaths were registered during the week ending March 12th. The annual rate of mortality in these towns, which had been 16·2 and 16·3 per 1000 in the two preceding weeks, further rose to 17·2 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 17·7 per 1000, and exceeded by 2·4 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 11·7 and 14·6 in Paisley and Aberdeen, to 19·6 in Edinburgh and 24·8 in Greenock. The 622 deaths from all causes in the eight towns last week exceeded the number in the previous week by 32, and included 82 which were referred to the principal epidemic diseases, against 79 in each of the two preceding weeks. These 82 deaths were equal to an annual rate of 2·3 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. These 82 deaths in the Scotch towns last week included 46 from measles, 12 from whooping-cough, 12 from diarrhœa, 5 from scarlet fever, 5 from diphtheria, and 2 from "fever," but not one from small-pox. The 46 fatal cases of measles in the eight towns showed an increase of 6 upon the number in the previous week, and included 24 in Glasgow, 11 in Greenock, 5 in Leith, and 3 both in Edinburgh and in Dundee. The deaths from whooping-cough, which had been but 8 and 2 in the two previous weeks, rose last week to 12, of which 5 occurred in Glasgow, and 2 each in Edinburgh, Dundee, and Greenock. The 12 deaths attributed to diarrhœa were within 2 of the number in the previous week. The 5 fatal cases of scarlet fever corresponded with the number in the previous week, and included 2 both in Glasgow and in Dundee. Two of the 5 deaths from diphtheria, showing a decrease of 7 from the number in the previous week, occurred in Aberdeen. The deaths referred to "fever," which had been six in each of the two preceding weeks, declined to 2, and included 1 each in Glasgow and in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory system, which had been 97 and 114 in the two preceding weeks, declined again to 107 last week, and were 66 below the number returned in the corresponding week of last year. The causes of 21, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 608 births and 482 deaths were registered during the week ending March 12th. The mean annual rate of mortality in these towns, which had been equal to 22·8 and 22·4 per 1000 in the two preceding weeks, further declined to 21·8 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Irish towns averaged 22·3 per 1000, whereas the mean rate during the same period did not exceed 15·3 in the 76 largest English towns and 17·7 in the eight principal Scotch towns. The annual death-rate last week was equal to 24·5 in Dublin, 21·6 in Belfast, 20·5 in Cork, 18·0 in Londonderry, 15·0 in Limerick, and 27·3 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 18·9 per 1000. The 482 deaths from all causes in the 22 town districts last week showed a further decline of 13 from the numbers in the two preceding weeks, and included 28 which were referred to the principal epidemic diseases, against 28 and 30 in the two previous weeks; these 20 deaths were equal to an annual rate of 1·3 per 1000; in the 76 English towns the mean rate last week from the same diseases did not exceed 0·9 per 1000, while in the eight Scotch towns it was equal to 2·3. The 28 deaths from these diseases in the Irish towns last week included 15 from whooping-cough, 8 from diarrhœa, 2 from "fever," and one from diphtheria, but not one from scarlet fever or from small-pox. The fatal cases of whooping-cough, which had been 17 and 20 in the two preceding weeks, declined to 15 last week, of which 12 occurred in Belfast and 2 in Dublin. The 8 deaths attributed to diarrhœa included 3 in Dublin and 2 both in Belfast and in Londonderry. The 2 fatal cases of measles also occurred in Belfast and Londonderry; a death from typhus was returned in Waterford, 1 from enteric fever in Belfast, and 1 from diphtheria in Dublin. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 146 and 118 in the two preceding weeks, further declined last week to 113. The causes of 24, or 5·0 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent., and in the eight principal Scotch towns it was equal to 3·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: J. A. Keogh to the *Cochrane*, L. Bidwell to the *Vanguard*, J. C. Wood to the *Natal*, and J. C. Durston to the *Cyclops*. Staff-Surgeons: F. J. L. P. McKenna to the *Leander*, additional, for the *Tyne*, on recommissioning; E. T. P. Eames to the *Cressy;* A. R. H. Skey to the *Juno;* W. R. Trythall to the *Isis;* F. F. Lobb and J. Boyan to the *Victory*, additional, for disposal; and E. O. B. Carbery to the *Vernon*. Surgeons: E. M. W. Hearn to the *Victory*, additional, for disposal; E. R. L. Thomas to the *Argonaut;* G. E. Hamilton and T. E. Blunt to the *Vivid*, additional; and W. C. B. Smith to the *Wildfire* and H. S. Turner to the *Vivid*, both additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert Doveton Hodson has been appointed medical officer in charge of troops at Trowbridge (Wilts). Lieutenant-Colonel F. S. Heuston, C.M.G., has been selected for increased pay under Article 317 of the Royal Warrant. Lieutenant-Colonel E. P. Nichols from Jullunder has been appointed to the medical charge of troops at Jersey. Lieutenant-Colonel G. Wilson from Mooltan has been posted to the Eastern Command. Brevet-Colonel Sir William B. Leishman has been reappointed professor of pathology at the Royal Army Medical College, Millbank, with effect from Feb. 1st. Lieutenant-Colonel R. Caldwell has joined at Wynberg. Major H. B. Scott has been posted to the London District for duty. Major J. M. Buist, from Wynberg, has been appointed to the Southern Command for duty. Major M. M. Rattray, from Bangalore, has been transferred to the home establishment. Major E. W. W. Cochrane has embarked for Bermuda. Captain A. F. Carlyon has arrived home from West Africa. Captain P. J. Hanafin, from Wynberg, has been posted to the Eastern Command. Captain H. C. R. Hime has embarked for India. Captain E. G. R. Lithgow, on arrival at Aden from India, has been appointed for duty at the station hospital and as Staff-Surgeon steamer *Point*. Lieutenant F. Worthington, on return from special duty in Somaliland, has been posted to the Cork District for duty. Lieutenant G. Petit, Lieutenant F. S. Stuart, Lieutenant J. B. Hanafin, Lieutenant H. Gibson, Lieutenant G. A. T. Conyngham, and Lieutenant B. Varvill have embarked for India. Lieutenant A. Fortescue, attached to the station hospital, Cawnpore, has been appointed to the medical charge of the Cawnpore Harness and Saddlery Factory and also to the medical charge of the 26th Mule Corps.

TERRITORIAL FORCE.

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—Donald John Armour to be Lieutenant (dated Feb. 1st, 1910). Captain John Forbes, from the 1st London (City of London) Field Ambulance, Royal Army Medical Corps, to be Captain (dated Feb. 2nd, 1910).

Rifles for drill purposes have been issued to the corps units in order that the men may learn the mechanism of the weapons and their use as splints.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel T. Grainger, Principal Medical Officer, Burma Division, has been promoted Colonel, *vice* Colonel H. K. McKay, C.B., C.I.E., retired. Lieutenant-Colonel C. M. Moore, Bombay, has been appointed to officiate as Staff Officer, Medical Mobilisation Stores, 4th (Quetta) Division, from May 26th next. Lieutenant-Colonel W. H. Burke, Bombay, has been permitted to retire from Jan. 1st. Major M. P. O'G. Lalor has embarked for India on the termination of his leave. Major N. R. J. Rainier, Civil Surgeon, Chindwara District, has been placed in medical charge of the Seoni District, Central Provinces. Captain M. F. White, Bombay, has had his leave extended six months, and Captain R. A. Lloyd has had his leave extended seven months. Captain J. McC. A. Macmillan, officiating Civil Surgeon, Seoni, Central Provinces, has been transferred in the same capacity to the Hoshangabad District. Captain W. H. Boalth has been appointed to the Sagaing District as a special plague officer. Lieutenant A. de C. C. Charles has been appointed a specialist in advanced operative surgery for the 3rd (Lahore) Division of the Northern Army.

INDIAN SUBORDINATE MEDICAL DEPARTMENT.

Assistant Surgeon Rai Munna Lal has been appointed an Honorary Assistant Surgeon to H.E. the Viceroy of India.

DEATHS IN THE SERVICES.

Lieutenant-Colonel John Peter Hamilton Boileau, A.M.D. (retired), at his residence, Trowbridge, Wilts, aged 68 years. He entered the Army Medical Department shortly after obtaining his degree and retired about four years ago after completing 42 years' service. The deceased officer was assistant professor of pathology at the Army Medical School, Netley, from 1876 to 1883, medical officer in charge of the station hospital at Meerut 1890–95, and was medical officer in charge of troops at Trowbridge 1896–1906. He wrote several articles in the Army Medical Department Reports and also contributed to THE LANCET.

THE BRITISH RED CROSS SOCIETY.

At the invitation of the Lady Mayoress a large gathering of influential City men and their wives assembled in the Egyptian Hall of the Mansion House on March 10th for the purpose of forming a City of London branch of the Red Cross Society. Among those who supported Lady Knill were the Lord Mayor and sheriffs, Sir Frederick Treves, General Sir Henry and Lady Mackinnon, Sir Melvill and Lady Beachcroft, and the mayors of several metropolitan boroughs.

The Lady Mayoress, in asking Sir Frederick Treves to deliver an address, said that every other county in England and Wales had its own branch of the Red Cross Society and the City of London must not be behindhand in the work. Sir Frederick Treves, after explaining the work of the Red Cross Society, said that the work was essentially a woman's work, and reminded his hearers that the Queen, on the inauguration of the British Red Cross Society at Marlborough House in 1905, had appealed to the women of England to assist her in carrying out her great scheme on that ground. On the motion of the Lord Mayor, seconded by Sir Melvill Beachcroft, a resolution was unanimously adopted expressing the desirability of establishing a branch of the society in the City and referring the matter to a committee under the presidency of the Lady Mayoress, and consisting of Lady Dimsdale, Lady Savory, Lady Mackinnon, and such other members as might desire to serve, in order that the necessary steps might be taken to bring a branch into existence.

On March 14th the Mayor of Kensington, Sir Walter Phillimore, presided over a meeting held at Kensington Town Hall for the purpose of forming a branch of the Red Cross Society. Sir Frederick Treves delivered an address. The movement in Kensington has been initiated by Lady Phillimore, who will be president of the new branch.

INDIAN MEDICAL SERVICE DINNER.

The annual Indian Medical Service dinner took place at Lucknow on Feb. 10th, Lieutenant-Colonel G. F. A. Harris, the officiating Inspector-General of Civil Hospitals in the United Provinces, presided and about 40 members sat down. The guests included the chief military medical officers in Lucknow.

THE RECTORSHIP OF THE IMPERIAL COLLEGE OF SCIENCE.

Sir Alfred Keogh, K.C.B., who until recently was Director-General of the Army Medical Service, has accepted the Rectorship of the Imperial College of Science.

Correspondence.

"Audi alteram partem."

THE PREVALENCE OF TUBERCULOSIS AMONG SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—Any communication from such an eminent tuberculosis specialist as Dr. R. W. Philip on the above subject must be of general interest to readers of THE LANCET, and his letter in to-day's issue touches on many points of vital importance for physicians specially concerned with the welfare of children. The very acceptation of the meaning of the term "tuberculosis" appears to be changing among scientific clinicians, and I am consequently emboldened to ask Dr. Philip for an answer to these questions, How does he define tuberculosis? What does he mean when he says a patient is suffering from tuberculosis?

Personally, I concur most fully with him in his aspiration that the standard of clinical training should be as high as possible, and most distinctly agree with him that the amount of tuberculous infection in young children is enormous. But are we to consider as standard tests of "the stigmata of tuberculosis" in young children the tests mentioned—namely, "(*a*) palpation for evidence of glandular enlargement of the anterior cervical and supra-clavicular areas (only cases showing at least a dozen such enlarged glands were included as positive); (*b*) percussion of the apices; and (*c*) auscultation of the apices"?

I understand from what he says that children disclosing "stigmata of tuberculosis" under examination by these tests, children who are otherwise "in fairly good health" and who have no other distinct morbid physical signs, are those he would class as suffering from the latent, in contra-distinction to "aggressive," disease. I cannot help thinking that the three tests mentioned are not wholly reliable as conclusive proof of the presence or absence of tuberculous infection in children of school age, and more especially in the younger of these children. The characteristics of tuberculous infection in the early years of life are largely peculiar to that age period, and while bowing to the experience of Dr. Philip I would suggest that post-mortem findings do not altogether tally with this description of "clinically determinable infection."

I am wholly at one with Dr. Philip in realising the vital importance of the right recognition of all the aids and methods at hand for the determination of the existence of tuberculous disease, but at the same time, in striving after "refinement of examination," it is certainly possible to overlook the obvious, and the detection of a small patch of bodily tissue possibly, or even probably, containing live tubercle bacilli does not necessarily prove that we have unearthed the root of the present evil.

A girl of 7 or 8 years of age was brought to see me a short time ago at the Royal Hospital for Sick Children. Three months previously she had suffered from an attack of measles, and since that time had been troubled with a constant cough. The mother was informed by the physician whose advice she sought (three days before she came to the hospital) that her daughter was suffering from consumption, that the upper part of her right lung was diseased. I could, however, discover no abnormal physical signs in the chest. The child looked distinctly ill, pallid, anæmic, and thin; there was loss of appetite, lethargy, and general debility. There was no sputum obtainable, and there never had been. To von Pirquet's tuberculin test the reaction was negative. There was, however, present a condition of pharyngitis and caries of the teeth in a marked degree. With attention primarily directed to the dental caries steady improvement in the general condition at once occurred, and as seen to-day the child is apparently in "normal health."

And this is no isolated case. I have seen many such, not all due to dental caries, but to conditions other than tubercle infection. And though "refinement of examination" may in such cases disclose latent foci of tuberculous infection I consider that it is positively immoral to hall-mark these children consumptive or tuberculous without the most careful exclusion of all other causes for the condition present at the time.

I am, Sir, yours faithfully,

Edinburgh, March 12th, 1910. A. DINGWALL FORDYCE.

THE UNDER-FEEDING OF BOTTLE-FED INFANTS.

To the Editor of THE LANCET.

SIR,—The subject of infantile mortality and the rearing of infants is receiving much attention nowadays, and doubtless many a medical officer of health besides myself prides himself on good work done in this direction and can point to annual tables of statistics showing a steady decline of the infantile death-rate.

One of the principal errors we have to combat is the systematic under-feeding of bottle-fed infants, the prevailing notion seeming to be that cows' milk is three or four times stronger than human milk and that it needs corresponding dilution. The point is clearly dealt with by Playfair, who in the second volume of his book on "Midwifery," speaking of the feeding of infants with cows' milk, says:—

> A common mistake is over-dilution, and it is far from rare for nurses to administer one-third cows' milk to two-thirds water. The result of this excessive dilution is that the child becomes pale and puny and has none of the firm and plump appearance of a well-fed infant. The practitioner, should, therefore, ascertain that this mistake is not being made, and the necessary dilution will be best obtained by adding to pure fresh cows' milk one-third hot water, so as to warm the mixture to about 98°, the whole being slightly sweetened with sugar of milk or ordinary crystallised sugar. After the first two or three months the amount of water may be lessened, and pure milk, warmed and sweetened, given instead (fourth edition, p. 295).

This is wise advice, and an experience of 25 years' practice, during which I have paid particular attention to this point, has convinced me of its wisdom. The difference in an infant who has first been fed with the excessively diluted milk, and then has been given for a few weeks the more generous mixture, needs only to be seen to be appreciated.

In teaching these facts to patients and to the public I have found practically that the chief obstacle to be overcome almost invariably is the argument that a nurse or doctor had ordered this extreme dilution, and now it appears that no less an authority than "The National League for Physical Education and Improvement" is advising the same underfeeding. I enclose a leaflet on "How to Bring up a Baby" which the League has recently sent to me; it is numbered fiftieth thousand and has evidently been extensively circulated. In paragraph 15 a table is given for the preparation of infants' food from cows' milk. This advises, as you will see, during the first fortnight a dilution of *3 parts of water with 1 of milk.* Equal parts of milk and water are not reached until the third month, 2 parts of milk to 1 of water are arrived at in the sixth month, and when the baby is 9 months old a strength of 3 parts of milk to 1 of water is finally recommended!

Besides excessive dilution, the total amount of food advised is very small. Nothing is said as to the varying capacity of different babies, but it is laid down that "the exact quantities of milk and water should be measured out," and then the maximum daily amount allowed for a child from 5 to 6 months old, if fed regularly day and night, is 32 ounces, in eight meals of 4 ounces each, each meal containing 2½ ounces of milk—exactly one pint of milk a day. Such feeding as that recommended here is, for ordinary healthy babies, nothing short of semi-starvation, and issued, as it is, authoritatively, it is a serious thing, for the point is of such importance as to outweigh all the good advice on other points given in the leaflet.

Incidentally, I notice that two bottles are recommended. Practically, the obligation to keep the bottle clean is less easily avoided if only one bottle be used and the simple rule be made that when not in use the bottle is to be kept in a basin of clean water. At any visit the doctor or health visitor has only to ask, "Let me see the bottle," and it should be found in its basin. I write this only because I am convinced that a serious error is being made in advising such free dilution of milk for the feeding of infants, and in the hope that this protest may lead to the correction in this point of an otherwise excellent leaflet.

I am, Sir, yours faithfully,
Bromsgrove, March 9th, 1910. CAMERON KIDD.

THE ÆSTHETICS OF ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—The publication in THE LANCET of March 5th of Dr. Hewitt's exceedingly interesting and instructive lecture on the Æsthetics of Anæsthetics raises some important questions from the surgeon's point of view. In the first place, it is evident that when the anæsthetist has more facilities for attending to the æsthetic principles of his art the better will be the result, and it is abundantly clear that the better the anæsthetic result the easier is the operation to perform and the less troublesome is the after-effect. "*I am convinced that many, and perhaps most, of the discomforts which one often hears attributed to general anæsthetics should in reality be attributed to a want of appreciation of certain details to which I shall to-day refer.*" Apart from the fact that many of these discomforts may also be due to the nature of the operation or to the position in which it has to be performed, there still remain several difficulties that the anæsthetist has to contend against, more especially in hospital practice. Speaking quite generally, nitrous oxide is the anæsthetic for the induction of anæsthesia. We can say to the patient, "You will smell nothing except perhaps a slight smell of rubber, and you will know nothing after 30 seconds." I venture to say that in hospitals generally there are very few pieces of apparatus that allow this ideal to be attained. Almost all the inhalers in hospitals leak ether vapour when the pointer is turned to "O." The patient smells the vapour at once. The fittings of the spindles, &c., are in the first instance accurately ground and the slightest injury to them is seldom perfectly reparable. The same thing applies in the case of ground valves to gas cylinders, any rough usage of which by porters or others is harmful to an easy and regular supply of gas. In addition the ether inhaler being metal attracts the attention of the nurse, who polishes the outside till it shines like a mirror and incidentally fills the threads of the screws with metal polish or whiting. When the anæsthetist arrives the rapid adjustment of the spindle so that he may make the apparatus odourless is impossible. "Cleanse first the inside that the outside may be clean also."

As Dr. Hewitt indicates, the smallest sensory stimulus is greatly magnified to the semi-conscious patient, and in addition to the causes he mentions as being especially disturbing, the cutting of bandages, preparation of the skin, pulling up of stockings, or adjustment of bed-clothes may indirectly completely mar a surgical procedure which otherwise the anæsthetist would have rendered safe and easy of performance. Some patients raise a hand at a certain stage to indicate that they are still conscious or perhaps to relieve an itching of the skin. As often as not the hands are at once seized and held down, an automatic muscular contraction being thereby brought on and a general struggle ensuing. Just as there are stages at which it is correct to restrain a patient's struggles so there are others at which it is wrong. Some patients struggle against their own muscles or body weight, and if left alone merely alter the position of their limbs or raise their bodies, matters of no real disadvantage which settle themselves in due course without attention, but the onlookers are hardly ever able to know the exact stage of unconsciousness that the patient has arrived at and they willingly, and perhaps by order, assist when they should, properly speaking, do nothing.

The dread that some patients have of anæsthesia quickly spreads in a surgical ward. Conversely, when the induction has been by nitrous oxide and well conducted and maintained, and when the after-effects are consequently slight the patients in a large surgical ward are much more willing to submit to operation. And how little credit does the anæsthetist get! It is quite usual for him to send the patient off the table conscious to such degree that if roused up he answers to his name, but on the removal of sensory stimulus he sleeps soundly for four or five hours and is not sick as a result of the operation. The anæsthetist has been greeted with the remark: "I hope you will not get the patient to-day so deeply under that he will require so much attention afterwards."

The constant change in the *personnel* of a large hospital renders it extremely difficult to ensure a succession of correct proceedings. The discontinuity needs endless patience on the part of the teacher and greatly hampers him in research work. It behoves everyone as far as possible to try to secure a more perfect environment for the patient and anæsthetist, so that operations may be performed with greater comfort to both patient and surgeon. Dr. Hewitt will receive the thanks of the medical profession for having drawn attention to so important a subject.

I am, Sir, yours faithfully,
March 7th, 1910. G. H. COLT.

ON THE VARIATIONS OF TEMPERATURE IN PHTHISIS DURING THE MENSTRUAL PERIOD.

To the Editor of THE LANCET.

SIR,—Dr. C. G. Welch in his interesting analysis of 500 cases of phthisis in relation to the effect of menstruation on the temperature in THE LANCET of March 5th does not quite do justice to previous published work on the subject.

Turban[1] (Davos) described 11 years ago the principal varieties of premenstrual, menstrual, and post-menstrual fever, with a note of their prognostic significance, and he returned to the subject in a paper of great interest read before the Twenty-fifth Medical Congress at Vienna, 1908. He describes here seven types of temperature elevation, the most frequent (73 per cent.) being the premenstrual, in which the rise occurs at a time varying from some hours to 14 days before the onset of the menses. This form is but an exaggeration of the *lebenswelle*, or the temperature curve of the normal healthy woman, has no baleful significance, and generally lasts on into convalescence. Post-menstrual fever is, on the other hand, often the expression of an exacerbation of the lung trouble occurring at this time, and almost always of bad import. Other types are rarer and more in the nature of clinical curiosities. Turban concludes that for many tubercular women menstruation must be regarded in the light of a complication.

Cornet[2] (Berlin) in his great compendium alludes to the occurrence of pre-menstrual rise of temperature in two-thirds of cases of tubercular disease in the female, adding that it has no influence on the course of the disease, but has a certain value in diagnosis. He gives a list of references to the work of others.

---

[1] Beiträge zur Kenntnis der Lungentuberkulose, Wiesbaden, 1899.

[2] Die Tuberkulose, Wien, 1907.

Franck[3] (Berlin) described an elevation of temperature amounting to 0·3°–0·4° C. occurring before onset of the menses in tubercular women and allowing their onset to be foretold. He states that this elevation is only seen in rectal measurement, but this is not so, since all Turban's observations are temperature readings taken for ten minutes in the mouth. And when the elevation occurs in apparently healthy women he suspects a concealed focus of disease in the genital tract or elsewhere.

Kraus[4] (Wienerwald) admits the occurrence of a premenstrual elevation in many healthy women and found it in two-thirds of his tubercular cases. Its duration varies from two days to two weeks, and it gives rise to no symptoms. It may be the first and only expression of a concealed focus. Sometimes it is associated with an increase of râles, resembling a tuberculin injection, and then disappears with clinical improvement.

Sabourin[5] states that the premenstrual elevation is nearly constant and is of real value in diagnosis. Other references are given in Turban's paper, and the subject has recently been gone into by Dr. Vere Pearson in THE LANCET of Sept. 18th, 1909, and by Dr. Constance Colley in a paper of much interesting detail, illustrated by very striking temperature charts, in the *Magazine of the London School of Medicine for Women*, October, 1909.

I am, Sir, yours faithfully,

Arosa, Switzerland, March 9th, 1910. EGBERT C. MORLAND.

CONGENITAL INTESTINAL ATRESIA.

To the Editor of THE LANCET.

SIR,—With reference to articles in THE LANCET on Congenital Intestinal Obstruction by Dr. N. I. Spriggs (Jan. 8th, 1910) and Congenital Intestinal Atresia by Mr. H. S. Clogg (Dec. 24th, 1904) I would invite the attention of collectors to a case (described by me in the *Indian Medical Gazette* of April, 1889) in which a complex atresia occurred 60 inches from the pylorus. Its nature in connexion with Meckel's diverticulum was discussed. The specimen is in the museum of the Medical College, Calcutta.

I am, Sir, yours faithfully,

Ferozepore, Feb. 24th, 1910. J. R. ADIE.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—I do not wish to shock Dr. W. Gordon's feelings in the least, especially after his courtesy in forwarding me an advance copy of his long letter to you, but I am bound to tell him that so far as this particular subject, the early diagnosis of cancer of the stomach, the only one with which I have to deal, is concerned, I do not attach the least importance to the authoritative opinions of the eminent clinicians whom he quotes. Facts with which they were not acquainted have come to light since those opinions were formed. Had they known those facts, I have no doubt they would have revised those opinions, as I have no doubt Dr. Gordon will revise his.

I note that in his letter to you Dr. Gordon takes no notice of Willan's and McCarty's results, published in the *American Journal of Medical Sciences*, quoted by Mr. Hey Groves. I was not aware of these at the time my paper was written, but they confirm the conclusions at which I arrived in every single particular. These are facts, very definite facts, as Mr. Hey Groves calls them. The specimens were not selected. All the specimens of stomach diseases removed by the brothers Mayo were investigated. The cases were not selected, except of course so far that no case demonstrably incurable was operated upon. The result is conclusive; no fair-minded man can doubt it; they prove my point. It is of course open to Dr. Gordon to prove that cases of carcinoma of the stomach which do not come to the surgeon at all, or which only come when it is too late, have not originated from old gastric ulcers or irritated scars. But he must prove it. Mere quotation from authorities who, however eminent, were not acquainted with what we know now is not proof. When he has done this I will deal with the rest of his letter.—I am, Sir, yours faithfully,

C. MANSELL MOULLIN.

Wimpole-street, W., March 12th, 1910.

INTRACRANIAL PSEUDO-TUMOURS.

To the Editor of THE LANCET.

SIR,—In the interesting annotation published under this title in THE LANCET of March 5th (p. 662) it is stated as "no doubt conceivable that a small tumour may become latent and the symptoms due to its presence may vanish." May I venture to suggest that this proposition is something more than "conceivable," as there are clinical and pathological records which definitely establish its truth. Leaving on one side the cases in which an intracranial tumour has been found on post-mortem examination, though no evidences of its existence had been observed during life, there are other records showing a clinical history of considerable cerebral disturbance followed by a more or less prolonged period of recovery, and later, by the discovery of an intracranial growth on necropsy. Such cases are certainly unusual, but they are sufficient to afford demonstrative proof that a tumour may cause active and alarming symptoms and yet may pass into a condition of quiescence. Obviously this fact does not contradict your suggestion that some intracranial conditions other than tumour may produce a clinical picture identical with that frequently caused by tumour. But it does suggest that among the cases for which such an explanation is invoked there may well be some in which tumour after all is the correct diagnosis. Series of cases similar to those described by Dr. Finkelnburg and Dr. Eschraum have frequently attracted attention in this country, and are to be met with notably in the writings of Dr. Hughlings Jackson and Sir Jonathan Hutchinson; in addition, many individual cases of the same order have been recorded. Some years ago I made an endeavour to collect these records (Glasgow Hospital Reports, 1899), and at the same time I added notes of nine cases which had come under my own observation. The consideration of the whole of the evidence leads almost inevitably to your conclusion "that there is some pathological condition with which we are not familiar which simulates intracranial tumour" and yet leaves room for the conviction that recovery more or less complete from "the ordinary triad of tumour symptoms" is not necessarily inconsistent with the diagnosis of intracranial growth. That one of the simulating conditions is at times thrombosis of the intracranial veins and sinuses I have striven to show elsewhere,[1] but even if this and other conditions are allowed it still unfortunately remains true that there is no certain and conclusive sign by which to determine in an individual case exhibiting "the ordinary triad of tumour symptoms," whether such symptoms are dependent on tumour or on some other condition. My immediate point, however, is to support the proposition that these symptoms, even when caused by a tumour within the skull, may more or less completely cease and disappear.

I am, Sir, yours faithfully,

London, W. C. O. HAWTHORNE.

THE "PERFECT WOMAN": A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—An offensive poster has recently been placarded in Piccadilly-circus stating that we have examined "La Milo" and found her to be a perfect life. Will you kindly state in your next issue that this poster has been published without our knowledge or consent?

We examined "La Milo" about two years ago and found her to be an ordinary healthy woman, like a million or two other women in England. She was therefore recommended for acceptance for insurance. Neither she nor any one else was informed that she was perfect, but her acceptance was merely notified in the usual way.

We are, Sir, yours faithfully,

HAROLD J. JOHNSON, } Principal Medical
ALFRED M. GOSSAGE, } Officers.

Gresham Life Assurance Society, Limited,
St. Mildred's House, Poultry, E.C., March 15th, 1910.

---

[3] Zur Frage des Menstruationsfiebers tuberkulöser Frauen, Berliner Klinische Wochenschrift, 1905, No. 42.

[4] Über praemenstruelle Temperatursteigerung bei Lungentuberkulose, Wiener Medicinische Wochenschrift, 1905, No. 13.

[5] Revue de Médecine, March, 1905.

[1] Brit. Med. Jour., Feb. 8th, 1902; THE LANCET, Sept. 19th, 1908.

THE POOR-LAW MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—We have read with interest and sympathy the letter of Dr. Alan Randle in your issue of Feb. 26th under this title, voicing the grievances of the Poor-law medical officers of London; but on behalf of his "more fortunate brethren" in the service of the Metropolitan Asylums Board, we venture to think that the envy with which he regards us is misplaced, and that at present grounds for dissatisfaction are as real and as widespread in our service as in that of our Poor-law colleagues.

We have no more security of tenure or promotion than an infirmary medical officer, and, unlike him, have no right of appeal to any Government department. Following the practice of boards of guardians which Dr. Randle finds so objectionable, the Board now appoint us for a limited period of four years. Our accommodation and quarters at most of the hospitals are notoriously deficient, and we are liable to be transferred from one end of London to the other at a few hours' notice. Our pay is higher, but our work exposes us to certain risks from which infirmary officers are largely free.

At present we labour under an especial and pressing grievance. Last autumn the Board filled up vacancies in their medical staff in the ordinary course, and were confronted a month or two later by an unusual (but not, by their officers, unforeseen) scarcity of infectious disease in London. Any fever hospital service must be faced by periods of pressure and slackness alternately, but the Board thought it necessary to consider the question of reduction of staff. The medical officers, under pressure that amounted, from their point of view at least, to threats of dismissal, and from a desire to support each other as far as possible, agreed to take such leave as would obviate any necessity the Board felt themselves under to reduce the medical staff below its normal limits, such leave (which worked out at about three weeks per head) involving the loss of pay, of board and lodging, and of time qualifying for rise of salary.

In our opinion, the conditions which occasioned our offer now no longer obtain, owing to the transference of medical officers to asylum and other services, to the natural shrinkage by resignation and sickness, and to the presence of clinical assistants at certain of the hospitals who fulfil functions which would usually be part of the duties of a medical officer; but the authorities of the Board refuse to modify their course of action, and we are being compelled to give effect to our proposal in its entirety. It seems to us that the career offered by the service of the Metropolitan Asylums Board has not those advantages over that of the Poor-law which might be inferred from Dr. Randle's letter, and it is to bring this view before the younger medical graduates of the day that this letter has been written.

We are, Sir, yours faithfully,

March 10th, 1910. THREE A.M.O.'s.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Salford Royal Hospital.

SALFORD has a population of nearly 240,000. The Salford Royal Hospital is the only general hospital in the town, and it has only 135 beds. The work it is called to do is beyond its present capacity. The out and home patients are nearly 20,000 annually, while the inadequate number of beds means that the admission of patients is deferred and their discharge unduly hastened. The pressure on the accommodation is shown by the fact that on an average an accident case is brought into the hospital every hour. Though all these cases may not require detention, it must be remembered that it is an industrial, machinery-using town, where accidents are apt to be severe. To meet these urgent claims an effort is being made to raise £70,000 for the necessary extension of the hospital. To the present date £45,733 have been contributed, so the charitable people have still an opportunity of helping a movement in every way well deserving of support.

Hospital Saturday Fund.

The annual meeting of the delegates and supporters of the Manchester and Salford Hospital Saturday and Convalescent Homes' Fund was held in the Manchester Town Hall on March 10th, the Lord Mayor (Mr. C. Behrens) presiding. As compared with the previous year there was an increase in the fund of £569. The amount collected from workpeople was £7213, and the income from other sources was £228. This sum of £7441 is an increase of £2818 over the income for 1906, the year before the provision of the convalescent homes, which are very popular and supply a great need. As to the formation of branches in various works, the report urged that nothing could be done without "the sympathetic coöperation" of employers. During the year 348 patients were sent to the men's home at Penmaenmawr, and 420 to the women's home at Arnside. The maintenance of our hospitals by voluntary contributions seems to be increasingly doubtful. The Lord Mayor hoped that next year the amount collected would be five or six times the £7000 now obtained, but the probabilities seem to be against the realisation of his hopes. He said that if the ratepayers of Manchester had to maintain the hospitals at their present standard it would be at a cost of 10*d.* in the £ added to the rates. Bishop Welldon thought it was desirable that they should be maintained by voluntary contributions, but it was his opinion that in the long run hospitals would come to depend on the rates. The Hospital Sunday collections have also increased this year, £4185 being received, as compared with £3296 last year. After all, the increase is small compared with the wants of the hospitals.

March 15th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Royal Victoria Infirmary.

THE annual court of governors was held on Saturday, Feb. 26th, in the out-patient hall, the Lord Mayor (Sir William Stephenson) presiding. Amongst those present were Sir George Hare Philipson, Sir Riley Lord, the Bishop of Newcastle (Dr. Straton), and Dr. David Drummond. The Lord Mayor, in moving the adoption of the report of the committee, made several comments. He noted that the number of ordinary patients during the past three years had advanced 22 per cent., while the out-patients and casuals had advanced 40 per cent., and the number of operations by 23 per cent. While this was going on the expenditure had increased from £28,578 to £35,540, an increase of about £7000, while the income had increased by about £6000. He was struck by the small amount of ordinary subscriptions compared with the growth of workmen's subscriptions, which in five years had increased from £5647 to £16,521. The report was adopted. Dr. Drummond, in moving the adoption of the medical report, contrasted three successive decades commencing in 1879, and called attention to the enormous mass of cases to be dealt with by the honorary and resident staff; this meant working the staff at high pressure; it also meant that the hospital was straining its resources and was an explanation of the fact that the staff had during the past year urged upon the house committee the desirability of instituting an inquiry as to whether the portals of the infirmary were not a trifle too wide. He drew attention to the effect of the working of the Act of Parliament relating to the medical inspection of school children, more particularly in the eye and throat and ear departments, the chiefs of which had had to make special arrangements to deal with the excess of cases.

St. Luke's Chapel, Royal Infirmary.

At the same meeting a resolution was put forward in an attempt to reopen the chapel, which had been closed for two years. This chapel was built in the new infirmary (following on the precedent of that in the old infirmary) and was consecrated as a Church of England edifice. Later permission was given for Nonconformist services to be held in the infirmary in the lecture theatre. A feeling, however, arose that Nonconformists should have the opportunity of holding services in the chapel which was the property of the institution, and application was made for "equal facilities in the use of the building." The house committee took legal advice and found that this was impossible, as the building was consecrated as a Church of England building. After an acrimonious discussion extending over many months the governors at one of their courts passed a resolution closing the chapel entirely. The present resolution was an attempt to reopen the discussion in an amicable way, and was couched in these terms:—

> That St. Luke's Chapel be opened on Sundays and weekdays for prayers and praise, the Chaplain of the Church of England to read the prayers and the Chaplain of the Free Churches the lessons for the day; and that services be held in the wards at hours to be appointed by the Governors, to be conducted by the Chaplain of the Church of England and the Chaplain of the Free Churches.

Some discussion was raised, but finally the consideration was shelved for six months, so that the representative governors might have an opportunity of laying it before the bodies of working men whom they represented. The discussion of such a matter in a medical paper may appear to be out of place, but there are certain practical aspects to be considered quite apart from those of creed. The hospital is very largely supported by contributions of the working men, whose representative governors take a keen interest in their appointment, and, further, the people whom they represent are to a large extent Nonconformists, and it seems, as was suggested at the court of governors, that this long-standing trouble has led to a lack of support of the institution and may lead to more in the future.

Durham University College of Medicine.

At a meeting of the Council on March 8th, Sir George Hare Philipson (President of the College) in the chair, Mr. H. B. Angus, M.S., F.R.C.S., surgeon to the Royal Infirmary, was elected lecturer in surgery, and Mr. Thomas Beattie, M.D., M.R.C.P., physician to the Infirmary, was appointed lecturer in materia medica. A few weeks ago the Council decided to establish a chair in materia medica and a professorship in therapeutics in place of the older appointment, which was of materia medica for the most part and therapeutics added. The appointment of the professor of therapeutics has for the present been deferred.

Death from Anthrax.

An inquest was held during the past week at the Royal Infirmary on the body of a shepherd from Coldstream. A son of the deceased in his evidence said that he and his father were called on Feb. 23rd to a farm to skin a bullock which had died after a short illness; his father scratched himself on his arm, and began to be ill two or three days afterwards. He was removed to the infirmary, where he died on March 8th. The bullock was buried after skinning. Medical evidence was put forward to the effect that the deceased had died from anthrax, the point of inoculation being in the arm. The jury returned a verdict in accordance with the medical evidence.

Farmers and the Spread of Anthrax.

Mr. Coward, a farmer near Coniston, who recently lost a valuable heifer through anthrax, has upon the advice of the inspector for the Northern Counties under the Board of Agriculture brought under the notice of the Furness and District Farmers' Association a suggestion which may throw some light on the spread of anthrax. He pointed out that the railway companies at the present time convey large quantities of hides, horns, cotton husks, &c., in trucks from the ports; that probably immediately afterwards the same trucks might be used for the carriage of feeding stuffs for animals, and that so there might be left in the trucks from their first contents bacilli which could be distributed thus. The Farmers' Association suggests that the railway companies should be compelled to convey hides and the like in specially marked trucks, and that in no circumstances should the same trucks be used for the carriage of feeding stuffs.

The Clinical Society, Newcastle-on-Tyne.

The March meeting of the society was held on the 3rd inst., the President, Mr. J. W. Leeoh, being in the chair. There were present some 75 members and visitors. Dr. George H. Hume introduced the business of the evening—a discussion on the Workmen's Compensation Act—with a clear and thoughtful and suggestive address. He was followed by Sir Thomas Oliver, Dr. T. Beattie, Dr. W. Mearns, Dr. F. Russell, and Dr. J. Leslie Wilson. Mr. Mundahl and Mr. Edgar (barristers-at-law) contributed to the debate from the legal point of view, and Mr. Mitcheson, who represented one of the insurance companies, gave some very interesting information from the business standpoint. The discussion was so well received that it is proposed to revive it at an early date, so that the general body of members may take their part in it. It will subsequently be published in the Transactions of the society.

March 14th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Welsh Medical Review.

THE Cardiff Medical Society is displaying commendable enterprise in an attempt to establish under the title of the *Welsh Medical Review* a quarterly medical journal for Wales. It is proposed that there shall appear in the *Review* a synopsis of the proceedings of the Welsh medical societies and of the divisions and branches of the British Medical Association in Wales. There will also appear reports of papers read at the societies, reports of hospital cases, University news, reviews of medical literature, and other topics of medical interest. There is without doubt quite enough material in the Principality to fill the pages of the new quarterly, and as the annual subscription has been fixed at the modest sum of half a crown there ought to be enough subscribers forthcoming to justify the issue of a fair-sized volume.

"Consultations for Infants" in Cardiff.

The number of deaths of young children in Cardiff has been very considerably reduced in recent years, and especially in the past three years. In 1909 the infantile mortality-rate was 103 per 1000 births, and in 1907 it was 118, while for many years previous to the latter date it was rarely below 140 per 1000. The improvement in the last few years is coincident with the employment of lady health visitors by the corporation, who make domiciliary visits for the purpose of instructing mothers with respect to the feeding and rearing of children. Although Dr. E. Walford, the medical officer of health, has always attached great importance to the necessity for improving the milk supplied to artificially fed children, he has never advocated the provision of a municipal milk depôt, being of opinion that there should be in association with such an institution a proper system of medical supervision of the children attending the depôt. He has now succeeded in establishing in six different centres of Cardiff what he calls "consultations for infants," somewhat on the lines of the "consultations de nourrissons" organised by Budin at the Charité Hospital in Paris. Dr. Elizabeth Elder, with the assistance of two lady health visitors, is supervising the "consultations," and there are already about 100 children under observation.

Swansea and Merthyr Asylum.

The great growth of the population of the county of Glamorgan, with a corresponding increase in the number of lunatics, has led the county council to decide that the accommodation provided in the Bridgend asylum shall be used only by the inhabitants of the administrative county. It is nearly ten years since formal notice was given to the Swansea corporation to withdraw Swansea patients from Bridgend, and at the beginning of 1909 the council gave notice to the Merthyr corporation to withdraw patients who had been sent from that town. Various schemes for the provision of asylum accommodation have been discussed by the Swansea authority, including a combination with the Brecknock and Radnor county councils and the utilisation of the Talgarth asylum belonging to these two councils. In 1908 the Commissioners in Lunacy informed the Swansea council that they considered there had been unnecessary delay in arriving at a decision on the question of providing suitable asylum accommodation for the town, and urged that definite steps should be taken in the matter. In the meantime, some 60 Swansea patients are being accommodated at Talgarth. There appears now to be every likelihood of the desires of the Commissioners being carried out by the erection on a site near to Swansea, but outside the borough boundary, of an institution jointly by the two corporations of Swansea and Merthyr. Two-thirds of the cost is to be borne by Swansea and one-third by Merthyr, as it is anticipated that this will be about the proportion of the extent to which the asylum will be used by the two boroughs. The number of lunatics at present chargeable to Merthyr is under 200.

The Sanitary Condition of Monmouthshire.

There are few counties which have been visited by the medical inspectors of the Local Government Board more frequently than Monmouthshire. In the report which has just been issued of an inspection of the urban district of Bedwellty Dr. J. Spencer Low refers to the defective public health administration in the Monmouthshire valleys as a whole, where infantile mortality is high; infectious disease exceedingly prevalent either constantly or at frequent intervals; measures taken to cope with such diseases commonly inefficient; housing conditions bad and nuisances extremely numerous. These conditions, he considers, call for the appointment of a whole-time medical officer of health, for the necessary personal supervision of the routine work in the health department of a populous district cannot, as a rule, be conducted effectively by a medical officer of health in private practice. Upon many occasions during the past 10 or 15 years the Local Government Board has advised the adjoining sanitary authorities in the Monmouthshire colliery districts to combine for the purpose of appointing a joint medical officer of health, but so far no definite steps have been taken in this direction. One reason given for continuing the existing conditions has been that, with the appointment of a county medical officer of health, the necessity for a whole-time executive officer no longer existed, but, as Dr. Low points out, the county medical officer devotes considerable time to work under the education committee and the remainder is fully occupied in investigating large problems of water-supply, sewerage, and other questions, and in periodic inspections of public health administration in the sanitary districts of the county. It would appear, in fact, that the Board considers that the functions of the medical officer of health of the county should remain administrative and those of the medical officer of health of the district should be executive.

March 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Competitive Teaching in the University of Glasgow.

AT a meeting of the University Court held at Glasgow last week an important discussion took place on the representation of the General Council of the University that distinguished graduates who may make application to the University Court to teach classes in the University qualifying for graduation should, when the Court was satisfied of their ability and fitness, be appointed lecturers in the University, and should be granted classroom accommodation in so far as that was possible. It was moved that the Court should approve generally of the principle involved in the proposal of the council, and, recognising the financial difficulties which the proposal entails, should suggest that the council should consider in what way these financial difficulties may be overcome. An amendment was brought forward to the effect that under the existing ordinances regulating the University the representation of the council could not be given effect to. Dr. D. C. McVail spoke in favour of the resolution, instancing the success of the independent extra-professorial teaching which obtains at Oxford and Cambridge. He also alluded to the prospect of an increased Treasury grant for the Scottish Universities, and thought, therefore, that lack of funds should not stand in the way of the scheme if it were approved of by the Court. In support of the amendment Professor Henry Jones pointed out that since the passing of the Universities (Scotland) Act in 1889 the University of Glasgow had by every means in its power multiplied its teaching staff. Since 1889 lectureships had been established in physiological chemistry, botany, physical chemistry, organic chemistry, metallurgical chemistry, engineering, electrical engineering drawing and design, electricity, medical physics, embryology, applied anatomy, diseases of the ear, diseases of the throat and nose, bacteriology, and dermatology. In addition also 19 new lectureships were established in the Arts and Law Faculties. Attention was also drawn to the fact that in session 1889-90 the assistants to professors who received payments out of the University funds numbered 8; in 1892-93, 13; in 1902-03, 48; and in 1908-09, 66. Sir Hector Cameron said that he was a believer in competitive teaching. The University of Edinburgh and its medical school owed a great deal to competitive teaching, but that was not competitive intra-mural teaching. In his opinion there could be nothing more disorganising than the sort of competition which was suggested within the walls of the University. Principal Sir Donald MacAlister also spoke strongly against any alteration in the present system of teaching. Finally, on a vote being taken, the amendment was adopted by 10 votes to 3.

Medical Inspection of School Children in Aberdeen: Scheme of the Provincial Committee.

At a meeting of the provincial committee and the Aberdeen school board a discussion took place in relation to instruction of teachers in school hygiene; but no finding was come to, and the matter will come up again for decision by the school board. Dr. L. D. Cruickshank, for the provincial committee, submitted a memorandum as a basis of discussion, in which he remarked on the advisability of students, during the course of school hygiene, seeing as many of the physical and mental defects prevalent among school children as possible, and as no two cases of the same disease are alike, as many instances of the same diseases as possible. Further, he said that a child used for demonstration to students is not so valuable in that capacity after having undergone the process once or more than once, but that the material available has hitherto been so scarce that the same child has had to be used to demonstrate different defects, and some defects could not be demonstrated at all. Dr. Cruickshank, from the point of view of obtaining the best material and of bringing the students into touch with the work, emphasised the advantages to be gained from the medical lecturer being made medical inspector of several schools, the cases found defective in those schools to be made available for class demonstration purposes. Second-year students who have completed the systematic instruction in school hygiene are encouraged to further interest themselves in school hygiene and the physical condition of the children by filling up an observation card once a quarter. The observations are made during attendance at the various schools for teaching purposes.

March 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Women's National Health Association and the Improving Dublin Death-rate.

THE annual meeting of the Rathmines, Terenure, and Districts Branch of the Women's National Health Association was held on March 14th. Although the district is one in which some disaffection towards the association might have been expected, all the circumstances combined to make the meeting an unqualified success. Sir William J. Thompson, the recently appointed Registrar-General, occupied the chair, and Lady Aberdeen was able, in a very instructive address seconding the resolution that the association was well worthy of support, to show by the figures which had been arranged for her by the Registrar-General that "the decrease in the number of deaths in the Dublin registration area in the last year was the greatest on record." The Registrar-General himself, in a speech proposing the re-election of the committee, gave the following series of deaths from tuberculosis during the past five years:—

	Deaths from—	
	Pulmonary tuberculosis.	All forms.
1905	1207	1724
1906	1152	1694
1907	1183	1793
1908	1174	1742
1909	1049	1508

Thus the deaths from pulmonary tuberculosis in the Dublin registration area had decreased by 125, compared with those of the year 1908; while those from all forms of tuberculosis were less by 234. These data are surely convincing, and all benevolent members of the community, irrespective of creed or politics, now recognise the value of the work of the association.

The Queen's University of Belfast.

The spring examinations in the Faculty of Medicine will begin on March 29th and will continue until April 6th, when the Final or M.B. will cease. In accordance with the regulations of the Acts, students who entered under the regulations of the old Royal University can be examined under these, but it is satisfactory to note that many are selecting the plan offered by the new arrangements.

Monaghan and Cavan Asylum.

Dr. R. L. S. Donaldson, after being 24 years resident medical superintendent of this asylum, has retired, and has been granted a superannuation of £400 per annum. About 12 months ago Dr. Donaldson was attacked by a patient, and as a result of the injury he then received in the back he has been incapacitated since from discharging his duties. At the monthly meeting of the board of management of the asylum on March 10th a resolution was passed unanimously expressing regret at Dr. Donaldson's retirement and sympathising with him and his wife in his continued serious illness.

Obituary: John Getty Clokey, M.B. R.U.I.

Dr. J. G. Clokey, a well-known practitioner in Belfast, died at his residence in that city on March 12th from pneumonia, secondary to influenza. The deceased, who was 45 years of age, was a native of Belfast and studied at Queen's College, Belfast, graduating M.B. of the Royal University in 1894. After spending two years as an assistant at Colchester, Dr. Clokey began practice in Belfast in 1896, and was often called of late as a witness in cases under the Workmen's Compensation Acts. He is survived by a widow and two children, with whom, as well as with his father, there is sincere sympathy.

March 15th.

PARIS.

(From our own Correspondent.)

The New Medal of the Academy of Medicine.

M. Patey, the engraver, has completed the new medal which the Academy of Medicine will in future present to its *lauréats* who may receive awards in such subjects as epidemiology, vaccination, hygiene of children, and tuberculosis. One of the sides of the medal represents Hygeia, the Greek goddess of health, receiving from the Academy of Medicine the cup of life and offering it to a patient. According to the legend, she was at first one of the allegorical figures associated with Æsculapius but soon came to be regarded as his daughter. The other side contains a view of the Academy buildings, and on the margin foliage of oak and laurel united by a design showing the name of the recipient.

New Professors.

Two chairs are vacant at the Faculty of Medicine—that of internal pathology by the death of Professor Brissaud and that of general pathology by the retirement of Professor Bouchard. At a general meeting of the professors of the Faculty it was unanimously resolved to recommend to the Minister Dr. Widal for the chair of internal pathology and Dr. Achard for that of general pathology.

A Praiseworthy Course.

The Paris Society of Medicine has taken the initiative in omitting its annual dinner and in substituting for it a special collection in aid of sufferers by the recent floods. Several thousand francs have been already received, but the subscription list is not yet closed. The committee of management will itself distribute the proceeds to medical men who have sustained losses from this cause.

Rights and Obligations of Medical Men in Connexion with Orthopædic Appliances Prescribed by Them.

The medical union of the district of Cherbourg has recently had occasion to consider the position of medical men in reference to the suitability or otherwise of orthopædic appliances. A practitioner had prescribed for a child a specially shaped leather corset, but as the article supplied and actually worn by the patient was, in his opinion, a misfit, he pointed out its defects to the mother, informing her that made as it was it could not serve its purpose. The corset maker then wrote an angry letter to the practitioner declaring that the latter's criticism of an appliance sold by him was an aspersion on his reputation as a tradesman and that he would eventually bring an action for damages. When the officials of the union were made aware of the circumstances they wrote to the corset maker informing him that it was not only a practitioner's right but also his duty to point out defects in a surgical appliance which he had ordered to be made, and this letter had the unanimous approval of the members of the union. They considered that it was a practitioner's duty, when a patient asked his opinion, to give it freely with respect to a surgical appliance which was not of his own ordering. It was, moreover, a practitioner's right and duty to see that no other appliance was substituted for the one which he had ordered. Many medical men even thought that a practitioner might go so far as to recommend patients to obtain surgical appliances from certain makers, disclaiming responsibility if the articles were procured elsewhere. The union also suggested that every prescription for an orthopædic appliance might contain a statement to the effect that the practitioner reserved the right, before the appliance was delivered, of examining it so as to satisfy himself that it fulfilled the conditions which appeared to be necessary in the interests of the patient.

March 15th.

VIENNA.

(From our own Correspondent.)

The Prevention of Premature Burial.

In olden times, when the physical proofs of death were not so well known as now, terrible stories of people having been buried alive by mistake were not so very rare, although good authority can be shown for extremely few, if any, of them. Since 1860 a law has existed in Austria, framed purposely for the assurance of the public that every precaution is taken to prevent the occurrence of such an accident. By this law every death must be notified within six hours to the local magistrate at the office of public health. The friends of the deceased must deposit at the same time a certificate signed by the medical practitioner who has treated the deceased during the last illness until his death; this certificate, called "Behandlungschein" (certificate of treatment), must set forth the nature of the disease, the course of it, the time (hour and day) of death, and must state whether the medical attendant was actually present at the time of death. On receipt of this certificate a specially qualified medical man (who is generally the officer of public health or the district medical officer) must inspect the body of the deceased person at the house where it is lying between the sixth and twenty-fourth hours after death. The title of this medical officer is "Todtenbeschauer" (inspector of dead bodies), and he has to satisfy himself that the cause of death corresponds with the statement in the certificate. He has to see that rigor mortis is present or that signs of putrefaction or the characteristic death-spots are beginning to appear; if none of these are present he has to satisfy himself that pulse and respiration have ceased and that the temperature of the body is that of a corpse. He has to write a report on each case, and if he finds signs of persisting life or does not feel convinced of the correctness of any statement on the part of the friends or doctor, or if he finds marks of violence, the permission for burial is not given, but a forensic necropsy is ordered against which order no appeal is allowed. The necropsy must be made within the next 48 hours. The same officer has to examine and report on the body of any person found dead or who has died without the attendance of a medical man In any case the dead body must not be interred before the lapse of 48 clear hours after death (generally 60 hours) and before permission has been given by the Todtenbeschauer. The corpse may either remain in the same house, where it has to be under the care of at least two persons day and night, or it may be removed to the cemetery, where it is placed on a stretcher in the mortuary. In both cases it is left uncoffined, with the face uncovered, except perhaps by a piece of linen. Before it is placed in the coffin and the lid screwed down those who have "laid it out" have to look for the unmistakeable signs of decomposition; if these are absent the burial of the corpse may be postponed. The same rules hold good in the case of stillborn children as with grown-up people as regards the certification of death, and even a fœtus must be inspected by the Todtenbeschauer. Thus every body before burial must have been seen at least twice within 48 hours after death by two independent medical men, and is generally seen by one of them again immediately before the coffin is closed. Ever since regular records have been kept of each case of burial and of each corpse (since 1860 in Vienna) only one single instance has occurred in which the slightest suspicion or doubt was attached to the fact of death. In a case in a small mountain village where such a thing was said to have happened the bearers, having heard a knocking sound whilst carrying the coffin, discovered that a hammer had been left in the coffin and had jolted about so as to cause the noise. The coffin was opened at once on the road and advanced decomposition of the abdominal wall was found in the body. Nevertheless, rumours spread that a living person had been interred, and the gruesome story lingered on for many years, in spite of the certificate of the officials present, including the priest. In Vienna there are at present fine halls devoted to mortuary purposes. In the central Friedhof (cemetery), where nearly 90 per cent. of all burials take place, there have been erected, especially for the purpose of keeping the bodies at least for two days, extensive vaults kept at a constant temperature of 5° C. The maximum capacity of these halls is 300 corpses. The halls are constructed of marble slabs and can be washed by means of jets of water from six hose-pipes. The corpses are laid side by side with the face bare. Each hall can accommodate 25 bodies. For the reception of bodies which it is desired to preserve for a longer period than two days there is a special hall where a corpse may be kept until decomposition is so far advanced that the entire abdomen is green. The maximum limit is eight days, after which burial is compulsory. It has never been necessary, however, to keep a body longer than five days. The arrangements for infective corpses are very complete. All bodies of people dead from infectious disease are brought, without exception, immediately after death to the so-called glass hall. This consists of a number of vaults where the corpses are placed on marble tables. A long glass partition, reaching through the entire height and length of the hall, separates this side of the hall from the remaining space, which can be entered by the friends of the deceased. Even the priest may not enter within the glass partition, but must perform the rites of his religion in the common visitors' space. The bearers who have brought the infectious corpse to the mortuary must leave the infectious dead chamber by a door leading to a bath-house, where they take a bath whilst their clothing is being disinfected by steam, and they leave the mortuary by a different door from that of their entry. The same procedure is observed when the funeral takes place. There are adequate conveniences for post-mortem examinations if they should be required and a pathologist is always present in the institute. These infection halls are also fitted for "cold storage" and all the safeguards against any tragic mistake are taken. And it must be once more distinctly stated that there is not a single authenticated instance of a case of premature burial having happened in this country within the last half century. In the other cemeteries similar, though not so modern, arrangements are in force to ensure that life is unmistakeably extinct before the body is placed into its last resting-place. In fact, it may be said that the possibility of such an event never occurs nowadays to anybody in Austria.

Memorials to Viennese Physicians.

A few days ago two statues of celebrated professors of the Vienna Faculty of Medicine were unveiled in the presence of numerous professors, pupils, and friends. The one was the statue of Professor Eduard v. Jäger, who for many years was recognised as the leading ophthalmic surgeon in Central Europe. Professor Fuchs, the successor of Jäger, delivered the dedication speech, and he was seconded by Professor Klein, the only surviving pupil of Jäger. A few days earlier a similar honour was done to the memory of Professor Seegen, whose name is connected with researches on the effects of the Karlsbad springs. He will also be remembered by his work on diabetes, and it may be said that much modern investigation into the problems of human metabolism has been directly the outcome of Seegen's researches.

A Petition of the Vienna Medical Council about "Social Insurance."

The Vienna Medical Council (*Aerztekammer*) has addressed the following petition to the Houses of Parliament :—

> The Medical Council, being the representative body of the practitioners, calls the attention of the Houses of Parliament to the fact that the proposed Bill of insurance against sickness endangers the medical profession, in that it comprises 6½ millions of persons under the title of those who by law will be forced to become members of a sick club. Hitherto their number has been only 2 millions. But although the number of obligatory insurances will thus be trebled, the profession is prepared to concede this; it protests, however, against the Bill which would compel all persons earning an income of less than 3600 kronen (£150) a year to belong to a sick club. The Medical Council earnestly begs that the wishes of the profession be considered. The profession wishes to lay down the upper limit of the income for those who must of obligation join a sick club at 2400 kronen (£100) a year, otherwise the profession will be forced to consider its position with a view to defend itself against murderous attacks.

To understand the position it is necessary to recall the recent development of social legislation in this country. A very powerful and influential political party is striving to improve the condition of the people by enforcing upon them a system of compulsory insurance against sickness. This would involve, of course, the appointment of numerous physicians, but it would also curtail materially the prospects of the practitioner, and against this impending danger the medical profession are trying to protect themselves. On the other side the public is only too glad to avail itself of such an opportunity of obtaining at a minimal cost (amounting to between ¼ and ¾ per cent. of the average income) medical aid and drugs besides sick pay. Thus things are at a deadlock.

March 14th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Jan. 29th show 12,364 deaths, as compared with 10,928 in the week preceding. Bombay Presidency reported 653; Bengal, 1471; the United Provinces, 6290; Punjab, 2227; Burma, 251; and the Central Provinces, 1299.

Flies and Enteric Fever.

A study of the admissions in Poona and Kirkee for 14 years shows the great regularity with which enteric fever reaches its maximum in August and September, and it seems admitted that extraordinary swarms of flies are present in July and sometimes remain present until October, while inquiries made from old residents regarding the years of greatest prevalence of flies always result in years being named which prove to be years of severe enteric fever epidemics. The sanitary officer (Captain R. B. Ainsworth, R.A.M.C.) exposed half-sheets of "tangle-foot" in three kitchens for fixed periods, afterwards counting the number of flies, and there proved to be a remarkable correspondence between the number of flies and number of cases of enteric fever in the cantonment.

Tribute to an Indian Medical Service Officer.

Amongst the passengers who sailed from Bombay in the Austrian Lloyd's s.s. *Koerber* recently was Lieutenant-Colonel William Henry Burke, I.M.S., who is now retiring from India. Lieutenant-Colonel Burke's departure, says the *Times of India*, will be felt as a personal loss wherever he has served. Throughout the course of his career in India he set the very highest example of devotion to duty, and his whole service, in whatever circumstances, was marked by personal kindness and self-sacrifice, which are gratefully remembered by his patients in all parts of the Presidency. In every post he raised the standard of hospital work in the station. At Rajkot, 12 years ago, he immensely improved the West Hospital; as surgeon of the Gokaldas Tejpal Hospital, in Bombay, he devoted himself heart and soul to the advancement of that institution, leaving it in the very highest state of efficiency; as civil surgeon of Poona he was directly associated with the great improvements in the Sassoon Hospital, which is now second to none in India. His departure from India is a great loss to the Service and the public.

Outbreak of Small-pox at Rangoon.

Small-pox is prevalent in Rangoon, there being over 50 cases in the Infectious Hospital, of whom 2 are Europeans.

A Medical Conference in Burma.

At the invitation of the Burma branch of the British Medical Association a conference of medical practitioners was held recently at Rangoon under the presidency of Colonel W. G. King, C.I.E., I.M.S., Inspector-General of Civil Hospitals. The meetings took place in the General Hospital and the papers read amongst other subjects discussed the questions of the incidence, spread, and prevention of tuberculosis in Burma. The discussion was opened by the President, who advocated the teaching of school children the important hygienic principles involved in preventing disease generally, such as the avoidance of overcrowding and the badly ventilated houses, as well as the obnoxious and dangerous habit of spitting indiscriminately. Colonel King suggested the organisation of a sanitary service of trained natives of the country, who would know the ways of the people and he also urged the publication of pamphlets and the isolation of tuberculous patients. It is difficult to state to what extent and amongst what particular localities and amongst what class of people tuberculosis prevails in Burma. The general impression amongst medical men in that country is that the disease is largely on the increase and that it threatens to become a serious danger to both the Indian and the Burman, more especially the latter.

The St. John Ambulance Association.

The annual competitions for the Indian Volunteer Challenge Shield, presented by H.R.H. the Prince of Wales, and also the Indian Railways Ambulance Shield, presented by H.R.H. the Prior of the Order of St. John of Jerusalem, will take place at Jubbulpore in the Rajkumar College Hall on March 2nd. Colonel S. C. B. Robinson, R.A.M.C., principal medical officer of the Jubbulpore and Jhansi Brigades, has kindly consented to act as moderator of the competitions, and Lieutenant-Colonel R. J. Geddes, D.S.O., commanding the station hospital at Jubbulpore, will act as judge and examiner. The following officers of the Royal Army Medical Corps have volunteered their services on the committee: Captain J. H. Barbour, Captain A. M. Benett, Lieutenant J. R. Lloyd, and Lieutenant C. H. Denyer. The arrangements for the annual camp for the teams are being made by Mr. R. F. R. Cook, district traffic superintendent of the Great Indian Peninsular Railway, who has rendered valuable services to the St. John Ambulance Association by similar work in previous years. The present holders of the Volunteers Shield are the Bombay Volunteer Rifles, and of the Railway Challenge Shield the Oudh and Rohilkhand Railway. The North-western Railway and the Simla Volunteers have entered teams this year for the first time.

Feb. 14th.

Obituary.

EDWARD PERCEVAL WRIGHT, M.A. Dub. et Oxon., M.D. Dub., L.R.C.P. Irel., F.R.C.S. Irel., F.L.S.

The death of Professor Edward Perceval Wright, which took place on March 2nd, has snapped the chain between the last generation of Irish medical scientists and the present, and in many ways the deceased botanist had long been the most interesting link of association between the old and the new. He was possessed of the most varied scientific and scholarly attainments, and for a considerable period took an active part in the public life of Dublin and its University. He lived to the age of 76 years, and died in his rooms in the College which he had loved and served so well, and with which he had been intimately associated throughout all the more productive part of his career. He was born in Dublin in 1834, the son of Edward Wright, LL.D., a barrister-at-law. He graduated in Arts in the University of Dublin in 1857, being placed in the first class of B.A. candidates, and took the degree of M.B. in the following year; in 1859 he proceeded to the degree of M.A., and to that of M.D. in 1862. He supplemented his home University course by subsequent studies in the Universities of Paris, Vienna, and Berlin. He also obtained an *ad eundem* M.A. degree at Oxford. In 1859 he became a Licentiate of the Royal (then King and Queen's) College of Physicians of Ireland, and in 1862 he obtained by examination the Fellowship of the Royal College of Surgeons in Ireland. He entered for a time into professional practice, obtained the post of deputy Government medical officer in the Seychelles Isles, near the Mauritius, and was in charge of the leper establishment at Ile Curieuse. He returned to Dublin in 1866 and devoted himself more definitely to special scientific and literary pursuits. He became lecturer on botany at the medical school of Dr. Steevens's Hospital, where—by a somewhat Hibernian complication not infrequent in that period—he afterwards was appointed lecturer on ophthalmology. Thence he passed to the position of lecturer on zoology and director of the University Museum in his own Trinity College, and next, and lastly, to the professorship of botany, to which he was promoted in 1869. The latter chair he held up to 1904, when increasing feebleness of body obliged him to resign. He retained, however, up to the date of his death the office of Keeper of the Herbarium, in the arrangement and systematising of the materials of which he extended a large proportion of his time. Indeed, enthusiasm characterised his attention to each of the manifold series of subjects which became in turn the object of his attention. His devotion to biology bore excellent fruit in the earlier years of his scientific career; he enriched that field with many interesting discoveries, and displayed significant activity in exploding contemporary as well as ancient errors. In the more advanced years of his life he combined enthusiasm for antiquarian research with unfaltering zeal for vegetable and animal biology. He was President of the Royal Society of Antiquaries of Ireland for a period of three years, and for 16 years occupied the position of secretary to the Royal Irish Academy, of which he was one of the most active members during the whole of that time. He was also very enthusiastic in his patriotism and showed himself in advance of his time in his views on the Irish industrial movement, when public opinion was very far from being generally enlightened on the subject. His death-bed was attended by his distinguished nephew, Sir Almroth Wright, whose brother, the Rev. E. A. Wright, read the burial service at his uncle's funeral; and the remains were deposited in the family vault in Mount Jerome Cemetery beside those of his wife, which had been laid there 23 years before.

Medical News.

Trinity College, Dublin.—At the Final Medical Examination, Part II., held in Hilary Term, the following candidates were successful:—

Medicine.—Hilgard Müller, Marius A. Diemont, William P. Smiley, Hugh R. M. Ferguson, Beatrice Hamilton, Charles Pentland, John W. Tomb, Hans Fleming, Arthur C. Hallowes, James H. Crane, Cecil Grene, Edward P. Allman-Smith, Victor W. D. M'Gusty, Ernest W. G. Young, and Charles D. Hanan.

The Licence in Dental Science was granted to the following candidate:—

George Elliott.

The Medical Graduates' College and Polyclinic.—The Polyclinic held its annual general meeting on March 11th at 22, Chenies-street, W.C. Dr. C. Theodore Williams, in referring to the report for the year 1909, said it showed that the institution had plenty of material and was turning it to advantage. He did not know of any place which produced such a wealth of good clinical material in such a short time as the Polyclinic. They had had a fair year and the future seemed good; there were many new members, and 174 subscribers had increased their subscriptions. Dr. C. O. Hawthorne, chairman of council, said they had kept the Polyclinic flag flying, and that, in view of the difficulties with which the work in the early part of the year was surrounded, was no inconsiderable feat. But the activities of the College had been considerably extended, and the clinical lectures and demonstrations had never been better attended. They wished to cultivate the provision of instruction in subjects in which the medical practitioner might desire to gain further experience, and there had been practical classes in the use of the cystoscope and sigmoidoscope. Subscribers to the Polyclinic were enabled to come into contact with the whole teaching world of London in the profession for the sum of £1 1*s.* per annum. Sir Jonathan Hutchinson had desired to develop a scheme of teaching of considerable complexity, and if his scheme had been carried out there would have been a very large expenditure in the shape of advertising in foreign journals. The majority of the council felt it was impossible under the circumstances to carry out that large scheme, and ultimately it was modified. Dr. Dundas Grant said the balance-sheet which had been presented was satisfactory, and the council were to be congratulated on the progress of the Polyclinic.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—A report has been received from the Committee of Management recommending that the following institutions should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics: Eastern District Secondary School, Douglas, Isle of Man, and Haileybury College.

THE EDINBURGH I.M.S. DINNER.—This dinner will be held on Friday, May 27th, in the United Service Club, Edinburgh, and Sir Alexander Christison, Bart., will be in the chair. We are requested to give this timely notice for the benefit of officers in India who may contemplate taking furlough. Colonel Arnott, 8, Rothesay-place, Edinburgh, will be glad to hear from those wishing to be present.

THE ESSEX COUNTY HOSPITAL, COLCHESTER.—The committee of this hospital in its nineteenth annual report points out that 1909 was the first year in the history of the hospital in which 100 beds have been available for the reception of patients, and it makes a strong appeal for financial help to prevent reduction in the useful work which the hospital is doing. They regret an increase of expenditure over income, which raises the accumulated deficit to over £4000. The annual subscriptions received during 1909 amounted to £875 14*s.*, the highest amount reached since 1891, and the donations to £880 13*s.* 10*d.* The legacies amounted to £65 only.

THE EIGHTH INTERNATIONAL PHYSIOLOGICAL CONGRESS.—This congress will be held at the Physiological Institute of the University of Vienna, with Professor S. Exner as President, from Sept. 27th to 30th, and a preliminary prospectus printed in the English, French, German, and Italian languages has been issued. In connexion with the congress, from Sept. 26th to Oct. 1st an exhibition of physiological apparatus will be held. Communications with regard to the Congress should be sent to Herrn Assistenten F. Hauser, Wien IX., Physiologisches Institut Währingerstrasse 13, and information respecting the exhibition can be obtained from Herrn Hofrat H. H. Meyer, Pharmakologisches Institut, Wien IX., Währingerstrasse 13.

INSTRUCTION ON TUBERCULOSIS IN NORTH DEVON.—During last week a short course of lectures on Pulmonary Tuberculosis has been delivered at the town hall, Lynton, by Dr. J. Tatham, lately Superintendent of Statistics at the General Register Office, London. The lectures, which were largely attended, have aroused much interest in the town and its neighbourhood. In his last lecture Dr. Tatham gave an account of the splendid preventive work accomplished during the last half-century in Lancashire by the Manchester and Salford Sanitary Association, and expressed the hope that some such society may shortly be established in Lynton and Lynmouth, so that *vivâ-voce* instruction may be afforded to the inhabitants, especially those having the care of children, as to the dangers of tuberculosis, and as to the best means of preventing it.

BRIGHTON AND THE ROYAL SANITARY INSTITUTE.—In connexion with the Twenty-fifth Congress of the Royal Sanitary Institute, which is to be held in Brighton in September, a meeting convened by the mayor, Councillor E. Geere, drew a large attendance on March 2nd, when the first public discussion of the subject of the congress was held. The meeting was representative of both Brighton and Hove, and the executive committee that was appointed consists of a number of residents from both towns, distinguished in the medical profession or in the public service. The programme of the congress was outlined by Mr. H. D. Searles-Wood, chairman of the Royal Sanitary Institute, Professor Henry R. Kenwood, and Dr. P. Boobbyer. The hygiene of the child will form an important feature of the congress. Dr. A. Newsholme, formerly medical officer of health of Brighton, has promised to give a lecture, as has Professor Alexander Hill. It is expected that quite 400 sanitary authorities will be represented at the congress, and it is apparent that the delegates will receive a very cordial and hospitable welcome to Brighton.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council of the above College held on March 10th diplomas of Member were conferred upon the following two gentlemen who have passed the necessary examinations and have now complied with the by-laws, viz.: Frank Howson, Oxford, Manchester, and Durham Universities; and Samuel Burns Walker, M.B. Toronto, Toronto University. The Licence in Dental Surgery was conferred upon Mr. Henry David Grant, Middlesex and National Dental Hospitals, who has now complied with the by-laws for the Licence.

THE GENERAL HOSPITAL, BIRMINGHAM.—In issuing its annual report for the year 1909 the committee of this hospital makes an earnest appeal for an increased subscription list. The number of in-patients under treatment at the hospital last year was 5511, the daily average of patients in the hospital being 304. The out-patients numbered 64,318. It is satisfactory to note that 2370 cases after receiving first-aid were referred to general practitioners, dispensaries, clubs, or elsewhere, according to the circumstances of the patient. The total expenditure for the year was £27,122. At the Jaffray Branch Hospital 390 patients were treated during the year.

THE SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—The annual meeting of the subscribers of this hospital was held on March 2nd under the presidency of Sir Henry Lopes. The seventieth annual report stated that during 1909, 1482 in-patients had been admitted. 2599 out-patients had been treated. The financial statement showed a deficit on the year of £1650, and this, together with the previous adverse balance of £3496, made a total deficit of £5146. The committee suggested that invested funds to that amount should be realised in order to discharge this deficiency, and this the subscribers unanimously decided to do. The committee recorded with regret the death of Mr. Connell Whipple, the honorary consulting surgeon, and add that it is proposed to erect some necessary improvement in the hospital as a memorial to one who for nearly 40 years had given his services to the institution.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—A council meeting of this association was held at 34, Copthall-avenue, E.C., on March 10th, Dr. D. B. Balding being in the chair. Various matters affecting the interests of Poor-law medical officers were considered; among others, whether it was one of the duties of the district medical officer to give certificates gratuitously for the use of education authorities. Mr. J. B. G. Gidley-Moore (Ongar) stated that in his district it was customary for the education authority to pay for these certificates. The council were unanimously of opinion that this was the equitable arrangement. The honorary secretary reported that an Association of Medical Officers of Health had just been formed to protect the interests of part-time officers. One of its chief objects was to obtain the rescindment of Minute 234, passed at the last meeting of the representative body of the British Medical Association. He had been asked to bring the matter before the Poor-law Medical Officers' Association with a view to joint action, as their interests were almost identical with those of part-time medical officers of health. It was proposed by Dr. F. S. Toogood and seconded by Mr. A. A. Napper:—

> That the honorary secretary be instructed to approach the honorary secretary of the Association of Medical Officers of Health with a view to united action in defence of the just rights of the part-time medical officers in both services.

This was carried unanimously, and satisfaction was expressed when the honorary secretary stated that he had been elected on to the council of the new association. The honorary secretary was authorised to make arrangements for the annual meeting at Halifax in June, and the advisability of holding a second meeting in London during the British Medical Association week was considered. The honorary secretary said he had received numerous letters from country members urging this course, and it was finally decided to adopt it. The honorary secretary was instructed to write to the medical secretary of the British Medical Association to ascertain whether such a meeting could be held in conjunction with the meetings of the latter association.

The Tuberculosis Exhibition, which we have described on several occasions, will be held in the Bermondsey Settlement, Farncombe-street, S.E., from March 22nd to April 2nd. It will be opened every day from 10 to 10 and admission will be free to all.

The Weston-super-Mare Hospital.—At the annual meeting of the subscribers of this institution which was recently held, it was stated that a new isolation block, which has been presented by Mr. R. H. Hooker, is now nearly completed, and will be opened this spring.

The Queen's Hospital, Birmingham.—The report of this hospital for the year 1909, which was submitted to the annual general meeting of the governors on March 17th, states that the general work of the hospital during the year had been satisfactory, but the demands on its resources had never before been so heavy and so constant. It is noted that the erection of the new medical block and the structural alterations on the surgical side have fully justified the expenditure entailed. At the same time the committee appeal for increased financial aid in order that the demands upon the institution may be fully met. The number of patients treated during the year was as follows:—Remaining in the wards on Dec. 31st, 162; admitted by registration, 1850; accidents and urgent cases admitted without registration, 1116; making a total of 3128. The number of out-patients admitted by registration was 20,218, and the number of accidents and urgent cases admitted without registration or ticket (including 3736 dental cases) was 19,111, making a total of 39,329.

The Medical Society of London.—The Medical Society of London held its 137th anniversary dinner in the Whitehall Rooms of the Hôtel Métropole, London, on March 9th, with Dr. Samuel West, the President of the society, in the chair. The guests numbered nearly 150 and included the Director-General of the Navy Medical Service, the Director-General of the Army Medical Service, the President of the Royal College of Surgeons of England, the President of the Royal Society of Medicine, the Master of the Society of Apothecaries, the President of the West London Medico-Chirurgical Society, the President of the Irish Medical Schools and Graduates' Association, the President of the Medico-Legal Society, Sir John Tweedy, Mr. C. B. Lockwood, Dr. Theodore Williams, Mr. C. A. Ballance, Mr. E. M. Corner, Dr. StClair Thomson, Mr. J. Langton, Sir John Broadbent, Dr. F. J. Poynton, Dr. Lewers, Mr. H. J. Waring, Mr. Donald Armour, Dr. F. de Havilland Hall, Dr. F. Parkes Weber, Mr. W. H. Battle, Mr. Charles Ryall, Dr. W. Hale White, Dr. W. Camac Wilkinson, Dr. A. F. Voelcker, and the honorary secretaries, Dr. Leonard Guthrie and Mr. V. Warren Low. The Chairman, in proposing the toast of "The Society," went in full detail into its history, and justified the sentiments of the members of the society which caused them to decline to be amalgamated with the Royal Society of Medicine. The chairman said that the sentiments which had gathered round the society had to be reckoned with and were an important factor in the consideration of the negotiations with the Royal Society of Medicine a short time ago. Something turned upon the point whether the Medical Society would not have lost its identity if it had been merged in the Royal Society of Medicine, which was an association or amalgamation of special sections of medicine and surgery. The result was that sentiment prevailed and the Medical Society remained outside the amalgamation. The Chairman concluded his speech with an account of the numbers of Fellows who had joined the Medical Society and stated that the financial position was in every way satisfactory. Mr. Charters Symonds then proposed the toast of "The Guests and Kindred Societies," which was replied to by Mr. Butlin, the President of the Royal College of Surgeons, who said that there was no kindred society to the Medical Society, but there were societies which had imitated it. He thought on the whole that the society had done quite right in retaining its original and independent constitution. Sir John Tweedy also responded to this toast and congratulated the members on the fact that for 140 years their society had represented the great Hippocratic position and was now more active than ever it was. After Dr. de Havilland Hall had proposed the health of the President, that gentleman replied, and concluded by proposing the health of the two honorary secretaries, who acknowledged the toast, and explained, in so doing, how indebted the society was to the work of the librarian, Mr. G. Bethell.

Presentation to a Medical Man.—At the annual smoking concert of the Devon Albion Football Club, which was recently held at the Royal Hotel, Plymouth, Mr. James Edward Cheyne Wilson, L.R.C.P. & S. Edin., was presented with two silver fruit dishes as a mark of esteem and appreciation for his services as honorary surgeon to the club for the past 18 years.

Worthing Children's Care Society.—The real good that can be done by a children's care society is shown by the record of the first year's work of such an organisation at Worthing. During 1909 the death-rate of infants under one year of age in the borough was only 75 per 1000, against 109 per 1000 in 1908. This appreciable decrease is attributed in no small measure to the work the society has been able to perform. The society gives relief only in cases of genuine distress, and its complete organisation assists the prevention of overlapping. During the year 1909 many cases of extreme distress were cared for, infants and their mothers were fed, half-clothed children were supplied with boots and clothing, and many children were, and are being, fed at school daily with hot milk and bread. As a result of the society's efforts the attendances at school have increased by 3 per cent. At the annual meeting of the society on March 8th a resolution was carried inviting the coöperation and support of the town council and education committee, the opinion being expressed that if the members of these bodies actually realised what an adjunct the society was to their work they would all be interested in it. It is to be hoped that the local authorities will welcome the opportunity of coöperating with such a society; its first year's work certainly has more than justified its existence.

London School of Clinical Medicine.—The annual dinner of the London School of Clinical Medicine was held at the Hotel Cecil, Strand, on March 15th, with Sir James Crichton-Browne in the chair. The Chairman, in proposing the toast of "The School," said the institution was an entirely new departure, being the grouping together of the staffs and clinical material of certain hospitals, and having for an end post-graduate teaching. Education, he urged, was for the educable never at an end; medical men were always learning and unlearning. The omniscience of youth had to give place to the chastened dubiety of age, and incessant readjustments had to be effected to an ever-changing environment. The doctor who would keep abreast of his profession in these days must go to school again from time to time, but until lately there was no school for him to go to. It was the great merit of the London School of Clinical Medicine that it had provided a seminary in which practitioners might find opportunities of carrying their education beyond the mere bare qualifying standard. The "Dreadnought" Hospital at Greenwich was a veritable "zoological garden" of disease with a rich and varied assortment of the many ills that flesh was heir to, and in addition possessed the advantage of sheltering patients who were suffering from all the multifarious forms of tropical disease. The school, he claimed, offered admirable facilities for laboratory work in conjunction with clinical observation, and was especially suited for the revision of medical knowledge from time to time in the light of progressive research. Over 200 medical men from all over the world had already sought out the school, and it was clearly evidenced that they were not disappointed in thus acting by reason of the fact that their recommendations had resulted in a steadily increasing number of entries to the school. The singular advantages offered by the institution were admitted by the Government, which recognised its certificates for attendance during study-leave being accepted by the Admiralty, the War Office, the India Office, and the Colonial Office. The toast was responded to by Sir Dyce Duckworth. Sir Malcolm Morris proposed the health of the guests and alluded to the pleasure felt by the staff of the school at welcoming such men as Sir Archibald Geikie (President of the Royal Society), Inspector-General Porter, and Surgeon-General Gubbins, respectively heads of the Navy and Army Medical Services. These gentlemen made suitable and brief replies, and the evening concluded with some humorous remarks from Dr. George Ogilvie.

THE HEALTH OF NEWQUAY (CORNWALL).—The medical officer of health of Newquay (Dr. A. Hardwick) in his annual report for 1909 states that the death-rate during the year was 8·04 per 1000, and the birth-rate was 13·3 per 1000. Dr. Hardwick states that the infectious diseases hospital had remained closed for the sixth consecutive year. The population of Newquay in 1901 was 3115; in 1909 it had increased to 4350.

ASSOCIATION OF CERTIFICATED DISPENSERS.—The annual meeting of this association was held in the court-room of the Apothecaries' Hall, on March 10th, Mr. Montagu Smith presiding. The honorary secretary, Mr. A. Howell, submitted his annual report, which showed a continual growth in the membership, the association being about 350 strong. It recorded that a great meeting had been held in November last at which a resolution was passed urging the Society of Apothecaries to use its influence with the Pharmaceutical Society in reference to the making and passing of by-laws for the registration of the assistants by the powers conferred on the latter authority under Section 4 of the Poisons and Pharmacy Bill, 1908. Negotiations are still proceeding.

THE PERMANENT CARE OF THE FEEBLE-MINDED.—The Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-Minded, which is in urgent need of funds for the purpose of building laundries and workshops, is doing an excellent work in an excellent cause. At the present time there are 215 boys, girls, young men and women in charge of the society. The Government inspector's latest official report shows that the society is satisfactorily dealing with a difficult problem, while as a result of a recent visit from the inspector the society has received a letter expressing his warm approval of the way in which the colony is managed. Dr. J. J. Cox and Miss Dendy are the honorary secretaries. Subscriptions should be sent to Miss Dendy, 13, Clarence-road, Withington, Manchester; or to the honorary treasurer, Mr. S. Gamble, Wilbraham-road, Fallowfield, Manchester.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND: NEW EXAMINATION HALL.—The result of the competition for the building of a new Examination Hall to be erected on the site of the four houses, Nos. 8, 9, 10, and 11, Queen-square, Bloomsbury, for which seven architects were invited to compete, was on Tuesday last made known at a joint meeting of the Royal Colleges of Physicians and Surgeons, when Mr. T. E. Collcutt, who was appointed assessor, awarded the first premium—viz., the appointment of architect for the new Examination Hall—to Mr. A. N. Prentice, F.R.I.B.A., of Hastings House, Norfolk-street, Strand. The three other premiums—viz., £100, £75, and £50—were respectively awarded to Mr. Henry T. Hare, F.R.I.B.A., 13, Hart-street, Bloomsbury; Mr. E. Stanley Hall, 54, Bedford-square; and Mr. J. W. Simpson, F.R.I.B.A., 3, Verulam-buildings, Gray's Inn.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Naval Medical Service.

IN the statement which Mr. MCKENNA, the First Lord of the Admiralty, has issued explanatory of the Navy Estimates for 1910–11, are several allusions to the Naval Medical Service. "The Committee appointed last year to inquire into the Naval Medical Service," Mr. MCKENNA writes, "has submitted a most valuable report, and their recommendations, some of which are of the greatest importance and of far-reaching scope, are at present receiving the detailed consideration of the Board of Admiralty. It is hoped that steps will be taken to give effect to many of them at an early date. I should like to take this opportunity of expressing the thanks of the Admiralty to Admiral Sir JOHN DURNFORD, K.C.B., D.S.O., and his colleagues, and especially to Sir WILLIAM WATSON CHEYNE, Bart., C.B., and Mr. G. L. CHEATLE, C.B., who gave up so much of their private time to the consideration of the important questions laid before the committee." In his statement with regard to the work done in 1909–1910 Mr. MCKENNA also refers to the recommendations of the committee. He states that in the meantime certain minor suggestions for the improvement of the regulations for entry and examination, and for training after entry have already been adopted, and naval medical officers undergoing post-graduate courses in the London hospitals are now accommodated at the Royal Naval College, Greenwich. He also states that arrangements had been made with the Sanitary Commissioners at Gibraltar for the admission to their laboratories of naval medical officers stationed at that port or belonging to visiting ships. As these laboratories are excellently equipped with up-to-date appliances, it is anticipated that they will be of great use to the Naval Medical Service both for research work and instructional purposes.

Defective Teeth in the Navy.

The subject of defective teeth in the Navy is touched upon in the memorandum on the Navy Estimates. In consequence of the number of invalidings from the Navy on account of defective teeth, it appears that consideration has been given to the question of how best to deal with this source of wastage. The facilities for dental examination and treatment of boys and men at the home ports prior to their being drafted away have been increased, and steps have been taken to provide against men being invalided out of the service solely on account of defects of the teeth which might be remedied by treatment.

Parochial Medical Officers (Scotland) Bill.

Mr. CATHCART WASON's Parochial Medical Officers (Scotland) Bill is published. In a memorandum to it it is stated that under the Poor-law (Scotland) Act, 1845, medical officers of poorhouses cannot, under a decision of the Court of Session, be removed from office without the consent of the Local Government Board (Scotland), while outdoor medical officers may be dismissed at short notice by their respective parish councils without reason assigned. It is proposed by this Bill to assimilate the law of Scotland to that of England and Ireland and make the consent of the Local Government Board necessary for the dismissal of all parochial medical officers. Mr. WASON in bringing the Bill forward has the support of Mr. AINSWORTH, Mr. BEALE, Dr. CHAPPLE, Sir HENRY CRAIK, Viscount DALRYMPLE, Sir JOHN DEWAR, Mr. HARMSWORTH, the Marquis of TULLIBARDINE, Mr. MACKINDER, and Mr. YOUNGER.

The Nurses (Registration) Bill.

The Nurses (Registration) Bill, which has been introduced into the House of Commons, contains no less than 24 clauses. Its main object is to institute a Nurses' Register, which will be under the supervision of a General Nursing Council, but before a nurse's name may be registered she must have certain experience and qualifications.

It is proposed that the General Nursing Council shall be a body corporate, the full title of which shall be "the General Council for the Registration of Nurses in the United Kingdom." It will contain three elements—nominees of the Privy Council, registered medical practitioners, and registered nurses. The medical element and the nursing element will pretty nearly balance each other. The strength of the new council will be 21 persons. Three of these will be nominated by the Privy Council, and one of them at least shall be a woman. The medical representation on the new council will be as follows: (1) Three registered medical practitioners, one to be appointed by the Local Government Board for England, one by the Local Government Board for Scotland, and one by the Local Government Board for Ireland; (2) three registered medical practitioners to be appointed by the British Medical Association, one to be resident in England, one to be resident in Scotland, and one to be resident in Ireland; (3) one registered medical practitioner to be appointed by the Medico-Psychological Association; and (4) one registered medical practitioner to be appointed by the medical superintendents of the fever hospitals which may be recognised as training schools for nurses in fever nursing under this Act. A ninth medical member may be [illegible]ed, as registered male nurses may either elect one of their own number or else a medical man as their representative.

Registered women nurses are given power under the Bill to elect eight of their number as direct representatives, but provision is made that a proportion of these shall have experience as matrons of general training schools for nurses. The registered nurses resident in England will elect four of the eight, those in Scotland two, and those in Ireland two. Nurses registered in the Mental Nurses Register will elect one of their number as their direct representative.

It is impossible to institute any register of nurses until a nursing council is brought into existence. It is therefore proposed that in place of the direct representatives of registered nurses there shall be 14 persons appointed by various organisations interested in nursing. Five places are to be given to matrons in the first council under this proposal. Eight seats will be allocated to nurses appointed by various nursing associations. The Royal British Nurses' Association may appoint either a medical practitioner or a nurse. The term of office for a General Nursing Council will be five years.

In order to institute and maintain "the Nurses Register" Clause 10 of the Bill defines the proposed duties and powers of the General Nursing Council. These are set forth as follows: "(1) To frame rules—(*a*) regulating their own proceedings; (*b*) regulating the issue of certificates of registration and the conditions of admission to the register of nurses; (*c*) regulating and supervising the course of training and the conduct of examinations and the remuneration of the examiners; (*d*) regulating the admission to the register of persons already in practice as trained nurses *at the commencement of this Act; (e)* regulating and supervising and restricting within due limits the practice of registered nurses; *(f)* defining the particulars required to be given in any notice under this Act: (2) to appoint examiners and inspectors: (3) to decide upon the places where and the times when the examination shall be held: (4) to issue and cancel certificates of registration: (5) to publish annually a register of nurses containing the names, addresses, and qualifications of nurses who have been duly registered under this Act: (6) to decide upon the suspension or removal from the register of the name of any nurse for any breach of the rules and regulations from time to time laid down under this Act by the Council or for conduct disgraceful in a professional respect, and also to decide upon the restoration to the register of the name of any nurse so suspended or removed: (7) to take proceedings against persons guilty of offences under this Act; and generally to do anything necessary for the due and proper carrying out the provisions of this Act."

The rules made by the General Nursing Council are subject to the approval of the Privy Council. The Nursing Council will delegate certain of its duties referring to the examination and admission of candidates to divisional committees for England, Scotland, and Ireland.

Provision is made by Clause 11 of the Bill for the admission of existing nurses to the Register. It runs as follows: "Any person who within three years from *the commencement of this Act* claims to be registered thereunder shall be so registered, provided such person is at least twenty-one years of age and is of good character, and either—(1) holds a certificate of training for such period as may be prescribed by the rules framed under the provisions of the Act from a hospital or from hospitals approved by the Council, or from an institution or institutions which the Local Government Board recommend and certify to be wholly or partly maintained out of rates; or (2) holds a certificate of similar training as a nurse authorised by the Lords Commissioners of the Admiralty for the sick berth staff of the Royal Navy, or as a nurse authorised by the Army Council for soldiers of the Royal Army Medical Corps; or (3) holds a certificate from the Local Government Board for Ireland that she possesses the qualifications prescribed for the purposes of section fifty-eight of the Local Government (Ireland) Act, 1898, or holds a certificate from the Local Government Board for Scotland that she possesses the qualifications prescribed by that Board; or (4) produces evidence satisfactory to the Council of training prescribed by the rules framed under the provisions of this Act, and has, in addition, been for at least three years in *bonâ fide* practice as a nurse or employed as a nurse in a naval or military hospital."

At the expiry of three years after the Bill comes into operation, admission to the Register will only be gained by those nurses who have undergone a hospital curriculum and passed an examination. Clause 12 provides that after the three years have expired "any person who claims to be registered under this Act shall be entitled to be so registered, provided that such person has had not less than three years' training under a definite curriculum prescribed by the Council in the wards of a hospital or of hospitals approved of by the Council or in an institution or institutions which the Local Government Board recommend and certify to be wholly or partly maintained out of rates, or has been trained as a nurse under regulations authorised by the Lords Commissioners of the Admiralty for the sick berth staff of the Royal Navy, or as a nurse authorised by the Army Council for soldiers of the Royal Army Medical Corps for such term as may be fixed by the Council, and that such person has passed such examination as the Council may prescribe."

There will be three registers—(1) a general register of women nurses registered under the Act; (2) a supplementary register of male nurses, similarly registered; and (3) a supplementary register of asylum-trained nurses to be called the Mental Nurses' Register, and all registered nurses must pay an annual fee of 2*s.* 6*d.*

Clause 18 imposes penalties on persons who contravene the terms of the Bill by assuming the title of "registered nurse" when their names do not appear on the Register.

Clause 23 lays down that nothing contained in the measure shall be considered as conferring any authority to practise medicine or to under take the treatment or cure of disease.

Industrial Poisoning.

The preliminary tables of cases of industrial poisoning, fatal and non fatal accidents, and dangerous occurrences in factories and workshops during the year 1909 have been issued by the Home Office. They are subject to correction. The tables record 553 cases of lead poisoning, involving 30 deaths, during the year. This compares with 646 cases in 1908 and 32 deaths. In 1909 there were 9 cases of mercury poisoning, 3 of phosphorus poisoning, and 4 of arsenic poisoning. None of these had a fatal termination. There were 56 cases of anthrax, and 12 of these were fatal. In 1908 the number of cases was 47 and the deaths 7.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 9TH.

Infectious Disease in Germiston, Transvaal.

Mr. O'GRADY asked the Patronage Secretary to the Treasury (who answered questions on behalf of the Under Secretary of State for the Colonies) whether he could supply information regarding an outbreak of infectious disease in the Germiston municipality of the colony of the Transvaal from June to August, 1909; whether the endemic originated in the native compound and then spread to the white population; whether the report of the medical officer of health was to that effect; whether he was aware that over 1000 cases of the same disease occurred in the adjoining municipality of Johannesburg; and whether the medical officer of health there was held responsible, and what action, if any, was taken against him. The honourable Member also asked whether the honourable gentleman's attention had been called to the complaints made by doctors holding the position of medical officer of health under the Germiston town council in that they were dismissed summarily by the council, and that the effect of such dismissal had been damage to professional reputation; whether the dismissal of one of these Germiston medical officers of health in September, 1909, arose out of a report presented to the council that an infectious disease had broken out among the natives in the compounds; and, if so, what steps would be taken to protect medical officers of health having to perform duties in the compounds from the risk of summary dismissal and loss of reputation as the result of presenting a report which, though a statement of fact, might conflict with the economic interests of the mine-owners.—The MASTER of ELIBANK replied: I have no information on the subject of either of the questions addressed to me by my honourable friend. Local matters of this kind are not reported to the Secretary of State as they are matters for the Transvaal Government to decide upon their own responsibility.

Mr. O'GRADY: Are these cases not reported to the Secretary of State?—The MASTER of ELIBANK: The Transvaal having a responsible Government the Secretary of State is not made aware of the circumstances to which the honourable Member refers.

Mr. O'GRADY: Is not the medical officer of health appointed directly under the supervision of the Secretary of State?—The MASTER of ELIBANK: No. I think he is appointed by the Transvaal Government.

The Medical Inspection of School Children.

Mr. RAMSAY MACDONALD asked the President of the Board of Education whether 63 public vaccinators had been appointed as medical inspectors for elementary schools under the Education (Administrative Provisions) Act by local education authorities; whether the Board of Trade agreed that these two offices should be held by the same person; and whether any communication to that effect had been made to local education authorities.—Mr. RUNCIMAN answered: The reply to the first part of the question is, so far as the information of the Board goes, in the affirmative. I think that in the second part of the question my honourable friend intended to refer, not to the Board of Trade, but to the Local Government Board, which prescribes the qualifications of public vaccinators, and this part of the question should be addressed to the President of that Board. With reference to the third part of the question, it is the practice of the Board when they find a reference to vaccination in the schedule of medical inspection adopted by a local education authority to remind that authority that care must be exercised on this point and that the information obtained by medical inspection should in no case be used as the basis for action under the Vaccination Acts. I may add that the Board of Education is not in a position to require of local education authorities that members of their medical staffs should refrain from holding other public appointments.

Sir GILBERT PARKER: Is there any saving in salaries effected by the combination of the two offices of medical inspector and public vaccinator?—Mr. RUNCIMAN: I have no official information, but I should think it is quite possible.

Mr. FRANCE asked the right honourable gentleman whether he had received recent reports from education authorities relating to medical inspection; and whether he could make any statement as to the general results of the work done under this head.—Mr. RUNCIMAN replied: The reports received from local authorities relating to the work of medical inspection during the year 1908 were reviewed in the annual report of the chief medical officer of the Board for that year, which was issued last January. A few reports have been received in respect of the year 1909, and these will in due course be reviewed in the next annual report of the chief medical officer. The Board has reason to believe that satisfactory progress is being made, but I am not in a position to make any statement as to the results of medical inspection beyond what is contained in the report I have referred to.

Mr. FRANCE: May I ask whether the reports indicate that all the local education authorities are carrying out the scheme to the satisfaction of the Board?—Mr. RUNCIMAN: Yes, sir; our information is that all the local education authorities are already fulfilling their duties under the Act, or taking such preliminary steps as will enable them to fulfil them at the earliest possible moment.

The Condition of Children's Teeth.

Mr. CHARLES BATHURST asked the President of the Board of Education whether he had received any official information showing, as the result of the medical inspection of children in the elementary schools, that an average of over 35 per cent. of such children were suffering from more or less defective teeth, and that the medical officers were almost unanimous in attributing such condition to the consumption of white bread made of flour from which the germ had been mechanically extracted; and, if so, whether steps would be taken through the medium of the local education authorities to bring the cause of this condition to the notice of the parents with a view to its amelioration.—Mr. RUNCIMAN replied: A summary of the information at the disposal of the Board on the subject of the condition of the teeth of those children in public elementary schools who were medically examined in the year 1908 will be found in the recently issued report of the Board's chief medical officer (pp. 53–57). The reports showed that the number of children with defective teeth is considerable, but the information at present at the disposal of the Board is not sufficient to enable it to form a precise estimate of the percentage of children in public elementary schools who are suffering from defect in teeth. I am not aware that any medical officers have been so rash as to attribute the defects in children's teeth solely to the consumption of any one particular article of food.

Mr. BATHURST: Is it not advisable to institute an inquiry as to what is the underlying cause of these defective teeth.—Mr. RUNCIMAN: I am afraid that these defects are not peculiar to children in elementary schools alone. We cannot start an inquiry until medical inspection has covered its ground.

Mr. BATHURST: Does not the right honourable gentleman find it a little difficult to justify the expenditure upon medical inspection of school children unless some steps are taken to remedy the more serious defects disclosed by such inspection?—Mr. Runciman: That would be carrying medical inspection much further than is contemplated by the Act, but it is not outside the bounds of possibility.

The Health of the Territorials in Camp.

Sir William Crossley asked the Secretary of State for War whether he would make an order to provide wood tent bottoms for Territorial camps, so as to minimise the danger of pneumonia and phthisis to men usually employed in warm factories and sleeping in warm houses.—Mr. Haldane wrote in reply: The regulations provide that if, in the opinion of the medical authorities, the conditions prevailing when camps are in progress render it necessary to provide tent bottoms, issue of tent bottoms may be made. They are not ordinary articles of camp equipment. Waterproof ground sheets are issued when tent bottoms are not supplied.

Disease in the Army.

Speaking in Committee of Supply on Army Estimates,

Mr. Churchill said that there had been a great improvement in the social and moral welfare of the soldier. In connexion with the question of disease, within a decade the effective strength of the army had been raised through the diminution in the sick rates by 5700 and the waste through death and invalidity had decreased by 2900 men per annum, or at the rate of a division of troops for the decennial period. Within four years these changes had allowed of the reduction of hospital beds at Home Stations by over 2200, with a similar, or perhaps a greater, reduction in the hospital accommodation required in India. During the ten years 1889–98 the average number of deaths per 1000 in the army in the United Kingdom was 4·32. In 1908, the last year for which figures were available, the average number of deaths per 1000 was only 2·50, a reduction of nearly one-half on the average of ten years ago. The constantly sick and men continually in hospital—and this was a form of expenditure for which the country got no return in military strength—averaged for the ten years 1889–98, 41·14, while in 1908 the rate was 23·94. The decrease had been even more remarkable, because the figures were more serious, in regard to India. In India during the ten years 1889–98 the rate of deaths per 1000 was 16·43. In 1908 it was 9·27, while the constantly sick during the ten years' period were 89·61 per 1000, but in 1908 the rate was 45·81. These were very remarkable figures indeed.

Thursday, March 10th.

The Traffic in Opium.

Mr. Theodore C. Taylor asked the Secretary of State for Foreign Affairs whether he had, on behalf of His Majesty's Government, accepted the invitation of the United States to an International Conference at The Hague on the subject of international regulation of the traffic in opium and kindred drugs; and, if so, when would the conference take place.—Sir Edward Grey replied: The proposal is still under the consideration of His Majesty's Government.

Mr. Theodore C. Taylor also asked the Under Secretary of State for India whether, seeing that the production of opium in China was being very largely restricted, he was now prepared to respond to the desire of the Chinese Government to shorten the period of nearly eight years during which India was to continue to send opium to China.—Mr. Montagu answered: In undertaking in response to the request of the Chinese Government that the Indian opium traffic with China should, if certain conditions were fulfilled, be brought to a close within ten years, His Majesty's Government contemplated a settlement that would be final, and that was within the capacity of both countries to carry out, with due regard to the magnitude of the changes involved and interests affected. In this spirit it was accepted by the Chinese Government, which has not expressed a desire to re-open the question. The strict fulfilment of India's share of the agreement has imposed serious burdens on the Indian Government and on the Native States of India. His Majesty's Government are not disposed to disturb the settlement arrived at with the Chinese Government.

Mr. Theodore C. Taylor also asked the Under Secretary of State for the Colonies what steps were being taken to bring to a close the habit of opium-smoking in Hong-Kong and the Straits Settlements.—Colonel Seely replied: In the case of the Straits the Colonial Government are putting themselves in a position in which they will be able to exercise very considerable control over the traffic in opium. As regards Hong-Kong I understand that the last remaining divans were closed on Feb. 28th. The House may rest assured that both His Majesty's Government and the Colonial Governments will continue to exercise energy and vigilance in pursuance of their policy, and the Governors of Hong-Kong and the Straits shall be asked to include in the annual reports of their respective colonies an account of the measures taken to regulate and restrict the consumption of opium and of their effect.

Monday, March 14th.

Belgium and the Investigation of Sleeping Sickness.

Mr. Rees asked the Under Secretary of State for the Colonies whether the King of the Belgians had provided money for investigation into, and preventive measures against, sleeping sickness; and whether the British authorities engaged in the like investigation and measures were coöperating with the Belgian authorities in this behalf.—Colonel Seely replied: I understand that after consultation with King Albert, the Belgian Minister of the Colonies has decided to organise an expedition to go to the Congo to study sleeping sickness, and to find means, if possible, to remedy it. I have no doubt that the British authorities engaged in the investigation and prevention of the disease will be ready to coöperate as far as is practicable with the Belgian expedition.

The Lunacy Acts.

Mr. Pickersgill asked the Secretary of State for the Home Department whether he would consider the advisability of making inquiry, by means of a Select Committee or otherwise, into the working of the Lunacy Act, 1890.—Mr. Masterman (on behalf of Mr. Churchill) replied: Much evidence on the working of the Lunacy Acts was given before the Royal Commission on the Feeble-minded, and its recommendations for the amendment of the Lunacy Law as well as various amendments recommended by the Commissioners in Lunacy will be brought forward for consideration when there is an opportunity for legislation. The Secretary of State is not at present advised that there is occasion for further inquiry.

The Case of Mr. H. W. Cox.

Mr. Bottomley asked the Prime Minister whether his attention had been called to the sad condition of Mr. H. W. Cox, an inventor of, and experimenter with, apparatus for the application of the X rays in surgical operations; and whether he would consider the question of advising the grant of a pension from the Civil List.—Mr. Asquith answered: A substantial grant from the Royal Bounty Fund was awarded in the case referred to last April.

Mr. Bottomley: In view of the fact that since the grant was made another operation has been performed, involving, I believe, the amputation of an arm, may I ask the Prime Minister whether he will give the amount of the grant further consideration?—Mr. Asquith: I will give the most careful consideration to any representation that may be made.

The Control of Midwives in Glasgow.

Mr. Whitehouse asked the Lord Advocate whether his attention had been called to a report by the clerk to the parish of Glasgow making allusion to the manner in which the establishments of midwives were used for the encouragement of baby farming; and whether, in order to deal with the evils described in the report, and to insure the protection of infant life contemplated by the Children Act, he would introduce a Departmental Bill requiring midwives to notify the authorities in all cases where they placed a child in the care of a person other than its parents.—Mr. Ure replied: The attention of the Secretary for Scotland has been called to the report referred to by my honourable friend. Inquiries are being made on the subject. Meanwhile, I cannot promise any legislation.

Tuesday, March 15th.

The Formaldehyde Process of Meat Preservation.

Mr. Hamilton Benn asked the President of the Local Government Board whether he had any information in regard to the formaldehyde process, which was largely used in preserving chilled meat in transit; whether his attention had been directed to the Food Report, No. 9, to the Local Government Board, showing its dangerous effects; and whether he was taking any and, if so, what, steps to prohibit its use in connexion with meat imported into this country.—Mr. Burns replied: The subject is one which has been carefully investigated by my department, and detailed information regarding the process is contained in the published report referred to. That report showed that the process had been used in such a way as to introduce material quantities of formaldehyde into the meat. To this there is serious objection; but I am advised that it is not essential to the process, and I have been in communication with the importers concerned with a view to a limitation in the amount of formaldehyde employed. Recent samples have shown a marked improvement in this respect. The process remains under careful observation and in present circumstances it does not seem necessary to take steps to prohibit its use.

Medical Inspection of School Children.

Mr. Charles Bathurst asked the President of the Board of Education whether, in view of the additional expenditure thrown upon local education authorities by the national service of the medical inspection of children in the elementary schools, and in order to insure the efficiency and thoroughness of the work of such authorities in this respect, the Board would make such additional grants as would correspond with such additional expenditure, and to that extent relieve the already overburdened ratepayers.—Mr. Runciman replied: I am fully alive to the fact that the due performance by local education authorities of their duty to provide for the medical inspection of school children entails additional expenditure, but any additional pecuniary assistance that may be given to local education authorities will be given to them in respect of their work in connexion with elementary education as a whole and not in respect of any particular part of it. I can make no further statement on the subject at present.

Wednesday, March 16th.

Alleged Case of Lead Poisoning.

Mr. Clynes asked the Secretary of State for the Home Department whether his attention had been called to a second alleged case of lead poisoning at Pilkington's Tile Works, Clifton Junction, Manchester; whether he could say whether the incidents connected with the medical opinions of the case were similar to those in the previous case; and what steps he intended to take in the matter.—Mr. Masterman (on behalf of Mr. Churchill) replied: Notification of lead poisoning in a person who was previously employed at these works, but who left in May last, has been received in the department. The Secretary of State understands that the certifying surgeon refused to give a certificate of disablement under Section 8 of the Compensation Act, but that an appeal against his decision has, on reference to the medical referee, been allowed. On receipt of this decision Messrs. Pilkington at once arranged to pay compensation. I may add that these are the only two cases that have occurred at their works, and that in both cases the women had left their employment for many months before the claim arose.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Aldous, G. F., M.R.C.S. Eng., F.R.C.S. Edin., has been appointed Honorary Assistant Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Anderson, George Reinhardt, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 6, and to be attached more particularly to Southport and Ormskirk County Court.

Briscoe, William Thomas, M.D., M.Ch. Dub., has been reappointed Medical Officer of Health of Chippenham (Wilts).

Brittan, G. R., L.D S. R.C.S. Edin., has been appointed Surgeon Dentist to the South Devon and East Cornwall Hospital, Plymouth.

Burnett, J. R., M.D., M.S. Edin., has been reappointed Medical Officer of Health to the Keswick Urban District Council.

Clarke, Albert Bleckley, L.R.C.S. Edin., L.S.A. Lond., has been appointed Medical Officer for the Shebbear and Marland Districts by the Torrington (Devon) Board of Guardians.

Cunningham, H. H. B., M.D. Brux., F.R.C.S. Irel., M.R.C.S., has been appointed Examiner in Ophthalmology and Otology in the National University of Ireland.

Dalby, A. W., L.R.C.P. & S. Edin., has been reappointed Medical Officer of Health to the Frome Rural District Council.

Fox, E. L., M.D. Cantab., has been appointed Honorary Physician to the South Devon and East Cornwall Hospital, Plymouth.

Hamilton, W. C., M.B., M.S. Edin., has been appointed Honorary Assistant Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Hay, Percival J., M.D. Edin., has been appointed Honorary Ophthalmic Surgeon to the General (Beckett) Hospital, Barnsley.

Hogg, J. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health to the Shardlow District Council.

Jackson, J. E., M.R.C.S Eng., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Royal National Orthopædic Hospital.

Johnson, Philip, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Dolton District by the Torrington (Devon) Board of Guardians.

Lucy, R. H., M.B., M.S, Edin., F.R.C.S Eng., has been appointed Honorary Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Orr, Thomas, M.D., Ch.B. Glasg., has been appointed Medical Officer of Health of the Borough of Shrewsbury.

Pethybridge, W. L., M.D. Lond., has been appointed Honorary Pathologist to the South Devon and East Cornwall Hospital, Plymouth.

Rendle, C. E. R., F.R.C.S. Edin., M.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Robinson, G. C. F., F.R.C.S. Eng., has been appointed Honorary Out-patient Anæsthetist to the South Devon and East Cornwall Hospital, Plymouth.

Soltau, Bertram, M.D. Lond., has been appointed Honorary Physician to the South Devon and East Cornwall Hospital, Plymouth.

Wade, Reginald, M.R.C.S., L S.A., has been appointed Medical Officer of Health of Highbridge (Somerset).

Webber, H. W., M.D., M.S. Lond., has been appointed Honorary Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Whiteford, C. Hamilton, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary In-patient Anæsthetist to the South Devon and East Cornwall Hospital, Plymouth.

Wilson, W. Cheyne, M.D. Edin., has been appointed Honorary X Ray and Finsen Light Physician to the South Devon and East Cornwall Hospital, Plymouth.

Woollcombe, W. L., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Bath, Royal Mineral Water Hospital.—Resident Medical Officer. Salary £100 per annum, with lodging board, and washing.

Blackburn and East Lancashire Infirmary.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

Brighton, Sussex County Hospital.—House Physician, unmarried. Salary £70 per annum, with board, apartments, and laundry.

Bristol General Hospital.—House Physician, Casualty House Surgeon, and Assistant House Physician for six months. Salary £60, with board, residence, &c.

Bristol Royal Hospital for Sick Children and Women.—Assistant House Surgeon for six months. Salary £50 per annum, with board, rooms, and attendance.

Cancer Hospital, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—Assistant Surgeon.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant.

Cheltenham General Hospital.—House Surgeon, unmarried. Salary £70 per annum, with board and lodging.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

Colchester, Essex County Hospital.—House Surgeon and House Physician. Salary in each case £80 per annum, with board, washing, and residence.

Devonport, Royal Albert Hospital.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

Evelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.—Clinical Assistants.

Farningham and Swanley, Kent, Homes for Little Boys.—Medical Officer, unmarried. Salary £100 per annum, with board, residence, and laundry.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Honorary Physician. Also Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

Leeds Public Dispensary.—Junior Resident Medical Officer. Salary £100, with board and lodging.

Leicestershire and Rutland Asylum, Narborough.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

Liverpool, Royal Southern Hospital.—Honorary Surgeon.

London Fever Hospital, Islington, N.—Honorary Surgeon.

London Throat Hospital, 204, Great Portland-street, W.—Two Assistant Anæsthetists.

Macclesfield General Infirmary.—Junior House Surgeon. Salary £60 per annum, with board and residence.

Manchester, Ancoats Hospital.—Assistant House Surgeon. Salary £75 per annum, with board, &c.

Manchester, Monsall Fever Hospital.—Medical Superintendent. Salary £425 per annum, with house, &c.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—Pathologist. Salary £10 per annum.

Manchester Royal Infirmary.—Medical Officer for six months. Salary at rate of £100 per annum, with board and residence.

Middlesbrough, North Riding Infirmary.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

National Hospital for Diseases of the Heart, Soho-square, W.—Honorary Assistant Physician.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

Nottingham General Hospital.—Honorary Physician.

Prestwich, Manchester, County Asylum.—LocumTenens, unmarried. Salary 2 guineas per week, with apartments, board, &c.

Reeth Union and Rural District Council, Yorkshire.—Medical Officer and Medical Officer of Health. Salary £95 per annum.

Rotherham Hospital and Dispensary.—Assistant House Surgeon. Salary £80 per annum, with board, lodgings, and washing.

Royal Ear Hospital, Soho.—House Surgeon. Salary £40 per annum.

Royal Hospital for Diseases of the Chest, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

Royal Institute of Public Health.—Harben Demonstrator of Bacteriology and Comparative Pathology. Salary £250 per annum. Also Junior Demonstrator of Bacteriology and Comparative Pathology. Salary £100 per annum.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City-road, E.C.—Clinical Assistants.

St. Marylebone General Dispensary, 77, Welbeck-street, W.—Honorary Anæsthetist.

Salford Royal Hospital.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

Seamen's Hospital Society, Dreadnought Hospital, Greenwich, S.E.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Pathologist. Salary £100 per annum. Also Assistant Physician.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Sheffield University.—Demonstrator in Anatomy. Salary £150 per annum.

Shrewsbury, Salop and Montgomery Asylum.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.

Shrewsbury, Salop Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence. Also House Physician. Salary at rate of £70 per annum, with board and apartments.

Torquay, Torbay Hospital.—House Surgeon. Salary £100 per annum, with residence and board.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

Wakefield General Hospital.—House Physician, unmarried. Salary £100 per annum, with board and washing.

Walsall and District Hospital.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

West London Hospital and Post-Graduate College, Hammersmith-road, W.—Clinical Assistants. Also Three Casualty Officers.

West Riding of Yorkshire.—Assistant County Medical Officer. Also Bacteriologist. Salary in each case £250 per annum.

York Dispensary.—Resident Medical Officer (female) unmarried. Salary £130 per annum, with board, lodging, and attendance.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Alfreton, in the county of Derby.

Births, Marriages, and Deaths.

BIRTHS.

Anderson.—On March 3rd, at Horsmonden, Kent, the wife of F. T. Anderson, M.D., of a daughter.

Boyan.—On March 11th, at Holland-road, Kensington, the wife of Staff-Surgeon John Boyan, Royal Navy, of a son.

MacFadden.—On March 12th, at Frognal, Hampstead, N.W., the wife of Cecil J. R. MacFadden, M.D., of a son.

Tresidder.—On Feb. 13th, at Rawal Pindi, Punjab, India, the wife of Alfred G. Tresidder, M.B., B.S. Lond., Lieutenant I.M.S., of a daughter.

DEATHS.

Kenyon.—On March 6th, at Flookersbrook, Chester, George Arthur Kenyon, M.B. Lond., L.R.C.P., M.R.C.S., M.O.H., aged 66 years.

Rutherford.—On March 8th, at Mountainhall, Dumfries, in his 71st year, James Rutherford, M.D., F.R.C.P.E., for 25 years Medical Superintendent of the Crichton Royal Institution.

N B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INFANT MORTALITY AND THE "SOOTHER."

To the Editor of THE LANCET.

SIR,—In view of the continued high infantile mortality rate, I wish to bring before the profession the evils attending the use of long-tube feeding-bottles and rubber "soothers." The time has come for legislation on the subject. The manufacture and sale of such articles should be prohibited. Until we have an Act passed making their use illegal we must be content with warning the public of the dangers attending their employment. Public health authorities could do a great deal by having large notices printed and displayed in populous districts warning the public of the risks involved. Leaflets might also be distributed from door to door. Much might also be done by medical men themselves. They should always condemn the use of long-tube feeding-bottles and infant "soothers." From personal observations I fear we are somewhat remiss in our attention to such matters. In the rush of general practice such things are frequently overlooked. This is most regrettable, and I trust we will be more careful in future. Meantime, I hope this matter will be taken up enthusiastically and fully discussed in your columns in order that some active measures may be taken which will prove effective in reducing the infantile death-rate.

I am, Sir, yours faithfully,

Edinburgh, March 11th, 1910. JAMES BURNET.

TATTOOING IN PERSIA.

IN a recent number of *Man* Major P. Molesworth Sykes states that until the last generation tattooing was almost universal in Persia. At the present day, however, it is rare among the upper classes, but is still affected by the lower classes, especially in Southern Persia. In former times ladies of the best families had designs pricked on the forehead to connect the eyebrows; also on the chin, on one cheek, on the lip, on the throat, and on the breasts. Tattooing was apparently practised by women either as a decoration, or to avert the evil eye, or to hide a blemish, or to cure a malady. As regards this latter practice, Captain George Franklin, I.M.S., told Major Sykes that he had recently seen a patient who had tattooed herself above her eyebrows as a cure for granular lids. Antimony, ink, indigo, and charcoal are the pigments usually employed.

PORCELAIN HOUSES.

IT is now some years since medical men asked for the inside walls of hospitals to be constructed of large smooth surfaces without joints or ornamentation of any kind, so that there could be no receptacles for dust, and this smooth surface must of necessity be non-absorbent, washable, and imperishable, both for the wards and the operating rooms. We have inspected a first instalment of porcelain slabs, 5 feet by 3 feet by ½ inch thick, glazed on both sides and edges, which are on exhibition at 5, The Albany Courtyard, Piccadilly, and at the offices of Mr. Turner, 38, Broad-street Avenue, E.C. These slabs have been tested to a breaking strain of 1164·8 lb. (the breaking strain of an ordinary tile is 225 lb.) by Mr. Harry Stanger, inspecting engineer to the Crown Agents for the Colonies, who has also conducted tests for percolation, freezing and thawing, and resistance to atmospheric test, all of which proved that the porcelain slabs were impervious to any of these influences. We are assured that sheets of porcelain can be made equal in size and smoothness to anything hitherto done in plate-glass, say 12 feet by 9 feet by 1½ inches thick, with any kind of decoration burnt in at about 2000° F. It is now possible to obtain panels of porcelain of these dimensions of any required shape, thickness, or design in colouring, up to blocks of porcelain weighing, say, from 3 to 6 tons; and they afford a material with which architects may carry out the most exacting sanitary requirements. Smooth-surfaced porcelain walls are desirable in modern hospital work, seeing that tiles and all kindred materials by their joints and wall lining at the back are rendered unequal to the strict requirements of hygienic needs. The ease with which such walls may be washed down with water or disinfectants is a point greatly in their favour. With the advent of sheet porcelain, the hygienic possibilities of the dwelling-house have attained a high standard. Four materials are necessary—namely, glass for windows; rust-proof steel for strength and durability; sheet porcelain walls, ½ inch to 1½ inches thick; and joints of medicated copper-coated asbestos tape. When architects realise that this sheet porcelain is imperishable and less costly than any other kind of non-absorbent material, we may hope for brighter houses and better buildings. The inventor claims that these four materials, imperishable and non-absorbent, should be used in all hospital work; that a structure of these materials is cheap owing to its lightness in weight, and there is no upkeep such as obtains in other structural work; that the erection or taking down of a porcelain house is more rapid than any other building; that it can always be thoroughly disinfected and cleaned; and that it is portable. The material is specially suited to tropical buildings, being ant- and insect-proof. It is further claimed that porcelain makes the warmest building in winter and the coolest in summer and is the greatest non-conductor of all building materials. The total absence of absorbent walls, of concrete, stonework, bricks and mortar, woodwork, plaster, paint, putty, varnish, paper, and every absorbent material certainly makes a porcelain house interesting from a medical point of view, and this invention of Mr. Turner is worthy of the attention of all concerned in building, especially of those engaged in building hospitals.

COUNTRY ROADS AND PEDESTRIAN TRAFFIC.

AN occasional correspondent writes: "A great change has come over the country life since the time when motor-cars were first allowed to run at will over the public highways. There was a great outcry concerning them from rural folk; but gradually the value of this means of locomotion is winning on to its side those who used to hold the strongest dislike to all forms of motor vehicles. To go back no farther than at the beginning of the present century, just for the sake of argument, can the reception which would have greeted a proposal by a member of a county council of that day that money should be spent out of the public purse to provide foothpaths by the side of country roads for the safeguard of pedestrian traffic be imagined? The sword of Damocles would have fallen upon him. But what has actually happened since the dawn of the twentieth century? The speed of motor vehicles has been increased by a special Act of Parliament from 12 to 20 miles an hour, dangerous parts of the highways and hazardous cross-roads have been rendered safe by the erection of the familiar motor caution signs, and in the case of "blind" corners the local authorities have ungrudgingly spent money in improving the sight, landowners liberally meeting them with strips of land. And now, still further, the East Sussex county council has decided, by way of an experiment, that a path shall be made by the side of the roads over a certain distance of not less than half a mile in particular districts to safeguard pedestrians. Road sidings which are generally to be found in mounds are to be utilised in the construction of the path, the open cross-gullies are to be closed by the substitution of pipes to carry off the surface water, and where possible in the experimental areas the mounds of metal awaiting the mending season are to be removed and are not to be allowed again. The experiment is one which will be watched with some interest; more interest, perhaps, than may appear on the surface, for it is not too much to predict that as years roll on footpaths by the side of our country roads will be quite as familiar as they are in many of our country towns. Every village or township has its footpaths by the side of the main road not only for the comfort but for the safety of the inhabitants. So is it essential, apart from the point of view of the motor industry, that there should be paths by the side of country roads where pedestrians may walk in daylight and in darkness with safety from all sorts of vehicular traffic, and further, with some lessening of the risk of exposure to ailments following upon damp feet during continuous wet weather like that experienced during the present winter. The decision of the county council is a move with the times. It shows that the local authorities recognise that, besides being responsible for the sanitary condition of the highways, it is their duty to safeguard pedestrians using them, seeing that motor locomotion has come to stay."

THE INTER-HOSPITAL RUGBY CUP-TIE.

The Final.

London v. Guy's.

THERE is nothing quite like the final in this competition. It is the very essence of the game. No other branch of sport supplies a test so exacting in its demands on the physique and pluck of the player. And then there is the crowd. This youthful yelling mob brings with it an atmosphere all its own. It demands no half-measures; it ignores individuals and concentrates on the side. It is their hospital and the destiny of the Cup for another year that count. A year ago London went down to Guy's. Either London must avenge that defeat, or Guy's will keep the Cup. For 12 months the two hospitals have brooded on the two alternatives, and the result has been a wonderfully hard keen fight.

Time was when medical Rugby football knew little of international honours. The seven-year rule extending the period during which a man is eligible for his hospital, and the colonial invasion of the London schools, have brought about a great change. The London team included no less than seven internationals while two of the Guy's fifteen have also played for England.

The arrival of the Prince of Wales, who thus honoured the fixture for the second year in succession, was the occasion of a great demonstration. And this was renewed when Jones led Guy's on to the field. Rain fell steadily for the greater part of the game, while the ground was in a terrible condition, and so many attempts to open up the game ended in failure. It was a day for forwards. We saw individualism well rewarded in many a loose rush; and in all this Guy's excelled, for the forwards were all for footwork and the backs frequently gained ground by finding touch. It was very difficult to make headway. The tackling was too keen, the spoiling altogether effective, and Guy's did not overdo passing. Their football was, in the circumstances, wonderfully good. They fully deserved to cross over a try to the good, a useful lead in these games. This score was the result of a clever burst by Medlock. Coming away on the blind side of the scrum, the defence was quite outwitted and the Guy's half was over the line before London tumbled to the danger.

The Guy's section of the crowd was now well pleased. Their forwards had dominated the game, and Jones, Stringer, and Medlock nursed their efforts by splendid kicking. On the other hand, the London pack by comparison appeared a scratch crew and their two Internationals, Monteith and Morton, dwarfed the rest. In the Guy's pack there was a level excellence which already pointed to success. The partial failure of their scrum was indeed fatal to London hopes. On the few occasions on which Lindsay got the ball one caught glimpses of the rare merit of the colonial contingent in attack. It promised a prospect of victory if the Guy's scrum were held. Possibly something of this came to Monteith when half-way through the second half London appeared hopelessly beaten and 8 points down. The Scotch forward has lost nothing of that pace and devil which made him a great name in his Cambridge days and the natural successor of Siveright. Coming through with the ball at his feet he called on his forwards for an effort. They responded nobly and for a time Guy's were hard pressed. It was a great rally, and there was a scene of much enthusiasm when Macpherson dashed over and Adams kicked a goal. Only 3 points in arrears London put in all they knew. But Guy's were too well together to go to pieces before a few forward rushes. Jones and Stringer steadied the side with well-judged kicking into touch. The Guy's forwards buckled to again and gradually wore down a lighter pack by solid scrumming. London had made her effort, her pack was spent. For the last quarter of an hour London could not get beyond the twenty-five line. Guy's were content to keep the ball tight and the end came with the holders retaining the Cup for another year by 8 points to 5.

Guy's owe much to the pack, but more to the team combination, which is the great merit of the side, and is the result of fitness and keenness, which are in turn the outcome of devotion to the club. One sees this on the field of play in the way the Kent men cover each other. If a mistake is made there is another at hand to lend aid. They have been well served by Jones, Stringer, and Lee, but are more than any other hospital independent of individualism. The traditions of Guy's help the side and make the player. But we must not omit a word of sympathy for the losers. Heale and Lindsay had a hard task, and they never flinched. Behind them an International three-quarter line watched and waited for chances that never came.

London.—W. N. Ash (back); T. B. Batchelor, A. A. Adamson, D. G. Macpherson, A. C. Palmer (three-quarters); A. S. Heale (captain) and A. B. Lindsay (halves); H. G. Monteith, W. D. Kennedy, H. J. Morton, H. White, G. M. Chapman, R. Morton, W. C. Hodges, and J. W. Dew (forwards).

Guy's.—G. E. W. Lacey (back); L. B. Stringer, J. P. Jones (captain), H. Lee, and A. L. Stokes (three-quarters); J. G. Saner and C. H. Medlock (halves); H. Archer, G. R. Hind, W. E. Williams, A. H. Crook, A. V. Moberley, C. S. L. Roberts, W. S. Stranach, and R. S. Kennedy, (forwards).

THE SPARK AND THE FIRE.

Everyone conversant with the history of medicine must have noticed how from time to time one particular abnormality is put forward as being the cause of a multitude of others. Thus, in the Middle Ages the condition known as reuma was the cause of deafness, ophthalmia, blindness, nasal polypus, paralysis, phthisis, pleurisy, pneumonia, quinsy, squeamishness, fluxion of the cerebral ventricles, arthritis, and diseases of all other organs except the spleen. Therefore, says John of Gaddesden, "Reuma est quasi mater omnium morborum." In our own times there are numerous instances of the same form of argument. Some 60 years ago, George Catlin, the historian of the Red Indian, who was not a medical man, wrote an amusing work, illustrated by himself, entitled "Keep Your Mouth Shut." In this book he discoursed upon the evils of mouth breathing—a curious forecast of the discovery of adenoids. In more recent times two well-known physicians have written treatises, the one to show how most evils to which our bodies are prone are due to eyestrain and the other to floating kidney. We have been led to these remarks by having read a pamphlet entitled "Cerebral Congestion and Tight Neck Clothing, an Insidious Cause for Many Disorders," by Dr. W. G. Walford. He is of opinion that the long-continued constriction of the neck from which most persons suffer, owing to the clothing being not really loose, is responsible for many different ailments. Headache, visual disturbances, sea sickness, rheumatic arthritis, epilepsy, adenoids, and deafness are some of the abnormal conditions mentioned. Now we do not doubt that neck constriction is capable of giving rise to some of these abnormalities, just as eyestrain and floating kidney are responsible for various other abnormalities, but in all these cases the respective authors, in our opinion, ride their hobbies too hard. We can agree with Dr. Walford when he points out that in cases of first aid students are always told to see that the neck is unconstricted in cases of faintness or cerebral congestion, although the daily influence of slight constriction is not considered. He may have drawn attention to a possible cause of certain abnormal conditions which has hitherto not received all the attention which it should do, but he assumes too much.

A medical man who has been unable to get the December number of the "Annals of Surgery" through his bookseller would be obliged for the loan of this number for a few days.

◆

Dental Notice.—We have received a card, but our correspondent has not furnished us for our own use with his name and address.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. W. Fox: Clinique (Skin). 5.15 p.m., Lecture:—Mr. W. A. Lane: Intestinal Stasis.

Tuesday.—4 p.m., Dr. G. Rankin: Clinique (Medical). 5.15 p.m., Lecture:—Dr. N. Walker (Edinburgh): The Detective Spirit in Dermatology.

Wednesday.—4 p.m., Mr. P. J. Freyer: Clinique (Surgical). 5.15 p.m., Lecture:—Dr. J. M. H. MacLeod: The Treatment of Nævi and Moles.

Thursday.—4 p.m., Mr. Jackson Clarke: Clinique (Surgical). 5.15 p.m., Lecture—Dr. G. E. Herman: Placenta Prævia.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Lecture:—Mr. Baldwin: Practical Surgery.

Tuesday.—10 a.m., Dr. Moullin: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Pritchard: Practical Medicine.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eye. 2.30 p.m., Operations. Dr. Robinson: Diseases of Women. 5 p.m., Lecture:—Mr. Pardoe: Clinical.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Mr. Dunn: Tobacco Amblyopia.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. Howell Evans). 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).

Wednesday.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. A. H. Pirie). 4.30 p.m., Demonstration:—Mr. R. P. Brooks: Selected Eye Cases.

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel).

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

Tuesday.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 2.15 p.m., Special Lecture:—Dr. R. Wells: Diseases of the Heart.

Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat. 2.30 p.m., Special Lecture:—Dr. G. Rankin: Migraine.

Friday.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.

WEDNESDAY.—4 P.M., Lectures and Demonstrations on Pulmonary Tuberculosis:—Dr. Maguire: Basal Cavities.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. J. G. French: Tracheoscopy, &c.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. S. Edwards: Cancer (Varieties and Diagnosis).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 16th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 10	29·78	S.W.	0·41	77	53	44	44	45	Overcast
" 11	29·85	N.E.	...	71	50	43	42	44	Overcast
" 12	29·86	N.E.	0·24	47	44	39	40	40	Overcast
" 13	30 04	N.	0·04	79	46	39	39	40	Fine
" 14	30·13	W.	...	82	51	35	36	38	Fine
" 15	30·10	S.W.	...	77	51	37	37	38	Foggy
" 16	30·21	N.W.	...	84	51	35	37	37	Fine

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; American Medical Association, Chicago, Secretary of; Messrs. Appleton and Co., Lond.; Ancoats Hospital, Manchester, Secretary of; Agra Medical School, Principal of.

B.—Messrs. Blundell and Rigby, Lond.; Bristol General Hospital, Secretary of; Major R. J. Blackham, R.A.M.C., Peshawar; Mr. F. Burgis, Buenos Aires; Mr. J. Banks, Great Harwood; Messrs. Burroughs, Wellcome, and Co., Lond.; British Oxygen Co., Lond., Secretary of; Captain J. Hay Burgess, I.M.S., Secunderabad; Dr. A. G. Bagshawe, Lond.; British Medical Association, Lond., Medical Secretary of; Mr. Allan Barns-Graham, jun., Craigallian; Blackburn and East Lancashire Infirmary, Secretary of; Professor J. H. Biles, Lond.; Messrs. Bale, Sons, and Danielsson, Lond.; Bristol Royal Hospital for Sick Children, Secretary of; Mr. G. E. Bailey, Lond.; Mr. A. Benthall, Lond.; Brompton Hospital, Lond., Dean of; Dr. G. F. Buchan, Hounslow; Mr. F. A Brockhaus, Lond.; Dr. W. J. Barlow, Los Angeles; Dr. S. J. M. Bradshaw, Dalkey; Bausch and Lomb Optical Co., Lond.; Borough of St. Marylebone Health Society, Hon. Secretary of; Miss Boulting, Lond.

C.—Mr. F. W. Clarke, Chorlton-cum Hardy; Cornelia Hospital, Poole, Secretary of; Continental Tyre and Rubber Co., Lond.; Dr. J. Crocket, I chang; Messrs. Cuxson, Gerrard, and Co., Lond.; Sir Francis R. Cruise, Dublin; Messrs. A. H. Cox and Co., Brighton; Clayton Hospital, Wakefield, Secretary of; The Cheerup Teapot Co., Glasgow.

D.—Dr. Henry Dickman, Poole; Messrs. W. Dawson and Sons, Lond.; Mr. Percy Dunn, Lond.; Messrs. F. Davidson and Co., Lond.; Deutschen Gesellschaft für Chirurgie, Berlin; Messrs. F. A. Davis Co., Philadelphia.

E.—Messrs. Eason and Son, Dublin; Dr. A. D. Edwards, Bournemouth; Electric Ignition Co., Birmingham; E. M. P.

F.—Mr. Claude W. Ferrier, Lond.; Messrs. J. S. Fry and Sons, Bristol; Dr. J. E. Frere, Fleet; Fabian Summer School, Lond., Secretary of; F. J. L.; Messrs. H. Frowde and Hodder and Stoughton, Lond.; Mrs. Fish, Worthing; Major A. Fenton, I.M.S., Mogok.

G.—Dr. R. Martin Gil, Malaga; Dr. F. W. Giles, Southborough; Mr. H. Tyrrell Gray, Lond.; Mr. A. H. Gifford, Guildford; Dr. Alfred Greenwood, Blackburn; General Medical Council Lond., Secretary of; Dr W. Gordon, Exeter; Gloucestershire Education Committee, Gloucester, Medical Officer of Health to; Mr. A. K. Guha, Ghyabari; Messrs. Gillingham and Son, Chard.

H.—Mr. Charles J. Heath, Lond.; Mr. J. H. Haywood, Nottingham; Haydock Lodge, Newton-le-Willows, Medical Superintendent of; Messrs. Haasentein and Vogler, Cologne; Mr. Alexander Haig, Lond.; Mr. A. Helmreich, Nancy; Mr. J. Heywood, Manchester; Messrs. Hirscbfeld Bros., Lond.; Mr. Warrington Haward, Lond.; *The Hospital Gazette*, Lond.

I.—India Rubber, Gutta Percha, and Telegraph Works Co., Lond.; Ilkeston Education Committee, Clerk to the.

J.—J. A. B.; J. L.; J. K. F.; Dr. Alfred C. Jordan, Lond.; Dr. F. Wood Jones, Manchester.

K.—Messrs. R. A. Knight and Co., Lond.; Dr. Mary Kidd, Nordrach; Kashmir, India, Chief Medical Officer of; Dr. Knight, Edinburgh; Rev. Dr. J. J. Kelly Athlone; Mr. H. M. Kendall, Dawlish; Dr. H. Kerr, Newcastle-upon-Tyne.

L.—Mr. H. Le Soudier, Paris; Messrs. Lippold and Herbert, Lond.; Mr. T. Laffan, Cashel; Messrs. Luzac and Co., Lond.; Leeds Public Dispensary, Secretary of; London Temperance Hospital, Secretary of; The Lift Fire-Place Co., Manchester; Dr. Max Löwy, Marienbad; London School of Clinical Medicine, Secretary of; Dr. H. Lohnstein, Berlin.

M.—Mr. H. Martin, Birmingham; Maltine Manufacturing Co., Lond.; Monkstown Hospital, Dublin, House Surgeon of; M. B.; Manchester Corporation, Medical Officer of Health of; *Medical Officer*, Lond., Manager of; Maison Mathieu, Lond.; Mr. J. E. R. McDonagh, Lond.; Mr. E. Merck, Lond.; Manchester Royal Infirmary, Secretary of; Manchester Northern Hospital for Women and Children, Secretary of; Mr. A. Mori, Lond.; Mr. Arthur MacDonald, Washington.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; Nottingham General Dispensary, Secretary of; Messrs. F. Newbery and Co, Lond.; Mr. T. Nash, Lond.; "Northfield," Bournemouth; The "Nicura" Patents Co., Lond., Managing Director of; National Association for the Feeblo Minded, Lond.

O.—Colonel Mathew D. O'Connell, A.M.S. (retired), Kirkby Wharf; Messrs. Oppenheimer, Sons, and Co., Lond.; Messrs. Osborne Peacock Co., Manchester.

P.—Messrs. Peacock and Hadley, Lond.; Messrs. C. Pool and Co., Lond; P. B.; Phœnix Sanitary Co., Preston, Manager of; Dr. Pierre's Eau Dentifrice, Lond.; Plasmon, Lond., Secretary of; Dr. J. C. Pounden, Alfreton; Dr. Charles Porter, Lond.; Paddington Dispensary for the Prevention of Consumption, Lond.

R.—Mr. R. P Rowlands, Lond.; Mr. H. Betham Robinson, Lond.; Royal Institute of Painters in Water Colours, Lond.; Royal Ear Hospital, Lond., Secretary of; Messrs. Reynolds and Branson, Leeds; Messrs. G. Robertson and Co., Lond.

S.—Scholastic, Clerical, &c., Association, Lond.; Dr. C. Stiebel, Lond.; Mr. H. Saunion, Lond.; Mr. F. L. Simons, Edinburgh; Messrs. R. Sumner and Co., Liverpool; Mr. J. Sampson, York; St. Marylebone General Dispensary, Lond., Secretary of; Messrs. W. H. Smith and Son, Stafford; S. P. G.; Major Henry Smith, I.M.S., Amritsar; Messrs. E. Steiger and Co., New York; Sheffield University, Registrar of; Messrs. Spiers and Pond, Lond.; Shrewsbury County Asylum, Medical Superintendent of; Dr. Joseph Scott, Teberan; Mr. R. B. Sargeant, Lond.; Fleet-Surgeon E. A. Shaw, R.N., Hong Kong; Messrs. John Saxon and Co., Lond.

T.—Dr. Leslie Thorne Thorne, Lond.; Dr. E. Hastings Tweedy, Dublin; Thames Ironworks, &c., Co., Lond.; Dr. Isobel A. Tate, Shrewsbury.

U.—Messrs. Urban and Schwarzenberg, Vienna.

V.—Vaccine Therapy Institute, Bombay.

W.—Mr. S. Wallace, Skegness; Mr. Effingham Wilson, Lond.; Dr. E. Wilcox, Asbburton; Mr. P. Wood, Crawley; Messrs. J. Wright and Sons, Bristol; Dr. Tom A. Williams, Washington; Fleet-Surgeon A. Gascoigne Wildey, R.N., Portsmouth; Messrs. G. H. Wait and Co., Leicester.

Y.—Dr. M. Y. Young, Ahwaz.

Z.—Messrs. C. Zimmermann and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Accrington Corporation, Accountant to the; Aymard Patent Milk Sterilizer Co., Ipswich; A. D.; A. L.; A. K.; Mr. G. H. Adam, West Malling; A. P.; A. H. G.

B.—Mr. S. H. Byam, Lond.; Mr. H. Bigg, Lond.; Messrs. Brown and Woodley, Hastings; Dr. J. M. Bennion, St. Mary Cray; Mr. E. Baker, Birmingham.

C.—Mr. H. B. Corry, East Liss; Mr. J. F. Creighton, Melita, Canada; Dr. A. Corry, Ballarat; *Canadian Journal of Medicine*, Toronto, Editor of; C. H. W.; Messrs. Constable and Co., Lond.; Messrs. Clarke, Son, and Platt, Lond.; C. W.; C. M.; Messrs. Cooper and Co., Huntingdon; Messrs. Colman and Co., Lond.

D.—Mr. P. Dempsey, Dublin; Dr. W. T. Dougal, Pittenweem; Paul E. Derrick Advertising Agency, Lond.; Miss Dauiel, Epsom.

E.—Dr. W. A. Evelyn, York; Dr. F. J. E. Ehrmann, Chicago; A. R. Elliott Publishing Co., New York; E. A. W. W.

F.—Dr. F. E. Fremantle, Lond.; Mr. R. Fleming, Glasgow; Mr. S. H. E. Foxwell, Lond.; Dr. J. FitzGerald, Queenstown; Messrs. Fairchild Bros. and Foster, Lond.

G.—Mr. H. J. Gauvain, Alton; Great Yarmouth County Borough, Accountant to the; Messrs. Grindlay, Groom, and Co., Bombay; Dr. Stanley Gill, Formby; G. N. A.

H.—Dr. R. Hannah, Edinburgh; Mr. J. H. Henwood, Bilbao; Messrs. J. F. Hartz Co., Toronto; Captain A. H. Hayes, R.A.M.C., Lond.; H. B; H. C. H.; Messrs. A. Heywood and Son, Manchester; Messrs. J. Haddon and Co., Lond.

J.—J M. M.; J. H; J. J. W.; J. R.

K.—Dr. K.

L.—Mr. A. Lawson, Lond.; Leeds Tuberculosis Association, Secretary of.

M.—Mr. H. H. Moyle, Totnes; Messrs. Martin and Co., Lond.; Medical Superintendent, Middleburg; Messrs. Z. P. Maruya and Co., Tokyo; Lieutenant-Colonel R. L. R. Macleod, R.A.M.C., Karachi; Dr. E. Matthew, Edinburgh; Mr. T. Martin, Thatcham; Dr. H. C. Major, St. Brelade; Dr. F. H. Morison, Carlisle; Messrs. J. Menzies and Co., Edinburgh; Messrs. Macmillan and Co., Lond.; Messrs. Muller, Maclean, and Co., Lond.; Dr. D. M. Macrae, Montrose.

N.—Dr. N. S. Neill, Forfar; North Riding Infirmary, Middlesbrough, Secretary of; Newport and Monmouthshire Hospital, Secretary of; Nottingham Guardians, Clerk to the; Dr. F. N. Nanka-Bruce, Dodowah.

P.—Mr. W. P. H. Parker, Glenageary; *Preston Guardian*, Manager of; P. A. S.

Q.—Queen's Hospital, Birmingham, Secretary of.

R.—Mr. H. M. Riley, Leicester; Reuter's Telegram Co., Lond.; Messrs. Rosonberg and Sellier, Turin; Royal Society of Medicine, Lond., Secretary of; Royal Mineral Water Hospital, Bath, Secretary of.

S.—Mr. S. Stephenson, Lond.; Seltzogene Patent Charges Co., St. Helens; Mr. W. V. Shaw, Malton; Mr. P. Smith, Tredegar; Mr. B. E. Sansom, Lond.

T.—Dr. J. W. Thomson, Wakefield; Lieutenant A. G. Tresidder, I.M.S., Bombay; T. J. D.; Telephone Instalment System Co., Lond.

V.—Messrs. Vigot Frères, Paris; Messrs. G. Vau Abbott and Sons, Lond.; Vieille Montagne Zinc Co., Nenthead.

W.—Messrs. A. J. Wilson and Co., Lond.; White Hart Hotel, Margate, Manager of; W. P. T.; West Ham, &c., Hospital, Lond., Secretary of; W. A. S.; W. W.; W. S. W.

EVERY FRIDAY. PRICE SIXPENCE.

THE LANCET.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*
Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*
Special Terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

The Lumleian Lectures
ON
ANGINA PECTORIS.

Delivered before the Royal College of Physicians of London

By WILLIAM OSLER, M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

LECTURE II.[1]

Delivered on March 15th.

PATHOLOGY.

Mr. President and Fellows,—Had Heberden listened to my first lecture he could have remarked very justly: "Well! they have not got much ahead since my day." In descriptive symptomatology we have not, and among 100 cases of angina pectoris there is no reason why Heberden should not have met all the important anomalies and complications. He had the good sense not to say much about the cause of the disease, and the good fortune to get very close to the truth in what he did say. I do not propose to weary you in a vain repetition of the scores of explanations which have been offered since his day. The older ones are to be found in the monographs of Parry and Jurine, the more recent in the Traité of Huchard, in the writings of our President, and in those of Allbutt, Bramwell, Gibson, Morrison, MacKenzie, and others. At the outset let us frankly face certain obscurities which have not yet been cleared up. Why is it more common in the upper classes? Why do we not see it more often in hospital practice? Worry and work are the lot and portion of the poor, among whom vascular degeneration is more widespread. It is as though only a special strain of tissue reacted *anginally*, so to speak, a type evolved amid special surroundings or which existed in certain families. Or there may be a perverted internal secretion which favours spasm of the arteries, as Harvey at Cambridge has shown to be the case with pituitary extract and the coronary vessels. And a case of aortic valve disease is reported in which the use of this extract caused anginal attacks. This suggestion is supported by the fact that in myxœdema anginal attacks may be caused by thyroid extract. I saw last year a patient of Dr. Lafleur's of Montreal with this most distressing peculiarity, which was mentioned to me also by Dr. Allan Starr of New York. The disease may occur in three generations, as in the Arnolds, and a father and four children have been affected. In three instances of my series father and son were attacked; in two, brothers; and in one, a brother and sister. It is not the delicate neurotic person who is prone to angina, but the robust, the vigorous in mind and body, the keen and ambitious man, the indicator of whose engines is always at "full speed ahead." There is, indeed, a frame and facies at once suggestive of angina—the well "set" man of from 45 to 55 years of age, with military bearing, iron-grey hair, and florid complexion. More than once as such a man entered my consulting-room the suggested diagnosis of angina has flashed through my mind. Still more extraordinary and inexplicable is an imitative feature, if one may so speak of it, by which the repeated witnessing of attacks may induce one in the observer. The case of Senator Sumner attracted widespread interest on account of his distinguished public position. Two weeks after his death Dr. Hitchcock, his physician, died in an attack with coronary artery disease and acute infarct of the myocardium. Tabor Johnson, his other physician, at that time a young man, had two attacks, diagnosed by Brown-Sequard as angina, and he had seen some twenty cases of what may be called the manufactured variety. Straus died not long after his friend Charcot. A young man, aged 28, whose father, a very vigorous planter, had through the spring and summer of 1900 severe attacks and died in one Sept. 28th, consulted me the following January for angina. I had seen the father, and had been a witness to the devotion of the son during the terrible paroxysms. Within a month of the death of the father he began to have severe pain in the chest, with pallor, sweating, the pains down the left arm, which became numb and tingled. The sister said the paroxysms were identical with those of the father, and naturally the family were greatly distressed. The patient was a healthy, robust fellow, very neurotic, and almost frightened to death. A reassuring prognosis was all the treatment he required. He has had no further attacks. A woman, aged 38, after her father's death from angina, had severe pains about the heart, and attacks which she insisted were of the same character, but she, too, got quite well. A still more remarkable illustration of the imitative, emotional influence was seen in the outbreak of angina-like attacks among the sailors of the French corvette *L'Embuscade* reported by Gelineau.

There are two primary features of the disease, pain and sudden death—pain, paroxysmal, intense, peculiar, usually pectoral, and with the well-known lines of radiation—death in a higher percentage than any known disorder, and usually sudden. Often, indeed, it is, as the poet says, "Life struck sharp on death." The problems for solution are: What is the cause of the pain? Why the sudden death? The secondary features of the attack, the vaso-motor phenomena, the radiation of the pain, the cardiac, respiratory, and gastric symptoms are of subsidiary interest.

MORBID ANATOMY.

Naturally, in the presence of a disease with such startling characters, men have sought an explanation in the bodies of its victims. And angina pectoris has a very definite morbid anatomy, few affections more so, since in practically all cases vascular disease exists. With Morgagni, Jenner, Fothergill, and Parry, a majority of authors have correlated the fatal symptoms with the arterial disease; others have reached the less satisfactory, if more philosophical, position of Rougnon, who, taking all the circumstances into consideration, concluded, "Monsieur Charles est mort parce qu'il est mort." Not a hospital disease, one naturally does not see many necropsies. I have notes of 17 post-mortem examinations, all in men, 8 of them in men under 40 and 4 of them with a history of syphilis, and dying at the ages of 34, 38, 37, 39. They fall in three groups—aortitis, coronary artery disease, and a negative case.

A. Aortitis.—From the publication of Morgagni's famous case writers have recognised the importance of aortic changes at its root. The special importance of this has been dwelt upon by my brother regius of Cambridge, whose many publications upon the subject, dating from his remarkable study of syphilitic arteritis[2] in 1868, have edified his colleague and students. For our purposes here there is but one aortitis—the syphilitic. Occasionally a fairly acute process occurs at the root of the aorta in the specific fevers, but this is very uncommon, except in connexion with endocarditis. Chronic atheromatous changes in the aorta of the aged are very rarely associated with angina unless the coronary arteries are involved. Syphilitic aortitis is a most distinctive lesion. I pass round the beautiful plate of Corrigan's paper, in which he brings out for the first time I think, and with great clearness, the connexion of the disease with this lesion. The frontispiece of Balfour's book on "The Senile Heart" gives an equally good representation. Upon its anatomical features I need not dwell further than to refer to its predilection for the supra-sigmoidal region, the sectional limitation, and the great frequency of its association with aneurysm.

Of the post-mortem examinations of my series only one offered a good illustration of the supra-sigmoidal type; a negro, aged 38, who had had syphilis about a year before. The attacks of angina began in December, 1904; they lasted for from 15 minutes to half an hour, with very characteristic distribution of the pain; in severer paroxysms he had fallen unconscious. The attacks recurred even when he was in bed and quiet. There was diffuse cardiac impulse, the area of flatness was increased, but there were no murmurs; the blood pressure was 188 mm. Hg. On the evening of admission he had a very sharp attack, and another at 1.30 A.M., in which the pain was chiefly epigastric; he sweated profusely and became very weak, and at 2.30 was found unconscious, and died at 4 A.M. The heart weighed 490 grammes; the free edges of the valves were a little thickened; the only important lesion was an extensive fresh-looking aortitis, involving the root of the vessel and narrowing the orifice of the left coronary. The right coronary orifice was normal; the coronary arteries themselves were not affected.

---

[1] Lecture I. was published in The Lancet of March 12th, p. 697

[2] St. George's Hospital Reports, 1868.

Another syphilitic patient, W. A. M., aged 38, admitted Feb. 20th, 1895, had very severe paroxysms of angina, with aortic insufficiency. The aortic segments were thickened and curled; the coronary arteries were small but healthy; there was the characteristic sclerotic aortitis not confined to the root. The smaller arteries of the body, particularly the splanchnic, were tortuous and thickened.

In a third syphilitic case, J. W., negro, aged 34, admitted May 25th, 1897, the paroxysms were most characteristic, and had recurred since March; in several attacks he had become unconscious, and following them he had transient weakness of the left arm. During the fortnight he was in hospital he had several severe attacks; the left arm was distinctly weaker than the right, particularly the grasp of the hand; the heart appeared to be normal. On June 8th he complained of a great deal of coldness of the hands and feet; at 6.10 in the evening he threw up his hands suddenly and died within a few minutes. Widespread aortitis of the sclerotic type, with here and there plaques of atheroma, were the only lesions. The coronary arteries were not involved; they looked small, the walls thin, but there was no occlusion.

B. *Coronary arteries.*—We are all united in the acceptance of the Jennerian view of the close connexion of lesions of the coronary arteries with the disease. As shown in the extensive analysis by Huchard, a very large proportion of all the cases show changes in these vessels. Of the 17 necropsies of my list, 13 illustrated all the varieties of the lesions.

(*a*) Narrowing of the orifices is a very common occurrence, particularly in the syphilitic aortitis, but not often met with without some involvement of the branches. In the case of a man who died suddenly in my wards after recurring attacks the sclerosis of the ascending part of the arch was marked and the orifices of the coronary arteries were extensively contracted; as the post-mortem report states, "they admitted only a bristle" The arteries beyond were nearly normal, showing only slight sclerotic change.

(*b*) Blocking of a branch with a fresh thrombus is very common in cases of sudden death in angina. In my post-mortem experience this has been more frequent in the medico-legal cases of sudden death without symptoms of angina. One of the main stems or a small branch may be plugged with the formation of fresh infarct. In patients who live some time the infarct may soften and pericarditis may be excited. A specimen in McGill College, from a man who died suddenly the day after an attack, shows the left coronary artery blocked by the thrombus and perforation of the softened anterior wall of the ventricle.

(*c*) Obliterative endarteritis, if we may judge from the reports of fatal cases collected by Huchard and others, is *the* lesion of the disease; it was present in nine cases of my series. The most remarkable peculiarity is the variation in the extent of involvement. The angina may be associated with obliteration of a comparatively small branch, or with a most widespread involvement of all the vessels. In the younger subjects the process is a gradual endarteritis with narrowing, and even complete occlusion of the vessel. In older subjects, the arteries may be converted, as in John Hunter and in William Pepper, into "open bony tubes." In one instance of my series the vessels were calcified to their smallest branches. Four cases showed disease of the coronary arteries alone; five in connexion with aortitis. In looking over these notes one is astonished at the comparatively small extent of coronary tubing which is sufficient to carry on the myocardial circulation. Mr. G., aged 39 years, an extraordinarily vigorous muscular man, after a day full of effort and strain, had read an important paper at a college society and died the following night in an attack. Not more than a third of his coronary vessels were in use. It has long been known that advanced coronary artery disease may be present without much disturbance of the function of the heart. There is not a clinician among us who could not furnish from his notes a dozen cases of this kind. A man may get on very comfortably with only the main branch of one coronary, practically a fourth of the whole system. A heart once in my possession showed almost complete obliteration of the left coronary, only a pin-point channel could be traced for a short distance. Of the right branch, the main division passing between the auricle and the ventricle was completely obliterated, so that the only one of full size passed in the posterior interventricular groove. The heart came from a large, very muscular imbecile, aged 36, an inmate of the Institution for the Feeble-Minded, at Elwin. I knew him well; a good-natured, helpful fellow, constantly employed in carrying about, and attending to, the more helpless children. He died suddenly one day in a fit. The coronaries are not endarteries in the sense of Cohnheim, and disease of their branches is not necessarily associated with angina.

(*d*) And in a few fatal cases no lesions whatever are found; we must accept the fact that angina pectoris may kill without signs of obvious disease in heart or blood-vessels. Such an instance has been reported by Dr. Bullard and myself.[3] The case was regarded by all who saw it as one of so-called functional angina. The patient, aged 26, was very strong and robust, devoted to athletics, and a heavy smoker. He had served in the United States Army, but was discharged in the spring of 1896 for attacks of angina. The chief feature was pain in the heart, and "awful cramps," as he described them, in his arms. The attacks were so severe that at times he became unconscious, and after one he was thought to be dead, and was about to be removed to the dead-house! The attacks were brought on by cold and exertion. The pain was evidently very severe, and in the major paroxsyms respiration would cease, and his pulse would become so feeble that he seemed to be dead. Only chloroform and morphia were of of any avail in the attacks. He had an extraordinary number of attacks in 1896–7; Dr. Bullard had notes of 105. In 1898 he was better and had not nearly so many attacks, and was able to be at work. On Nov. 27th at 11.30 he had an attack of great severity; at 12.55 the doctor gave him chloroform; the attack was very prolonged, and the muscles of the chest became fixed, and remained so; he had a series of paroxysms and died at 6.40 in the morning. Except a few pleural adhesions, there was nothing special to be noted. The heart weighed 14 ounces; the muscle and the valves were normal. Just above the ring the aorta measured not quite 6 centimetres, a small vessel for a man of 5 feet 10 inches, weighing just over 13 stones. There was no disease except a flake here and there of atheroma. There was no thickening about the pericardium, and the sections showed no changes in the cardiac nerves.

PUMP AND PIPES.

The circulation as a whole may be compared to a vast irrigation system, with innumerable sub-districts of varied extent, under the control of local officers, but all under one central bureau, with which they are connected by telephone and an automatic signalling apparatus. The engine, pumping night and day, keeps a steady, uniform supply in the mains. The efficiency of the system depends upon the care with which the managers of the sub-stations regulate the flow to different plantations as occasion demands; the slightest disturbance in the most distant district is at once indicated by telephone to the central office, or in some instances automatically to the pump itself. Into certain vast irrigation areas with large sluice-ways all the water of the system can be diverted; and through carelessness of the men in control or through misinterpretation of a message from the head office, it sometimes happens that these sluice-ways are left wide open and the whole system is wrecked. Or strikes arise in local, outlying districts, the distributing mains are closed, and the pumping reservoir is flooded and permanently disabled. Or things go wrong in the central bureau—supplies are not forthcoming to keep up the plant, or there is litigation with neighbours, and the works are shut down, sometimes abruptly and without warning. What happens in a great irrigation plant happens also in the vascular system of the animal body, the mechanism of which, pump (heart), mains (aorta), sluices (arteries), and lakes (capillaries), is very much the same. Take two illustrations of its working. In Hill's experiment—hold a tame rabbit up with the forelimbs spread, and the gates of its splanchnic sluices will open so wide that the head office, pumping station, and whole irrigation system are wrecked in a few minutes. Try the same with the wild rabbit, whose splanchnic dam is under the control of trained officials—nothing happens. The pumping-engine itself is as sensitive as a galvanometer and has a marvellous mechanism for relieving and preventing any strain or tension on its machinery. Irritate with a probe, as in Stewart's experiment, the inner surface of the left ventricle, just enough to suggest or imitate tension, and automatically messages are sent, opening wide the most distant sluice-gates to prevent any strain on the pump itself. Or damage the main valve of the pump so that there is a leak with increased central strain, as in aortic insufficiency, and all the outlying territories open their sluice-ways to relieve the pressure. The circulation is maintained, equalised, and regulated by one working element—the muscle in the walls of its system, a peculiar, indeed a unique, type in the pump, ordinary unstriped fibre in the distributing channels. Both constituents, heart and arteries, are elaborately "wired" with nerves, which end about possibly in the muscle fibres, and there are peculiar end organs widely distributed (Paccinian bodies). Just as in the irrigation fields, pump and channels are connected by wires with the local and central offices of control, so the arteries and the heart are connected with centres, local and general, which act directly upon their muscular elements, by which the whole system is worked and regulated—an automatic set of fibres which keeps the head office constantly informed as to pressure conditions in the engine, a set which slows, and a set which hastens its action. Moreover, a complicated, subsidiary system coördinates the different parts of the heart ministered to by a tissue of special type, unlike the fibres of the heart itself or of the arteries. Not only does the muscular element maintain the circulation, but it keeps the vascular walls in a state of tension, a tonus or tautness which has an all-important influence in relieving the strain on the non-muscular elements. As Harry Campbell remarks in his recent Study of the Circulation,[4] "The greater the tonus of the muscular elements the more exclusively does the vascular strain caused by the blood pressure fall on them."

---

[3] Medical News, vol. lxxvii., p. 974.

INVOLUNTARY MUSCLE PAIN.

Involuntary muscle pain has its peculiarities, and whether in artery, bowel, ureter, gall-duct, or uterus, comes in crises, storms, and outbursts. I have recently taken advantage of an unpleasant experience in my own person to observe the phenomena of these paroxysms in a ureter struggling with a calculus. Periods of complete freedom, extending from two to three, to eight or ten hours, attenuated with three types of disturbance of sensation—a dull, steady, localised pain, the situation of which could be covered with a penny. It could be imitated exactly by firm pressure with the handle of a knife, or, indeed, with a finger upon a bone, particularly upon that tender spot on the sternum just a little above the ensiform cartilage. Lasting for hours and unmoved it was fairly bearable. Now and then, when free from pain, there were remarkable flashes, an explosive sort of sensation, not actually unpleasant, and accompanied by a glow-like wave along the course of the ureter and out through the flank, as it were through the muscles. And then abruptly, or working out of the steady pain, came the paroxysm, like a twisting, tearing hurricane, with its well-known radiation, followed by the vaso-vagal features, the pallor, cold extremities, feeble pulse, sweating, nausea, vomiting, and in two attacks, a final, not altogether unpleasant period, when unconsciousness and the pain seemed wrestling for a victory reached only with the help of God's own medicine—morphia.

Any portion of the arterial system taken as a unit may present the phenomenon of involuntary muscle pain, and herein, I think, lies the key to the explanation of the anginal attack. The intermittency, the suddenness of onset, the steady, dull, enduring pain, and then the paroxysm, with its associated vaso-motor features, sometimes unconsciousness, and the radiations are paralleled in other involuntary muscle crises. Paralleled, but not equalled, and not often associated with the dangerous collapse symptoms, and rarely causing sudden death. And yet a man may die in renal or biliary colic, borne down in a vaso-motor storm, as happened in the only case of the kind I have seen.

CARDIO-VASCULAR PAIN.

What do we know about cardio-vascular involuntary muscle pain, and under what circumstances do we meet it? Like other viscera, the heart itself is insensitive to ordinary stimuli. You remember how this so amazed Harvey when handling the apex of the heart of the young Viscount Montgomery. Even his Most excellent Majesty, who studied the case with him, "acknowledged that the heart was without the sense of touch; for the youth never knew when we touched his heart except by a sight or the sensation he had through the external integument."

In most affections of the heart pain is conspicuous by its absence, particularly in the more serious maladies, so that it has almost become an axiom that "not much is the matter when a patient complains of his heart." Pericarditis may pass through all its phases without pain. Occasionally it is present in a marked degree, and it may be a special feature in the chronic mediastino-pericarditis.

In acute endocarditis pain is rarely present, and ulceration of valves or of the wall may proceed to a most extreme degree without any sensory disturbances. Of valvular lesions mitral disease is often associated with slight pain, particularly in children with greatly enlarged heart. And sometimes in women the pain is of great severity and persistence, but it rarely has the characters of true angina. There are a number of cases on my list with mitral lesion, stenotic or regurgitant, but, curiously enough, the only instance of attacks which I could call genuine angina pectoris in the stage of cardiac insufficiency occurred in a young girl of 11. And in this point I see that my experience coincides exactly with that of Nothnagel. On the other hand, lesions of the aortic ring are often painful, and attacks of true angina are common, particularly when the root of the aorta is involved.

Arterial pain is met with under many different circumstances, and may present all the features of angina. In the first place, external pressure directly upon the wall is associated with agonising pain. Those of us who as students took our turn in digital compression of the femoral artery for popliteal aneurysm have a lively recollection of the misery suffered by the poor patient.

Secondly, pressure from within; the pain caused by an embolus may be of the most terrific character. A man admitted to the Radcliffe Infirmary under Dr. Brooks—an old examination case of aortic insufficiency, with a loud, musical, diastolic murmur—had a sudden pain in his right leg, just below the popliteal space, and for days was in such agony that he had to have repeated hypodermics of morphia. As the swelling and pain subsided signs of an aneurysm became evident, and it was noted that the loud, musical murmur had disappeared. A calcified fragment whipped off from the aortic valve had torn the wall of the artery. Not only sharp emboli but the soft ones of ulcerative endocarditis cause intense pain. As I was going up the steps of the house of a patient, the diagnosis of whose trouble had wavered between typhoid fever and ulcerative endocarditis, I heard loud screams and found a young fellow in great agony, and he pointed to a spot below Poupart's ligament which he would not allow us to touch. He had embolism of the femoral artery, with subsequent gangrene of the leg. The intense colic of mesenteric embolism, such as we see in aneurysm, and occasionally in endocarditis, is of the same character, and it is diagnostic point between thrombosis and embolism of the cerebral arteries.

Thirdly, spontaneous tear of the arterial coats is associated with atrocious pain, with symptoms, indeed, in the case of the aorta of angina pectoris, and many instances have been mistaken for it. In this remarkable drawing which I pass round, of a split, fissured, and healed rupture of the internal coats of the aorta just above the valve, the patient was thought to have angina pectoris, and in the second attack, from which he died a year or more subsequently, a fresh split of the internal coats was found, which had ruptured into the pericardium.

Fourthly, as a result of extreme dilatation, distension, and stretching. Following the application of an Esmarch bandage, the arteries of the limbs dilate and throb, and there may be pain of a very intense character. In chilblains and in erythromelalgia the pain is probably arterial, and may be greatly aggravated with each systolic distension. In the excessive dilatation of the vessels following frost-bite the more rapid the dilatation the more intense the pain. As boys we had to give practical recognition to this point; if after a snowball fight anyone was foolish enough to put his cold hands into warm water he would be sure to suffer agonies of pain. An every-day cause of arterial pain is met with in aneurysm. In 132 cases of thoracic aneurysm the histories of which were carefully revised for this symptom pain was present in 104, and in 62 the trouble began with it. A feature of special interest to which attention has been called by many writers is the occurrence of attacks of angina pectoris as the first symptom. This happened in four cases in my series, and in every one of them the anginal attacks disappeared with the increase in the size of the aneurysm. There are other mechanical causes of pain in aneurysm, but I think we all accept the fact that pain is a very constant feature in the early formation and growth of the sac. Stretching of the aorta without disease of its coats, as seen in the dynamic dilatation of aortic insufficiency and certain neurotic states, is not necessarily painful.

---

[4] THE LANCET, Jan. 15th, 1910, p. 193.

Fifthly, spasm of the arteries may cause severe pain. Slow, gradual contraction of the peripheral vessels due to cold is associated with a sense of numbness but not of actual pain. Scores of everyday vascular actions illustrate the same thing, and the radials may be contracted to obliteration of the pulse without any abnormal local sensations. On the other hand, there are types of arterial spasm accompanied with acute pain. Dubois, you may remember, referred the pain of hemicrania to angio-spasm. And our distinguished emeritus registrar, in his classical monograph on the disease, notes a number of instances and discusses this theory very fully. One does occasionally meet with an extraordinary degree of contraction of the temporal arteries during a paroxysm, but I have never seen an arterial distribution of the pain, nor are the vessels themselves sensitive.

The painful extremities in the various pathological states described as Raynaud's disease afford the best illustrations of disturbance of sensation as a direct result of angio-spasm. In a great many of the cases there is either obliterative endarteritis or the thrombo-angiitis of Buerger. But numerous observations show that spasm alone may account for all the symptoms. The paroxysmal character of the attacks, the intensity of the pain, the direct association with angio-spasm, suggest its vascular origin. It is an interesting point, too, that angina pectoris has been met as a complication of Raynaud's disease. In the case reported by Cleeman, a man, aged 62 years, had from his fiftieth year severe attacks of Raynaud's disease, chiefly in the hands, and usually in the winter season. Following several pronounced attacks of local asphyxia, and local syncope in the hands, he had one day a very severe paroxysm of angina pectoris; the pain lasted for two hours and was of such intensity that he was greatly prostrated. The association of migraine with angina pectoris, particularly the vaso-motor type, has long been recognised, and is discussed by Dr. E. Liveing; two of my patients had been great sufferers with typical migraine.

ARTERIAL SPASM.

Let us now consider in what conditions we actually see spasm of the arteries; and by spasm I mean a persistent contraction leading to ischæmia, with disturbance of function of the parts supplied. Raynaud's disease is, of course, the type of an angio-spastic affection. One does not actually see the arteries contract, but one may feel the gradual reduction in volume of the pulse, even to obliteration. One may feel a full, easily palpable radial contracted to a narrow cord, followed by a gradual blanching of the skin of the hands. The spasm may affect the smallest twigs, such as those distributed to the extreme tips of the fingers, or it may be the tip of one finger only. The spasm is not always painful, but it may be associated with intense pain, and I have noted in one or two instances that there is greater pain with the local syncope, and the reactionary intense hyperæmia, than with the cyanosis. Of late in so many instances of so-called Raynaud's disease arteritis has been discovered that is well to insist upon the fact that the most advanced necrosis may occur as a consequence of spasm in vessels apparently healthy. Russian Jews are subject to a very remarkable malady studied by Buerger of the Mount Sinai Hospital, New York. While similar in some features to Raynaud's disease, it differs anatomically in having widespread obliterative endarteritis, with thrombosis of the veins; indeed, the disease may begin in the veins, so that Buerger calls it "thrombo-angiitis." The same condition has been shown by Parkes Weber in several Russian Jews at the Clinical Section of the Royal Society of Medicine. Buerger writes me that in two cases of typical Raynaud's disease in which he performed amputation of the leg the arteries were found normal; evidence of exceptional value, as this observer has made a special study of the condition of the vessels in some 30 or 40 cases of thrombo-angiitis of the leg.

There is one place in which we can actually see spasm of the arteries associated with loss of function. In numbers of instances of amaurosis spasm of the papillary arteries has been noted by Priestley Smith and others. I have seen but one case myself—a man with small contracted kidneys and the usual associated vascular changes, became blind while walking from the out-patient department to the ward, and was unable to see for some hours. The retinal arteries on both sides were strongly contracted and I had the advantage of the confirmation of the observation by my colleague, Buller, the well-known ophthalmic surgeon. In Raynaud's disease a similar contraction of these vessels has been seen, originally by Raynaud himself, since then by a number of observers, and quite recently in an interesting case reported by Friedman.[5] In none of these cases has pain been mentioned as a symptom. I know of no other conditions in which we actually see angio-spasm with disturbance of the function.

And now let us leave the solid ground of observation for a few minutes. As I mentioned in my first lecture, the term "vascular crises" was introduced by James Collier in discussing the features of erythromelalgia, and it is a most useful term which admirably expresses the state of affairs in the recurring paroxysms of Raynaud's disease. It has been used with great effect by recent authors, particularly by Pal of Vienna, in whose monograph, "Gefässkrisen" (Leipsic, 1905), the whole question is exhaustively considered, more particularly in reference to its association with high tension and arteriosclerosis. The profession is at present riding on the top of a cardio-vascular wave, and it is impossible to approach questions without considering blood pressure and sclerosis. In Pal's hand the vascular crisis is a key to unlock many of the mysteries of disease in head, chest, and abdomen. Paroxysmal high tension we know with its remarkable phenomena—cardiac dyspnœa, cardiac pain, headache, uræmic symptoms, nausea, vomiting, and convulsions. No one who has seen much of blood pressure work can doubt that in patients with arterio-sclerosis these paroxysms play a very important part; but when we come to conditions of *local* high tension associated with contraction of the arteries, I confess that we are a little bit in the spray of the wave, and yet it may be used as a working hypothesis to explain a whole group of obscure conditions. As briefly stated, Pal's contention is: "Where the tension is produced by contraction in a definite vascular area, local consequences follow and dominate the picture. These are manifest chiefly by a peculiar painful sensation and local disturbance of function. General phenomena to a greater or less extent are manifest at the height of the tension." One is a bit staggered at the very free use which many writers make of the vascular crises, but it is a seductive theory and only the name is new. We have, I think, evidence that sclerotic arteries are specially prone to spasm. In many of Buerger's cases of thrombo-angiitis the symptoms were in part due to spastic contraction; in intermittent claudication vascular spasm plays a part, and one may actually see the foot get pale, as the patient begins to complain of pain and stops walking. We have really very little positive evidence of angio-spasm of the internal vessels. In a few remarkable cases of Raynaud's disease transient cerebral symptoms have occurred—aphasia, monoplegia, epilepsy, either at the time of or alternating with peripheral attacks. So transient has been the disturbance of function that it could be scarcely any other condition than angio-spasm. This was the view I took of the two remarkable cases which I reported some years ago. Now we have in arterio-sclerosis identical transient cerebral attacks for which it is scarcely possible to offer any other explanation. The condition, familiar to me for more than 25 years, was brought to my notice by the illness of a warm personal friend, who before his forty-fifth year was the subject of the most advanced sclerosis, with high tension. He had literally scores of attacks of transient paralysis, of monoplegia, asphasia, occasionally hemiplegia for 24 hours; and once as he got off the steamer after a trip to England he became paraplegic and remained so for nearly two days. The attacks are not always associated with very high tension. The cases are by no means uncommon, and a peculiarity is the extraordinary frequency of the attacks and their transient character. The question has recently been reopened in an interesting discussion on intermittent closure of the cerebral arteries by Lauder Brunton, William Russell, and Hobhouse in the *British Medical Journal* towards the end of last year. The correspondence shows how numerous are the cases. It will be fresh in your memory how ably Dr. A. E. Russell supported the vaso-motor or arterial-spasm view of the origin of epilepsy in the Goulstonian lectures of last year.[6]

---

[5] Friedman: American Journal of Medical Sciences, February, 1910.

What evidence is there of the existence of angio-spasm in angina pectoris? In many cases the attack begins directly as a peripheral vaso-constrictor storm, with cold hands and cold feet, pallor of the face, and sweating. Nor is this simply in the so-called functional type, but in the severest forms an emotional disturbance may initiate a widespread contraction of the arteries. During the paroxysm it is by no means uncommon to find the radial pulse on one side very much smaller than on the other. I have notes of six cases in which this observation was made, and there may be associated pain, numbness, and tingling. In a few instances spasm of local arteries has occurred with the features of Raynaud's disease. I have already mentioned Cleeman's case in which the diseases coexisted. And Worton[7] has reported an instance in a woman, aged 54 years, in whom after attacks of angina the tip of the left middle finger always became dead white and numb. That is as far as the facts carry us, and they indicate a widespread tendency in the disease to angio-spasm. I discussed in the last lecture with a purpose the extra-pectoral phenomena of the disease, as these receive their most suitable explanation in the spasm of the arteries. In one case the attacks of pain in the leg occurred with intermittent claudication. The sensations in the leg in Dr. W. W. J.'s case, which initiated the attack, were identical with those I have seen in the arm, with definite contraction of its blood-vessels. The three cases with transient aphasia or paralysis during the paroxysms are suggestive of intermittent closure of the vessels, particularly when one considers the similar attacks in Raynaud's disease and the frequency of such a transient paralysis in arterio-sclerosis. It is quite possible that the pain in the testis, such as I have reported, and of which there are a number of cases in the literature, may be associated with arterial spasm, and a suggestive fact is that the organ may become swollen after the attack.

A consideration of the very important group of cases in which the pain is limited to the abdomen throws light on the question. Except in distribution the symptoms may be identical. Pectoral and abdominal attacks may alternate, or one may spread into the other. Death may occur with only the abdominal pain. Special consideration of this angina abdominis may be found in the "Archiv für Verdauungs-Krankheiten," Band IX. and X., by Buch. These attacks have a striking resemblance to three well-known forms of abdominal crises—the lead, the tabetic, and that met with in purpura and angio-neurotic œdema.

The whole question of visceral pain has of late years undergone revision. Haller, Mackenzie, Lennander, and others conclude that practically all organs innervated by the sympathetic and vagus are insensitive to ordinary stimuli. After having gone through a painful visceral experience, one appreciates the force of Dr. Johnson's method of refuting Bishop Berkeley's theory of the non-existence of matter. "I refute it thus," he said, kicking a stone; but of course they refer to ordinary extrinsic stimuli. It was Riegel, I believe, who first suggested that the pains of lead colic were due to spasm of the branches of the intestinal arteries, with ischæmia and œdema of the wall. Pal explains the abdominal pains in tabes as a vascular high-tension crisis, with spasm of the smaller intestinal arteries, and stretching of the nerve plexuses of the proximal arterial wall. Very high peripheral blood pressure exists during the paroxysms, as in a case recently reported by L. F. Barker,[8] in which, in a woman, the pressure rose to 210 mm. Hg. It is a reasonable inference that the crises of these two states are really vascular. We have positive evidence of it in the extraordinary abdominal crises of purpura and angio-neurotic œdema. There are now nearly a score of cases which have been operated upon for "the acute abdomen." Œdema of the wall of the stomach or bowel, or œdema with hæmorrhage, has been the usual condition found; though, as in the remarkable case reported in last week's LANCET by Collinson, intussusception may be present, and it would be very apt to follow a localised œdema. I do not know that these cases specially favour a view of angio-spasm, but they, at any rate, point to a vascular origin. We may accept the view that the bowel wall is insensitive to ordinary stimuli, but the visible peristaltic colic of any chronic obstruction, with its character of smooth muscle pain, demonstrates in blunt Johnsonian fashion the existence of nerves capable of transmitting painful sensations from intrinsic stimuli, whether they exist in the arteries alone, as some believe, or are distributed among the tissue elements of the wall itself.

THE CONCLUSION OF THE MATTER.

After all this talk, what in a few words is a reasonable explanation of the pain in angina? Angina results from an alteration in the working of the muscle fibres in any part of the cardio-vascular system, whereby painful afferent stimuli are excited. Cold, emotion, toxic agents interfering with the orderly action of the peripheral mechanism, increase the tension in the pump walls or in the larger central mains, causing strain, and a type of abnormal contraction enough to excite in the involuntary muscles painful afferent stimuli. Mackenzie suggests that there is rapid exhaustion of the function of contractability, which is after all only the *fatigue* on which Allan Burns laid stress; but I feel that in disturbance of this Gaskellian function is to be sought the origin of the pain, whether in heart or arteries. This is practically the explanation given by the late T. K. Chambers and by Lauder Brunton and has received, Sir, your sanction. In stretching, in disturbance of the wall tension at any point, and in a pain-producing resistance to this by the muscle elements, lie the essence of the phenomena. In a man with arterio-sclerosis and high pressure, and all the more likely if he has a local lesion, a syphilitic aortitis for example, disturbance, at any point, of the tension of the wall permits the stretching of its tissues. Spasm or narrowing of a coronary artery, or even of one branch, may so modify the action of a section of the heart that it works with disturbed tension, and there are stretching and strain sufficient to arouse painful sensations. Or the heart may be in the same state as the leg muscles of a man with intermittent claudication, working smoothly when quiet, but instantly an effort is made, or a wave of emotion touches the peripheral vessels, anything which heightens the pressure and disturbs the normal contraction, brings on a crisis of pain. I do not know of any better explanation of anginal pain, and it is nice to think that in its main features it came from one of the earliest and ablest of British student of diseases of the heart—Allan Burns.

What is the explanation of the sudden death? There are three modes of dying in angina pectoris. The one which specially interests us here is the form which, as Walshe says, "is sudden, instantaneous, coeval, with a single pang." It is the quickest death we see, and is that which may have been in John Henry Newman's mind when he penned the lines describing the death of his mother—

> "One moment here, the next she trod
> The viewless mansions of her God."

No form of death so placid, so peaceful, and so much to be envied, as it probably is without a pang. The functions of life appear to stop abruptly, with a gasp or two all is over. It is extraordinary how little a man may be disturbed in this death. An old doctor whom I knew well stopped at his house to write a prescription. With pen in hand he died at the desk, where I found him, as if in sleep, with his head peacefully on his arm and pen in hand. Another friend the subject of angina, whom I had only left a few minutes previously, talking quietly to Dr. Thayer, fell over on his bed, both pulse and breathing seemed to stop simultaneously. It must be a vagal death, a sudden inhibition of the inspiratory centre in the medulla. No other explanation seems possible for such a condition as that which I described in the last lecture, in which the respiration stopped abruptly and in which a feeble heart's action continued for 45 minutes. It is exactly paralleled in chloroform death, when the inspiration stops abruptly, while the heart may continue to beat. In a third case in which I saw the death the suddenness with which the change took place was extraordinary. He was a man, aged 48, who had had very severe attacks. During my visit he was very comfortable, and he talked pleasantly and hopefully about getting back to his work. I was about to leave the room when he gave a sudden cry, clasped his hands over his heart, the eyes became fixed, and he fell over dead after giving two inspiratory gasps. No pulse could be felt at the wrists, but feeble heart sounds could be heard for three minutes.

---

[6] THE LANCET, April 3rd (p. 963), 10th (p. 1031), and 17th (p. 1093), 1909.

[7] THE LANCET, April 16th, 1898, p. 1053.

[8] Johns Hopkins Hospital Bulletin, February, 1910.

A second mode of death is also seen in which, following a series of severe attacks, the heart grows gradually feebler, and the patient dies in progressive asthenia, often with Cheyne-Stokes respiration.

And thirdly, a certain number of patients die in the cardiac complications, and it is interesting to note how after great misery, caused by repeated attacks, when cardiac insufficiency is established, even with the dyspnœa, the patient is much happier, and dies slowly, if not so suddenly and placidly.

A Lecture

ON

THE TREATMENT OF THE SURGICAL FORMS OF TUBERCULOSIS BY TUBERCULIN.

Delivered at the Medical Graduates' College and Polyclinic, London, on Jan. 31st, 1910,

By NATHAN RAW, M.D. Durh., M.R.C.P. Lond., F.R.S. Edin., D.P.H.,

PHYSICIAN, MILL ROAD INFIRMARY, LIVERPOOL; MEMBER OF THE INTERNATIONAL COMMITTEE FOR THE PREVENTION OF CONSUMPTION.

Gentlemen,—Two years ago I had the honour of delivering a lecture in this College on Tuberculosis, which was published in The Lancet,[1] and I then brought before your notice 104 cases of so-called surgical tuberculosis which I had treated with Koch's tuberculin. I promised to delay my decision on the efficacy of the treatment until two years had expired, and I now have pleasure in further reporting to you the results of my work.

The views which I venture to lay before you to-day are based on an observation of over 4000 cases of pulmonary tuberculosis, and over 1800 cases of so-called surgical tuberculosis, all of which have been under my own care in hospital. In addition to this exceptional opportunity for clinical observation I have made over 2000 necropsies on tuberculous cases. My endeavour has been to form a judgment on this most difficult problem from clinical study of all the various manifestations of the disease, and to try, if possible, to discover the cause and mode of entry of the bacillus in each particular case.

The theory which I published in 1903, and which further work only tends to confirm, is briefly as follows: That tuberculous lesions in the human body must be divided into two great groups according to their origin, and that the true example of human infection is pulmonary tuberculosis or consumption; in other words, man is susceptible to both human infection and bovine infection.

1. Bacilli of the typus humanus produce the following lesions: (1) pulmonary tuberculosis; (2) tuberculous laryngitis; and (3) secondary intestinal ulceration.

2. Bacilli of the typus bovinus produce (1) tuberculosis of mesenteric glands and intestines, (2) of peritoneum, (3) of lymph glands, and (4) of genito-urinary organs; (5) lupus; (6) acute miliary tuberculosis; and (7) meningitis (often).

Methods of Infection.

From my observation of a large number of cases, both ante- and post-mortem, I would say that the lungs may be infected in one of four ways: (1) Direct inhalation of bacilli; (2) downward infection from cervical lymph glands; (3) upward infection from abdomen through diaphragm to bronchial glands (lymphatic); and (4) by blood stream, as in acute miliary tuberculosis. It is also of importance to bear in mind that the lungs may be seriously infected with bovine infection, either from the digestive tract or from lymph glands.

If we examine hundreds of cases of consumption in sanatoria we must all have been struck with the fact that in nearly all the cases the disease is confined strictly to the lungs and that it is most rare to find tuberculous joints and glands or lupus associated with phthisis. On the other hand, it is rare to find cases of joint, gland, or abdominal tuberculosis develop phthisis, as they generally die from waxy disease and exhaustion. I have never met with a case of abdominal tuberculosis or tuberculous glands which had not been fed on cows' milk, and although over 15,000 children under the age of 1 year have been fed with sterilised milk and careful records kept, yet no single instance of tuberculosis of the abdomen or glands has been observed. I have never observed a single case of true phthisis pulmonalis in an adult develop tuberculous meningitis.

It has been strongly stated by several observers that 80 or 90 per cent. of all necropsies show a tuberculous infection, but these are not human infections: the great majority of them are mild bovine infections which have healed and caused no further trouble, although some of them light up after measles and other acute diseases and cause a general tuberculosis.

From my observations I am led to the conclusion that human and bovine bacilli are different varieties of an originally common species, and that the human body may be attacked by both of them, but that bovine infections are almost always produced in the milk-drinking period. We must attack the disease from both these sources. When pure milk can be supplied to children it is my opinion that the non-pulmonary forms of tuberculosis in children will disappear. But even if tuberculosis amongst cattle entirely disappeared to-morrow, we should still be left with the dread consumption which will only be stamped out by steady coöperation, education, and improved hygiene, combined with the most enlightened methods of prevention and scientific treatment.

This artificial division is purely tentative and may have to be considerably modified in the light of future investigation, but for the present, I am convinced of this distinction and the whole of my work is based on this idea. These two great groups of tuberculosis seem to be antagonistic to each other, so that a person who has been attacked by pulmonary tuberculosis is not likely to suffer from any of the lesions produced by the bovine group, and of course, persons who have been attacked by the bovine group seem to be protected against pulmonary tuberculosis. It must, however, be clearly understood that the lungs may be attacked by bovine tubercle bacilli either in the form of acute miliary tuberculosis of the lungs, or in the course of a general blood-stream infection. The lungs may also be attacked by direct extension from tuberculous glands in the neck, resulting in a complete disorganisation of the lung which cannot clinically be distinguished from ordinary pulmonary tuberculosis. I propose to call this infection of the lungs "Bo-phthisis."

Just as various tuberculous lesions seem to have an antagonism to each other in the body, so the various kinds of tuberculin have a selective influence in their curative effects. It seems to be impossible to produce an immunity either in animals or in the human body by repeated injections of the same form of tubercle as that from which the patient is suffering. Repeated experiments have shown that cattle cannot be immunised or protected against bovine tuberculosis, by small and repeated injections of bovine tubercle, but, on the other hand, it has been found easy to immunise large numbers of cattle against tuberculosis by injecting them with small and accumulating doses of human tubercle bacilli. It seems, therefore, from these experiments that the same principles will have to be applied to the human body in the treatment of the various forms of tuberculosis, and I have found that Koch's tuberculin R. has proved of little value in the treatment of pulmonary tuberculosis, which is what we would expect when we remember that it is prepared from human tubercle bacilli. It is, however, not the case in the treatment of tuberculosis of the bovine group.

Koch's tuberculin R. has a most beneficial and curative effect in treating all forms of so-called surgical tuberculosis which are in my opinion of bovine origin, and I have to record a large number of apparent cures by the use of this tuberculin. It is my firm opinion that by far the larger proportion of tuberculous glands, abdominal tuberculosis, and meningitis are the result of infection during the milk-drinking period of life (0–3 years), and I am convinced, from an observation of a great many cases, that when tuberculosis is eradicated from dairy cows it will be a rare event to see a case of surgical tuberculosis in the human subject.

---

[1] The Lancet, Feb. 15th, 1908, p. 481.

TUBERCULINS.

In treating cases of tuberculosis with bacterial products our aim is to attain an immunity against the tubercle bacilli themselves. In using Koch's old tuberculin we aim at immunity against the bacterial toxin. In using Koch's new tuberculin we aim at immunity against the bacteria. Koch's aim was to combine in his later treatment both these forms of immunity in the treatment of tuberculosis.

Before discussing the actual effects and results of treatment it is necessary to mention briefly the various tuberculins and other preparations which have been suggested and used by different observers, all more or less based on the same lines. We owe to Koch the three chief preparations now in general use, and these will be taken as a basis for consideration of the whole question; the other remedies suggested will also be described. In the first place, we must carefully distinguish between those preparations which produce an active immunity and those which produce a passive immunity. In active immunisation the organism has to produce specific antibodies in the serum, as the result of the absorption of bacteria or their products; on the other hand, in passive immunisation these are already produced in some other organism and introduced into the human body by means of a specific serum.

The discovery of tuberculin by Koch after years of incessant labour is described in his own words. He found primarily that animals which were tubercular reacted in quite a different manner to infection from animals which were non-tubercular.

> When a healthy guinea-pig is inoculated with a pure culture of tubercle bacilli, as a rule, the wound closes and appears in the next few days to have healed. But in the course of 10 to 14 days a hard nodule appears, which soon breaks down and remains until the death of the animal as an ulcerating area. The course is entirely different when an already tubercular guinea-pig is inoculated; the animals best suited for the purpose are such as have been successfully inoculated four to six weeks previously. In such an animal the wound closes at first, but no nodule develops, and on the second or third day a characteristic change occurs at the site of inoculation; it becomes hard and assumes a dark colour, and this change is not limited to the site itself, but spreads over an area of diameter 0·1 to 1 centimetre. From day to day it becomes clearer that the altered skin has become necrotic, it is finally cast off, and there remains a flat ulcer which generally heals quickly and permanently, without any infection of the regional lymphatic glands.
>
> Koch found, further, that sterilised cultures of tubercle bacilli rubbed up in water, and injected. even in considerable quantity, into healthy guinea-pigs, only gave rise to suppuration, but that in tubercular animals very small quantities of the same cultures sufficed to kill within a short time. Their lives, however, may be saved by the repeated methodical use of high dilutions, and obvious improvements obtained. When emulsified bacilli were employed it was found that they were not absorbed at the site of injection, but remained a considerable time unaltered, giving rise to local abscess. The curative substance must then be dissolved out of the body-juices, bathing the bacilli, whilst the substance giving rise to abscess formation remains behind apparently in the bacilli, or is only very slowly dissolved out.

Koch showed that man was more susceptible to tuberculin than the guinea-pig. He also expressed the opinion that tuberculin had no specific action in killing the tubercle bacilli in the tissues, but that the tissues enclosing the bacilli were affected with great circulatory and metabolic changes, causing the tissues to slough and become necrotic. Koch held the view that the disappearance of the reaction to tuberculin was due in the body to the destruction of the tubercular tissues, but later views suggest that this is due to immunisation against the toxins of tubercle bacilli.

The result of this view as to the exact action of tuberculin led to the administration of doses which were too large and even dangerous, and although cases of localised disease, such as lupus, &c., were apparently cured, yet advanced cases of phthisis were certainly aggravated by this excessive reaction, with the result that the treatment fell into disuse and was for a time discredited. A few enthusiastic and scientific workers, however, revived the tuberculin treatment, amongst them being Spengler, Petruschky, Krause, and Thorner. The idea was to give tuberculin in small and graduated doses so as to avoid severe reactions, and yet ultimately to arrive at large doses by gradually producing an immunity in the tissues of the patient.

This method has proved of immense benefit and has met with striking success. Bandelier and Roepke describe it in the following words. 1. It fulfils the first axiom in all medical treatment, *nil nocere*, and at the same time cuts the ground from under the opponents of the method. 2. It is in accordance with the demand to avoid reaction by using the minutest doses, and yet allows the highest and most potent doses to be reached. 3. It extends the indication for tuberculin treatment by bringing the severer forms within its reach. 4. It admits of the simultaneous and unhindered application of other well-proved methods of treatment and may be carried out in out-patients' practice without sacrifice of occupation.

TUBERCULINS ORDINARILY USED.

Koch's old tuberculin.—This was prepared by Koch in the following manner. He took pure cultures of tubercle bacilli which had been grown for six weeks on 5 per cent. glycerine broth, filtered and concentrated the filtrate to one-tenth of its volume, thus obtaining the soluble bodies secreted by the tubercle bacilli in a 50 per cent. glycerine medium. The dilutions are then made in the ordinary way, and a dosage commencing at 1-10th of a milligramme and gradually rising to 100 milligrammes may be used. In some cases, however, this initial dose was found to produce a reaction, so that a dose of 1-100th or even 1-1000th part of a milligramme is employed, gradually rising to the same maximum dose.

Koch's new tuberculin.—This preparation is quite different from old tuberculin. It is made by grinding dried cultures of highly virulent bacilli in an agate mortar and then centrifugalising them in distilled water. After centrifugalising, the fluid is poured off and this is called tuberculin O. or T.O. It is then centrifugalised again, when the fluid remaining is called tuberculin R. or T.R. This preparation is standardised and is preserved by the addition of glycerine. The initial dose is 1-1000th part of a milligramme, gradually rising to, in some cases, a maximum dose of 20 milligrammes.

Koch's bacillary emulsion, T.E.—With the object of increasing the specific agglutinins in the blood Koch introduced this preparation, which has been highly praised by several observers. Koch found that the greater the amount of the substance of the bacillus in the remedy the greater the increase of agglutinins in the blood. He concluded, therefore, that it was possible to produce the greatest immunity by an emulsion of the bodies of the bacilli. It is preserved in glycerine and the dilutions are made in the ordinary way. The dose is 1-2000th milligramme every third or fourth day and the amount is steadily increased until a maximum of 20 milligrammes is reached. Theoretically this preparation is a good one, but there are many objections, sentimental and otherwise, to injecting bacilli, although they are, of course, incapable of producing tuberculosis.

Koch's new tuberculin (bacillary emulsion) is a suspension of one part of pulverised tubercle bacilli in 100 parts of distilled water to which equal parts of glycerine are added. The stock solution contains in 1 cubic centimetre 5 milligrammes of solid residue. The initial dose in early cases of tuberculosis is usually 1-1000th of a milligramme, and according to the original instructions this dose should be rapidly increased until well-marked reactions follow. One of the most useful effects of this tuberculin is the almost certain reduction of fever, and I have on several occasions found that a high temperature has rapidly been reduced after five or six injections of bacillary emulsion.

Deny's tuberculin.—This is made by filtering a culture of human tubercle through a porcelain filter. The culture is grown on peptonised and glycerinated bouillon and brought to full development. The object of Denys was to prepare a tuberculin which would produce a gradual and lasting immunity. By injecting healthy dogs with this preparation in increasing doses he was able to protect them against lethal doses of tubercle bacilli without producing any sign of the disease. The guiding principle of this treatment is the mild form of administration, avoiding all reactions and watching carefully the effect of each dose so as to find the tolerance of the patient to this particular tuberculin. Denys himself reports favourable results in over 200 cases, but I have had no personal experience of it.

Beraneck's tuberculin.—This tuberculin is composed of extracellular toxins of the broth culture of special formula and of intracellular toxins extracted from the protoplasm of the bodies of the bacilli with 1 per cent. phosphoric acid. It should contain as far as possible all the substances having immunising properties, whether in the culture fluid or in the bacteria themselves, but without the other harmful toxins.

The therapeutic effect of this tuberculin depends on its active immunising effect, and on a gradually raised resisting power to the toxins. Results by many clinicians are favourable, and in cases of early pulmonary disease in conjunction with sanatorium treatment I have had excellent effects from this tuberculin. It is easily administered, and in my hands I have never observed any marked reactions.

Bovine tuberculin.—The result of the teaching of Koch as to the difference between human and bovine tubercle bacilli has led me to use a tuberculin prepared from bovine cultures, and made in exactly the same way as Koch's tuberculin R. As far as I know, the first bovine tuberculin used in this country was made from my own cultures which I grew in the laboratory, and which were prepared and standardised by the Clinical Research Association. I use bovine tuberculin only in cases of consumption, because this is an infection by the typus humanus, whilst in other forms of tuberculosis I use a tuberculin prepared from human sources (Koch's tuberculin R.).

METHOD OF TREATMENT.

It is preferable (though not necessary) that the patient should stay in bed a few days before and after the first injection. The temperature and pulse should be noted every four hours before treatment, and if not above 100° F. at any time the first injection of 0·0001 milligramme may be given under the skin, with, of course, the strictest aseptic precautions. The temperature and pulse should be taken every two hours afterwards for 24 hours, and then every four hours for 48 hours more. If any reaction is going to take place the temperature will rise up to 100° or 101° within the first 12 hours or even later; but experience has shown that if the injections are commenced with such a small dose and slowly and gradually increased no reaction follows, and beyond an occasional slight headache or feeling of sickness no disagreeable symptoms are observed. In fact, many patients visit the consulting-room for their injections every week and continue their ordinary duties in the interval without any personal inconvenience. The second injection of 0·0002 milligramme is given after an interval of one week, provided no reaction has followed the first injection, in which case the first injection is repeated and then doses (in milligrammes) in the following order: 0·0004, 0·0005, 0·0025, 0·003, 0·004, 0·005, 0·0075, and 0·01 (maximum dose), making in all 12 injections. If the patient requires further injections the last injection of 0·01 milligramme is repeated for a few more doses, but that dose is never exceeded. After the first two or three injections the patient generally feels better, the temperature drops to normal, the appetite is improved, and there is a feeling of general improvement. Not even the slightest bad effect has been observed from the injections, but, of course, great care must be exercised in the technique, and a careful watch must be kept on the doings of the patient during the course.

Many of us had experience of the tuberculin introduced to the profession by Professor Koch 16 years ago. It was used in a great many cases of phthisis and other forms of tuberculosis without discrimination, but it was soon found that the most marked effects of the tuberculin were produced by injecting it in cases of lupus. I well remember, after obtaining it with great difficulty, injecting several cases of lupus. The reaction was terrific, and from notes from one of my cases I find that the temperature ran up to 105°, the pulse 140, whilst the inflammatory reaction on the lupus itself was most intense. The patient complained of a hot, parched, burning sensation all over his body; in fact, felt he was going to die. In the course of five days he developed acute tuberculous meningitis, and died within a week. Although I had no other fatal cases, yet in most of them the reaction was acute and in some alarming. In four cases of phthisis in which I used it the patients were made rapidly worse; in fact, the effects were so serious that the remedy was very quickly dropped by the profession. We now know that the only fault of the tuberculin was its dosage. It was a powerful remedy, and too large a dose was administered without the slightest scientific knowledge as to its action. At the present time the effects of tuberculin are produced by the administration of minute doses with careful observation as to the effects of each dose. The tuberculin is slowly increased in strength, thus gradually immunising the patient to it until by degrees a maximum dose of 1-100th part of a milligramme is administered.

I now proceed to relate the particular cases in which tuberculin has been used, and although it is impossible to enter into details in this short lecture, yet I will endeavour, as far as possible, to classify the different groups of cases with their results.

TUBERCULIN DIAGNOSIS.

We have in tuberculin a very certain and simple method of deciding whether or not a person is suffering from tuberculosis. The four chief methods of employing it are as follows: (1) conjunctival test (Calmette); (2) cuti-reaction (von Pirquet); (3) Moro's ointment method; and (4) injection of tuberculin.

The first method, introduced by Calmette, consists of placing a drop or two of tuberculin in the eye and watching for the development of a mild conjunctivitis. This is a simple and useful way of making the test, but unfortunately it had its drawbacks in the fact that occasionally it produced a purulent conjunctivitis, which was disagreeable although not dangerous, and in some advanced cases it failed to give a satisfactory result. I have now quite abandoned this method.

The second method, introduced by von Pirquet of Vienna, is a really useful and reliable test. It consists of simply scratching the skin and dropping on a drop or two of tuberculin of fair strength in much the same way as vaccination. If the patient is tuberculous an erythematous blush around the margin of the scratch makes its appearance in a time varying from one hour to 24 hours according to the severity of the attack. As a general rule the reaction appears in six or eight hours, and may last for two or three days or even a week. Although, as a rule, the reaction is a mild one and often unnoticed by the patient, yet I have had four cases in which a very violent reaction followed, with high temperature and a hard brawny cellulitis extending to the axilla in three cases and in one case even suppuration. In my experience a very large number of persons have received a mild infection of tubercle, which causes no symptoms, such as caseating mesenteric glands or bronchial glands, or even undiscovered phthisis. These persons will give a positive cuti-reaction, although no active lesions are noticed. A positive reaction, therefore, is, although confirmatory of suspected tubercle, of no more value, but a negative reaction is of great value in excluding tubercle altogether, and I have found this test to be remarkably certain and reliable.

With a view of endeavouring to diagnose the exact nature of a tuberculous infection, we have been using both human and bovine tuberculin for the cuti-reaction as first recommended by Detre of Vienna. In every case now we use human tuberculin on the right arm and bovine tuberculin on the left arm, with a control test on each. The suggestion is that a bovine lesion would cause a reaction to bovine tuberculin and *vice versa.* I have been assisted in this work by Dr. E. L. Williamson, one of the resident medical officers of the hospital, to whom I am greatly indebted, and we find that out of 114 cases in which the double test was made cases of phthisis which are human infections almost invariably react to human tuberculin and occasionally also to bovine, but that cases which react to bovine tuberculin invariably react to human also. I do not understand the exact significance of this, but I think that as a general guide to diagnosis this test is of some importance, but further work is required before certain deductions can be drawn.

The test suggested by Moro of rubbing a little ointment containing tuberculin into the skin is simple and fairly reliable. It produces a small crop of papules near the scratch and a little irritation. This test is suitable for children.

Injection of tuberculin for the purpose of diagnosis is now rarely practised and is not altogether free from danger.

RESULTS OF TREATMENT.

Tuberculous glands.—61 cases of tuberculous glands in the neck and elsewhere have been treated with human tuberculin with very astonishing and excellent results. The ages of the patients have been from 3 months to 43 years, and in all the cases a history of drinking cow's milk, sometimes in large quantities, has been obtained. In my opinion, nearly all tuberculous glands in the neck are caused by absorption of bovine bacilli through the tonsils, fauces, or carious teeth. If the infection is a mild one, perhaps only one gland is involved; if severe and long-continued, the whole of the glands in both triangles in the neck may be infected, extending even

Von Pirquet Reactions.

No.	Age.	Diagnosis.	Von Pirquot.	
			Human.	Bovine.
1	17	Enteric fever.	Negative.	Negative.
2	57	Debility.	Positive.	Positive.
3	45	Tuberculous laryngitis.	,,	—
4	24	Bronchiectasis.	Negative.	Negative.
5	24	Pulmonary tuberculosis.	Positive.	—
6	22	,, ,,	,,	—
7	6	Adenitis, neck.	,,	Negative.
8	34	Pyelitis.	Negative.	,,
9	24	Pleurisy.	,,	,,
10	24	Sluggish sinus following wound of arm.	,,	—
11	13	Tuberculous peritonitis.	Positive.	—
12	21	Epilepsy.	Negative.	—
13	28	Pneumonia.	,,	—
14	24	,,	,,	—
15	17	Pulmonary tuberculosis.	Positive (marked).	Positive (faint).
16	40	,, ,,	Positive.	—
17	17	,, ,,	Positive (faint).	Negative.
18	40	,, ,,	,, ,,	—
19	42	,, ,,	Positive.	Positive (faint).
20	21	,, ,,	,,	,, ,,
21	31	Pleurisy.	,,	Negative.
22	60	Pulmonary tuberculosis.	,,	—
23	19	Bronchitis.	,,	—
24	57	Rheumatism.	Negative.	—
25	19	Enteric fever.	,,	—
26	7	Debility.	,,	Negative.
27	31	Pneumonia.	Positive.	—
28	18	Pulmonary tuberculosis.	,,	Positive.
29	6	Bronchitis.	,,	—
30	8	Pneumonia.	Negative.	—
31	—	Pulmonary tuberculosis.	Positive (faint).	Negative,
32	—	Pneumonia.	Negative.	,,
33	—	Addison's disease.	Negative. Positive (faint).	Negative (18/11/09). Positive(faint) (19/11/09).
34	—	Bronchitis.	Negative.	Negative.
35	—	Ulcer of thigh.	Negative. Positive (6/12/09).	Negative (29/12/09). —
36	23	Bronchitis.	Negative.	Negative.
37	18	Pulmonary tuberculosis.	Positive.	Positive.
38	47	Enteritis.	Negative.	Negative.
39	53	Bronchitis.	Positive (faintly).	,,
40	30	Pleurisy.	Positive (marked).	Positive (faint).
41	22	? Enteric fever.	Positive.	Positive (more marked).
42	40	Enteric fever.	Negative.	Negative.
43	60	Pneumonia.	,,	,,

directly down to the axillæ and chest wall. It is important to remember that these glands may extend down directly to the apex of the lung, setting up an acute tuberculosis of the lung, which I call "bo-phthisis," and which may be indistinguishable clinically from ordinary phthisis. I have notes of 23 such cases where the primary infection was in the neck glands, extending directly to the apex of the lung and pleuræ of both sides.

I am always very careful to try to discover if any suppuration is present in glands before giving tuberculin. If the glands are actively caseating and suppurating tuberculin does no good and even in some cases may do harm. In these cases the caseating glands should be incised and packed with thymol or iodoform, or, if possible, excised *en masse.* When these glands have been dealt with the course of tuberculin should be given, together with the usual fresh-air treatment and cod-liver oil, &c. In the great majority of cases the glands rapidly reduce in size and in the course of a few months almost disappear.

Although glands in the neck are usually primary, I have seen three instances where a general tuberculous infection has rapidly spread upwards from the abdomen, through the diaphragm to the bronchial glands, thence to the lungs, and directly upwards to the glands in the neck, terminating fatally soon afterwards. If the neck glands spread downwards on to the chest wall, involving the superficial pectoral glands and even the axillæ, the case generally does well and tends to recover, but if the deep mediastinal glands are affected, then the process spreads to the lungs and the result is very unfavourable.

I am strongly averse to extensive dissections in the neck with the object of clearing out all tuberculous glands. The caseating or suppurating glands should always be opened or removed, as they are a source of danger, but the glands which are not caseating will nearly always disappear after a course of 12 or 15 injections of tuberculin. I look upon glands in the neck as the most favourable lesions for treatment with human tuberculin.

Tuberculosis of the uterus and Fallopian tubes.—Although I have made careful post-mortem examinations of 876 females between the ages of 15 and 60 years who have died from pulmonary tuberculosis, I have never met with a single case where the generative organs were attacked by tubercle. I have met with 16 cases of tuberculosis of the Fallopian tubes post mortem, and in 5 the cause of death was general miliary tuberculosis. In the remaining 11 cases death was from other causes.

In my opinion, tuberculosis of the female generative organs and bladder is the result of direct extension from a tuberculous focus within the abdomen, and is of bovine origin. Support is given to this view from the fact that these tuberculous lesions respond most favourably to treatment by Koch's tuberculin, as of course do all other forms of surgical tubercle.

I have treated 17 cases of tuberculous salpingitis with injections of Koch's tuberculin, having previously had the tubes removed by operation, and the results have been most gratifying. In fact, several of them have been completely cured, with increase of weight and loss of all symptoms, although in five cases the bladder was involved. I have just seen a case of a woman who, at the time of operation for tuberculous tubes, was found to have extensive tubercles scattered over the intestines and mesentery. After four months' treatment with tuberculin she made a complete recovery and gained 28 pounds in weight.

Genito-urinary tuberculosis.—Tuberculosis of the genito-urinary apparatus seems to respond well to tuberculin treatment, and of 26 cases which I have had under treatment 14 seemed to receive lasting benefit, whilst 12 unfortunately progressed. Of course, many of these cases were advanced on admission to hospital, but in early cases they respond well to treatment. A tuberculous testicle should always be removed, as by remaining it is liable to be followed by acute generalised tuberculosis. Tuberculous kidneys should not be removed unless suppuration is present, as they improve and often remain useful organs after tuberculin treatment. Tuberculous ulcers in the bladder are often very intractable, and may require some surgical interference as well as tuberculin, but they sometimes heal altogether without operation.

Tuberculous meningitis.—In my opinion, and as the result of very extensive investigation, *all* cases of tuberculous meningitis, together with gross tuberculous deposits in the brain, are due to bovine infection from milk. I have had under my care 207 cases of tuberculous meningitis, and in every case the child has been fed on cows' milk. I have never seen a case of tuberculous meningitis which had only been fed on its mother's milk, and, what is more remarkable, out of over 4000 cases of ordinary phthisis I have never seen one of them develop tuberculous meningitis in the course of their disease. Cases of gland or bone disease which develop symptoms of meningitis in hospital can sometimes be arrested by a few timely injections of tuberculin, and I have certainly seen two children who were undoubtedly developing meningitis make a rapid recovery after such treatment. It is my routine practice now to treat every case with tuberculin, as otherwise the disease is always fatal.

Tuberculous joints.—I am convinced that the less we do in the way of surgical interference in joints the better chance there is of recovery—absolute rest and fixation, with fresh air, &c., constitute the best possible treatment. If abscess is present the pus may be aspirated repeatedly, but always, if possible, drainage should be carefully avoided. In cases of abscess in bone it ought always to be opened and evacuated, as it is highly dangerous to leave it on account of danger of general miliary tuberculosis. In all these cases where there is no reason to suspect the presence of pus I carry out this treatment together with injections of tuberculin, and generally with excellent results.

Tuberculous peritonitis.—I have now treated 28 cases of tuberculous peritonitis in patients varying from 3 to 37 years of age. I consider that tuberculin is an absolute specific in cases of tuberculous peritonitis where the disease is confined to the abdomen. Of the 28 cases 19 have been discharged quite recovered, 6 were much better, and 3 died. If there is an excess of fluid the abdomen should be opened and drained, and the escape of the fluid is generally followed by rapid improvement, and in some cases by complete recovery. I generally give these cases about 20 weekly injections of tuberculin, watching the effects very closely.

Tuberculous abscesses and sinuses.—The unsatisfactory element in the treatment of sinuses and abscesses is the presence of a mixed infection. We are now treating these cases with staphylococcic vaccines corresponding with the patient's own discharges in a great many cases with good results. Then we give tuberculin, with the happy result that the sinuses close up and healing follows in a large proportion of cases. If waxy disease be present I never give tuberculin.

Lupus.—44 cases of lupus have been treated with the most excellent results. In two cases where the lupus recurred death took place some months afterwards from general tuberculosis of a miliary type, involving the lungs apparently by direct lymphatic extension from the neck. I have never seen a case of phthisis develop lupus, and in my experience lupus is a primary infection which may remain chronic for many years and then terminate in a general tuberculosis which carries off the patient. I am also of opinion that lupus is *always* of bovine origin, and may be conveyed by infection from person to person.

CONCLUDING REMARKS.

In conclusion, I do not for one moment think that tuberculin is a cure for all forms of surgical tuberculosis, but in my experience it is the best treatment we have to-day. It often has to be associated with surgical procedures, and the intelligent coöperation of the physician and the surgeon will often bring about a gratifying cure. I feel sure that extensive and radical operations for tuberculosis are not good, and in the case of psoas abscesses and spinal caries will often induce a blood-stream infection, followed by general miliary tuberculosis and death. In all cases where possible, pus should be removed aseptically by aspiration and not by drainage, at the same time replacing the pus by thymol or some other emulsion. It may be necessary to aspirate tuberculous abscesses as many as 20 or 30 times, but in time, under general hygienic conditions, the infection expends itself and a permanent cure results. What we want to avoid in all tuberculous lesions is a secondary infection with other pathogenic organisms, and this is difficult to avoid if there is an open wound.

It may be necessary to treat some tuberculous cases for many years before a cure results, but, fortunately, cases are now treated earlier than they were, and amputation of limbs is very rarely resorted to. In some cases this is the only course open to the surgeon to save life, as by completely removing a virulent focus the patient is enabled to recover and rapidly get fat and well. Excisions and erasions of joints will, I think, soon be a thing of the past, and I look forward with hope to the time when all tuberculous infections will be treated in the earliest stages of the disease by specific remedies which will prevent them drifting into multiple lesions and secondary infections for which little can be done in the way of a permanent remedy. I look upon tuberculosis as a most docile and willing disease to be cured, and if we could only induce our patients to undergo treatment at the earliest manifestation of the disease in the body, our results would not only be more gratifying but a vast amount of suffering and disfigurement would be spared.

UNIVERSITY OF OXFORD.—The electors have elected Mr. Ernest L. Kennaway, B.M., M.A., Hulme Research Student of Brasenose College, to the Radcliffe Travelling Fellowship.

THE ABDOMINAL WATERSHEDS AND THEIR INFLUENCE ON THE LOCALISATION OF INTRAPERITONEAL INFECTIONS.[1]

BY CHARLES R. BOX, M.D. LOND., F.R.C.P. LOND., F.R.C.S. ENG.,

PHYSICIAN, WITH CHARGE OF OUT-PATIENTS, AND LECTURER ON APPLIED ANATOMY, ST. THOMAS'S HOSPITAL; ASSISTANT PHYSICIAN TO THE LONDON FEVER HOSPITAL.

LOCALISED intraperitoneal suppuration is a condition which is of interest and importance to physicians and surgeons alike, for the formation of the abscesses is often insidious, and upon their accurate localisation and efficient treatment the life of the patient in many instances depends. With the evolution of abdominal surgery during the last 10 or 15 years a great advance in our knowledge of these conditions has occurred. The abdominal lesions which they are most likely to complicate are known, the fact that these abscesses are nearly always due to intra- and not to extra-peritoneal extension of infection is recognised, and the customary highways along which the pus travels and the localities in which it tends to collect have been mapped out.

When the body is supine the peritoneal cavity is subdivided by definite bony prominences. One of these is longitudinal, and formed by the projection of the bodies of the vertebræ. Another is more or less transverse, formed on each side by the brim of the true pelvis and the psoas muscle which rests on it. These projections, which may be called the watersheds of the peritoneum, play an important part in directing the course of purulent infections within the peritoneal cavity. The course of the effusions is further determined and limited by the various mesenteries and folds formed by the peritoneum itself. Of these structures the tranverse mesocolon is the most important, since in conjunction with the great omentum it forms a shelf which in great measure shuts off the subdiaphragmatic spaces from the rest of the abdominal cavity. The most extensive forms of subdiaphragmatic abscess have as their lower boundaries adhesions between the omentum and colon on one hand, and the abdominal wall on the other. The mesocolic shelf not only separates the subdiaphragmatic regions from the rest of the abdomen, but also, by virtue of the median prominence formed by the spine, tends to direct effusions poured out on its upper surface, either towards the region of the right kidney or else towards the left, into that part of the greater sac which contains the stomach and the spleen.

The importance of the part of the vertebral watershed which lies above the transverse colon is great, for either on its summit or on its right slope lie the pylorus and the commencement of the duodenum, whilst on the left slope rests the body of the stomach. Its right declivity is also in close relation to the gall-bladder, the bile ducts and the under surface of the right lobe of the liver.

The watershed formed by the right segment of the brim of the true pelvis probably surpasses, or at all events equals, the upper lumbar projection in importance. Near the summit of the pelvic ridge or on the surface which slopes away from it towards the right loin, the appendix will usually be found; occasionally it hangs over the pelvic side of the ridge in a position to infect the pelvic cavity alone.

When a purulent infection begins to descend the declivity which slopes from the pelvic ridge towards the right loin it naturally tends to travel alongside the ascending colon which lies on this slope. The colon, being usually more or less distended, divides the slope into two gutters, to which the names external and internal paracolic grooves have been applied. Of these gutters the external, which lies between the colon and the lateral abdominal wall, leads direct to a well around the head of the right kidney. To this well also the mesocolic slope tends to direct effusions poured out in the upper part of the abdomen. Thus the right renal well or subhepatic pouch is of importance, not only in connexion with lesions in the upper part of the abdomen (stomach, duodenum, liver, gall-bladder bile-ducts, &c.), but also with the more common inflammatory lesions of the appendix. Ascending infections may not only infect the right renal well, but tend to make their way between the left lobe of the liver and the lateral wall of the abdomen into the right subphrenic space.

---

[1] An Address delivered before the Bromley Medical Society on Feb. 8th, 1910.

The descent of fluid from the pelvic watershed along the external paracolic groove is not always unobstructed. Not infrequently a fold of peritoneum crosses this gutter and obstructs it. The fold may be well developed, so that the lower part of the right lobe of the liver is supported by it in exactly the same way that the costocolic fold supports the spleen. In such a case the fold is high up; a more common situation is that indicated by Jenkins and Maynard Smith, in which the fold passes downwards and inwards from the right flank at the level of the iliac crest to be attached to the commencement of the ascending colon above the cæcum. Sometimes multiple small septa instead of a solitary fold pass between the cæcum and the parietes of the flank. When a well-marked fold is present a purulent collection, instead of reaching the right kidney well, will be circumscribed in the right iliac fossa external to the cæcum and ascending colon. Should an ascending infection take the route offered by the internal instead of the external paracolic groove it may descend under the influence of gravity until its progress is arrested by the under side of the hepatic flexure of the colon, or it may cross the latter if not very prominent and so gain access to the renal well. Mainly because the posterior abdominal wall slopes abruptly away from the prominence of the spine towards the flank, but in part also on account of the line of attachment of the mesentery of the small intestine which crosses obliquely from the left side of the second lumbar vertebra towards a point in the right iliac fossa, collections travelling on the inner side of the ascending colon may keep fairly well to the internal paracolic groove, but at times they do diffuse themselves in the labyrinth formed by the plications of the mesentery and coils of small intestine, a condition which adds considerably to the gravity of affairs.

FIG. 1.

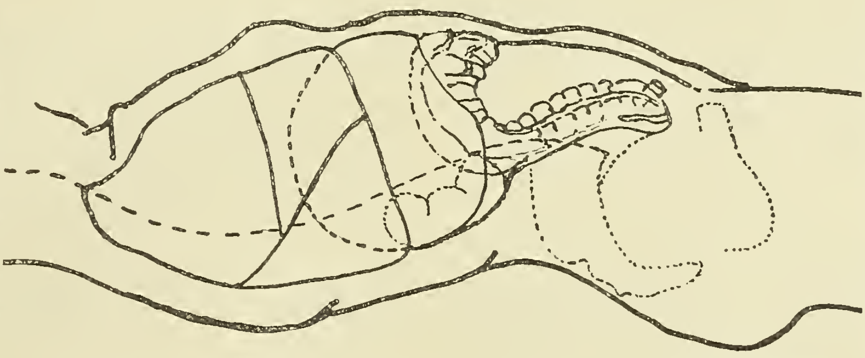


Diagram showing the slope from the right half of the pelvic watershed (appendix region) towards the right renal well, also the relation of the forward projection of the lumbar spine (longitudinal interrupted line) to the same well. The relation of the right dome of the diaphragm to the base of the right lung is indicated.

FIG. 2.

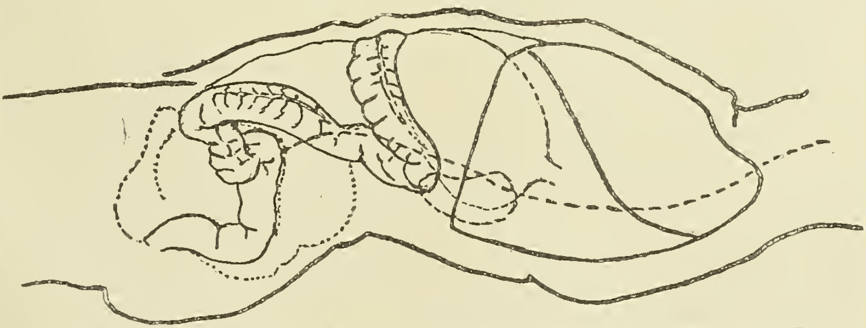


Diagram showing the slope from the left half of the pelvic watershed towards the spleen. The relation of the left dome of the diaphragm to the lower lobe of the left lung is also indicated.

Intraperitoneal infections are uncommon on the watershed formed by the left pelvic brim. Just on the pelvic aspect of this ridge is the situation occupied by carcinoma of the ilio-pelvic colon (sigmoid), but suppuration does not often occur in connexion with this, and is as a rule circumscribed. Suppuration may also occur on this watershed in connexion with inflamed diverticula of the large bowel or infected ovarian cysts. The highway mapped out by the descending colon is, however, of great importance, in that it may in some cases afford a route by means of which suppurative infections travelling from the pelvis can reach the upper part of the abdomen; and conversely, infections of the left subdiaphragmatic region may travel along it to the lower parts of the belly. In the left lumbar region internal and external paracolic grooves may be observed just as on the right side, but the gutters are often narrow, since the calibre of the colon on the left is frequently small owing to tonic contraction.

The external paracolic groove of the left side is more or less completely shut off from the left subdiaphragmatic region by the costocolic fold, which passes from the splenic flexure of the colon to the inner aspect of the diaphragm opposite the eleventh rib. This fold is formed from, and continuous with, the left margin of the great omentum. When it is ill-developed purulent collections may overtop the dam which it forms; this I have observed several times.

The left internal paracolic groove widens out in its upper part into a fossa, which is bounded to the right by the projection of the lumbar spine, to the left by the descending colon, and above by the concave aspect of the splenic flexure. The fossa is covered in by the back of the mesentery and by the great omentum, which must be turned aside to expose the space. The deepest and, in the supine position, most dependent part of this fossa lies in the splenic flexure, external to the duodeno-jejunal junction. Should pus overflow from the fossa and succeed in crossing the splenic flexure it will gain access to the left subphrenic space. The lower and narrow end of the left internal paracolic groove communicates over the pelvic ridge (sacro-iliac joint) with the cavity of the pelvis on the mesial aspect of the pelvic mesocolon, which directs any effusion into the recto-vesical or the recto-uterine pouch.

Having briefly reviewed the tracks commonly followed by intraperitoneal infections, we may consider more closely the anatomical boundaries of the recesses in which the pus finally tends to accumulate and the signs which are diagnostic of its presence at these spots. Above the mesocolic shelf there are three situations in which suppuration may occur. First, the pus may lie in the right dome of the diaphragm constituting the true right subphrenic abscess. Secondly, it may lie in the left dome, occupying part or all of the space known as the stomach chamber; this is the left subphrenic abscess, sometimes called perigastric or perisplenic from the relations it bears to the stomach and to the spleen. Thirdly, pus may lie below the right lobe of the liver in the recess known as the right renal well, right kidney pouch, or subhepatic fossa. When the purulent collection is very extensive its distribution may be widespread, so that all these localities are simultaneously involved.

The rupture of a gastric or duodenal ulcer which happens to lie near the ridge of the median watershed not infrequently causes diffuse infection, the extravasated gastric contents passing over the front of the liver into the right dome of the diaphragm, over the anterior surface of the stomach into the left dome, and along the upper surface of the right half of the mesocolon into the right renal well. They may also pass down over the front of the omentum, which shields the small intestine, direct into the pelvis. This latter mode of infection is likely to occur if the patient sits or stands up.

The right subphrenic abscess.—The signs of a large abscess in the right subphrenic region are partly abdominal and partly thoracic. The respiratory movements of the epigastric and right hypochondriac regions may be annulled and this part of the belly wall may be rigid or even bulging. Distinct tenderness is elicited by palpation and, in abscesses of some standing, a definite inflammatory ridge, due to omental and colic adhesions, may be felt at the lower limit of the collection. When the left limit of the abscess is formed by the falciform ligament of the liver a sharply defined edge, bulging a little towards the left, may be made out in the position of this fold.

The thoracic signs are: restriction of the respiratory movements of the lower part of the chest on the right side; the presence of percussion dulness in the lower axilla rising posteriorly as high as the angle of the scapula; diminution of vocal fremitus and resonance over the dull area with more or less suppression of the breath sounds, which, although faint, may have a distant bronchial character. Distinct tenderness over the lower axilla is, if present, a valuable sign, as also is bulging of the lower thoracic zone on the affected side. Friction having a respiratory rhythm may sometimes be heard over both abdomen and chest, even when the inflammation is strictly limited to the under surface of the diaphragm.

Should the abscess contain gas, which is very apt to occur since the common cause of a large subphrenic abscess is rupture of a gastric or a duodenal ulcer, the signs are modified. The imprisoned gas moves in the same way as the air bubble in a spirit level, and always tends to occupy the highest position in the abscess cavity. Thus in such an abscess with the patient supine the signs of gas are to be found in front, obliterating the liver dulness in this position, but when the patient is turned on the left side the gas slowly shifts into the right axilla and the resonance in front is replaced by dulness due to fluid. These signs are most pronounced when the falciform ligament forms a sharp left boundary to the collection; occasionally gas is found on one side of it and fluid on the other. The percussion note over imprisoned gas is tympanitic; a coin sound is easily obtained, and an amphoric or echoing quality may be imparted to neighbouring sounds produced by heart or lung.

The meaning of the signs obtained over the lung base in subphrenic abscess calls for some consideration. The presence of percussion dulness, with impairment of vocal fremitus and faint bronchial breathing, naturally suggests the occurrence of an effusion into the pleura or the presence of fluid masking pulmonary consolidation. No doubt in cases where the abscess has escaped detection, and even in some where it has been evacuated, acute pleurisy, empyema, or lung consolidation may be present, but this may not be the case even when the signs mentioned are well marked. I have no doubt that in the earlier stages of the disease at all events the lung signs are due to collapse of the lower lobe in consequence of inactivity of the diaphragm. In several cases where the pleura was explored I have seen the dark and retracted, inactive lower lobe without any signs of pleurisy. Dr. W. Pasteur in an instructive paper on Massive Collapse of the Lung has made some interesting observations on this subject. Short of exploratory puncture of the pleura it is difficult to formulate distinctive signs between massive collapse and effusion, but I am inclined to think that if dulness, bronchial breathing, and tenderness are well marked in the axilla as well as at the back the evidence is against collapse pure and simple.

The diagnosis of such abscesses as we have been considering is a matter of no great difficulty. The antecedent history is usually, although not invariably, that of an abdominal catastrophe. The presence of signs of disease in the upper part of the abdomen indicates that the abscess is subphrenic. When the gas-containing abscess is present the fact that the characteristic signs occur well below the costal margin is sufficient to exclude pneumothorax.

But a subdiaphragmatic abscess is not always of great size, and it may lie so deeply in the dome of the diaphragm that the signs of disease in the epigastric and hypochondriac regions are absent or scanty. Small collections of this nature may occur as sequels of appendicitis or in connexion with suppuration of the pelvic viscera. The ascending infection tracks up the loin until it reaches the lower edge of the liver, and then, passing between this and the parietes, infects the subphrenic space. The right renal well may be infected at the same time.

In such cases there is usually a history of acute abdominal symptoms succeeded by a period of quiescence, which in turn is succeeded by the development of fresh febrile disturbance, wasting, sweats, and other signs of purulent infection. As the abscess above the liver increases it tends to displace the diaphragm upwards and produces equivocal signs at the base of the right lung. Sometimes the liver is so depressed that its edge may be plainly felt, but should adhesions form between the liver and parietes before much pus has collected the downward displacement may be insignificant.

The lung signs, coupled with the evidence of sepsis, cause the condition to simulate empyema very closely. Here, as in the other form of abscess, the occurrence of localised bulging and œdema in the lower part of the thorax is an indication that the collection is subphrenic. The presence of a dome-shaped upper limit to the dull area has a similar significance, but unfortunately this outline may be concealed by the development of a secondary pleural effusion. When the X rays are available they may assist in ascertaining the relation of the effusion with regard to the diaphragm.

The use of the aspirating needle through the lower intercostal spaces for the detection of the pus is open to many fallacies. A serous effusion may be withdrawn from the pleura and the abscess under the diaphragm overlooked; the abscess may be found, supposed to be an empyema and treated as such, greatly to the patient's detriment; the effusion on the surface of the liver may be thick, plastic, infected lymph of which the needle gives no indication. Examination of both the pleural cavity and the subdiaphragmatic region by means of rib resection offers the best chance of success in difficult and obscure cases. But, after all, the history of the onset is of paramount importance as a guide to the condition of affairs. It should also be remembered that liver abscess itself may be a cause of subphrenic suppuration and, exceptionally, the space is infected by primary suppuration in the lung or pleura.

CASE 1. *Right-sided salpingitis and suppurating ovarian cyst; ascending infection of the right subphrenic space.*—An inflamed right ovarian cyst and inflamed right tube were removed by abdominal section from a woman aged 39 years. Pyrexia continued and offensive fluid escaped through the drainage-tube. Nine days after operation cough was noticed and examination of the chest showed dulness at the base of the right lung. The lung was supposed to be consolidated and empyema was feared. Three weeks later the patient presented all the signs of fluid low down in the right axilla and to a lesser degree posteriorly. The axilla was tender over the dull area. Exploration was undertaken. Resection of the tenth rib and examination of the pleura showed that no pus was present. An abdominal exploration below the right costal margin in front also failed to find anything, but exploration far back and high up in the right flank liberated 10 ounces of pus from between the liver and the diaphragm. The patient made an uneventful recovery.

The left subphrenic, perisplenic, or perigastric abscess.—The left subphrenic abscess, like that on the right, may be extensive or limited. When limited it tends to accumulate around the spleen, bathing its convex or diaphragmatic and also its gastric surface.

These abscesses are in the greater sac of the peritoneum. They lie in that space which has been described by Birmingham as the stomach chamber. This chamber occupies the upper left part of the general abdominal cavity. The stomach when distended completely fills the space, but when it is empty, and therefore contracted, part of the transverse colon also rises into the chamber. The roof of the cavity is formed by the under surface of the left lobe of the liver and in the rest of its extent by the left cupola of the diaphragm, which slopes downwards posteriorly and on the left to meet the floor. The latter, which is constituted by the top of the left kidney, the pancreas, and the mesocolic shelf, is separated from the posterior surface of the stomach by the intervention of the lesser sac of the peritoneum. The anterior boundary of the stomach chamber is formed by the anterior abdominal wall in the epigastric region.

The most posterior part of the general peritoneal cavity of the left subphrenic region is situate, when the body is supine, near the posterior border of the spleen, to the outer side of the upper end of the left kidney, just about the level of the eleventh intercostal space (Jenkins and Maynard Smith). It is in this direction that effusions from ruptured gastric or even duodenal ulcers are directed by the slope of the mesial watershed and the presence of the mesocolic shelf; here also effusions derived from ruptured splenic abscesses may accumulate.

The localisation of pus around the spleen is considerably assisted by the presence of a well-developed costo-colic fold extending between the splenic flexure of the colon and the diaphragm.

The left subphrenic region may also be infected from below by pus travelling along the left paracolic grooves, especially when the costo-colic fold is ill-developed. We shall also see later that a large collection in the *right* renal well may attain a sufficiently high level to enable it to invade the stomach chamber.

The signs produced by the left subphrenic abscess are so similar to those caused by the right-sided abscess in the corresponding situation that it is unnecessary to recapitulate them. Briefly, in the large abscesses the abdominal signs are prominent; in the small, perisplenic abscesses the lung signs alone may be present. Gas-containing abscesses are common and depend upon perforations of the stomach or duodenum. The stomach chamber being a large space it is possible for abscesses to be limited to various parts of it. As already mentioned, the perisplenic abscess is the common localised collection, but sometimes the pus lies between the stomach and the left lobe of the liver and sometimes above the latter. An abscess between stomach and liver may coexist with an abscess in the right renal well.

The presence of hollow viscera beneath the left phrenic dome renders the use of the exploring needle in this region inadmissible.

The abscess in the right kidney well or subhepatic fossa.—The right kidney well, which when the body is recumbent is the most dependent part of the right half of the general peritoneal cavity, is, as we have already seen, in such a position that it receives effusions which have travelled down the right half of the mesocolic shelf or from the pelvic ridge along the paracolic grooves.

The boundaries of this pouch, described as they appear with the body erect, are as follows. *Above* an extension between the renal surface of the liver and the anterior surface of the kidney reaches as high as the inferior aspects of the right half of the coronary and right lateral ligaments of the liver. *Below* the hepatic flexure of the colon and its attachment to the front of the kidney and duodenum. *Internally* a forward slope formed by the anterior surface of the right kidney and the second part of the duodenum; close to this lies the foramen of Winslow. *Externally* the structures forming the lateral abdominal wall. *Anteriorly* the downward projection of the right lobe of the liver. The lowest part of the well is found to lie (with the body supine) just to the outer side of the superior pole of the right kidney and just below the right lateral ligament of the liver, at the level of the eleventh intercostal space.

The right kidney well may be capable of holding a pint of fluid before it overflows into other parts of the peritoneal cavity. When it does overflow it overflows in certain definite directions. The easiest channel when the pouch has been filled from above is along the right external paracolic groove towards the pelvis. When the colon is distended the external groove is deep and the bowel acts as an internal embankment, but should the bowel happen to be contracted fluid may escape over it and pass down the internal groove. When the well has been infected from below, as in appendicitis, the overflow tends to travel up between the right lateral lobe of the liver and the parietes, and so give rise to an abscess in the right dome of the diaphragm.

There is a third direction in which extension may occur and this is up the right mesocolic slope over the mesial abdominal watershed into the stomach chamber. It is curious how seldom the pus manages to pass through the foramen of Winslow into the lesser sac. The explanation is that the boundaries of this foramen lie in close contact with each other. There is a not uncommon anatomical variation which when present should effectually shut off the approach to the stomach chamber. The variation consists in a shifting forwards of the free edge of the lesser omentum in such wise that a fold of peritoneum extends from the whole length of the gall-bladder above on to the duodenum and transverse colon below.

CASE 2. *Extension of infection upwards from the appendix to the right renal well, and thence to the left pleural sac.*—A youth, aged 18 years, with a history of three weeks' pain in the left side and occasional vomiting, came under observation in a greatly emaciated and septic condition, with dry tongue, rapid, feeble pulse, and dyspnœa. The left side of the chest was distended and motionless; the left thoracic wall was œdematous. The percussion note was dull, vocal fremitus and resonance were much diminished, faint tubular breathing was audible, and also some crepitation. The heart's dulness was displaced to the right and friction with a cardiac rhythm was heard. The abdomen was rigid and tender; over the left half was inflammatory œdema. Four pints of offensive pus were aspirated from the left pleura and a rib resected in the axillary region for free drainage. Death occurred 48 hours later. There was a foul appendix abscess in the right flank. A track of infection led up from this to the right kidney well, where a collection of pus had accumulated; this overflowed under the liver to the left subphrenic region behind the stomach (and therefore must have been in the lesser sac), and finally perforating the diaphragm caused the left empyema. The pericardium was not inflamed. The œdema of the left side of the abdomen and chest was due to cellulitis of the abdominal wall. (I am indebted to Dr. S. J. Sharkey for permission to quote this case.)

The clinical evidence of suppuration in the right kidney well varies with the conditions present. When the purulent collection is accompanied, as it often is, by suppuration in the external paracolic groove of the right side, and also in the right dome of the diaphragm, the signs resemble those already described when speaking of right subphrenic abscess, and it may be possible to determine that the tenderness and rigidity extend lower in the abdomen and that the affected area broadens out towards the right flank, which it extensively involves. But, just as with the true subphrenic collections, there is an insidious and deeply seated form of subhepatic suppuration which is extremely likely to be overlooked. The clinical signs of this form of infection are, in addition to the constitutional symptoms of emaciation, profuse sweating and great prostration, deep-seated tenderness below the right lobe of the liver, the presence on gentle bimanual palpation of the right renal region of an ill-defined swelling which does not move on respiration, and the upward extension of liver dulness in the axilla to the seventh or even the sixth rib instead of to the eighth. This form of abscess, like the deep-seated right subphrenic abscess, is usually caused by an ascending paracolic infection which originates in appendicitis or in the pelvis. Here, again, the history of the original attack is of great importance in diagnosis.

CASE 3. *Right-sided salpingitis and inflamed multilocular ovarian cyst; abscess in right kidney well undetected; death.*—An inflamed right tube and infected right-sided multilocular ovarian cyst were removed from a young woman. Fever continued for three weeks and the patient emaciated. Three weeks later an inflammatory mass could be felt in the upper part of the abdomen on the *left* side. The percussion note was impaired at the base of the left lung and the breath sounds were faintly bronchial. Exploration was advised. The abdomen was first opened and the mass found to consist of dense adhesions. The left pleura was explored and found to be free from infection. Matters did not improve and the patient ultimately died. At the post-mortem examination ten ounces of very foul pus were found in the right renal well and paracolic groove, quite shut off from the general peritoneal cavity.

CASE 4. *Appendicitis; localised abscess in the right kidney well; supposed typhoid fever; evacuation; recovery.*—A man, aged 18 years, came into hospital as a supposed case of typhoid fever. When the history was investigated it was found that the onset was sudden and accompanied by some vomiting. There had also been abdominal pain, at first about the navel and later in the right iliac fossa. His tongue was dry and coated, the pulse of normal rate, the temperature 103° F. The abdomen was slightly distended and the note hyper-resonant. The motions were like pea-soup. No typhoid spots were found, the spleen was not enlarged, and the serum reaction for typhoid was twice negative. The temperature at first fell and the abdominal tenderness and distension abated. The temperature then gradually mounted again; some tenderness was found below the right costal margin and in the right lumbar region; the upper level of liver dulness in the axilla was two ribs higher than it should be. Aspiration of the chest in the axilla was negative, but incision of the right loin far back evacuated pus from the right kidney well. The liver dulness gradually descended and an uneventful recovery ensued.

To enter into a detailed description of the characteristics and limits of abscesses in the lesser sac of the peritoneum and those in the pelvis would require more time than is available for this address.

The treatment of intraperitoneal abscess is essentially surgical. When there is reason to suspect one of these collections it should be drained. The process of localisation takes from seven to ten days or more. The dangers of secondary diffuse peritoneal infection, of infection of the pleural sac and lung, and of portal pyæmia are always present.

The fallacies which attend the use of the aspirator needle for the diagnosis of subphrenic collections I have already mentioned. The needle, if used, should only be introduced after a close consideration of the history and careful weighing of the clinical signs. It may give accurate information as to the nature of the pleural exudate and quite unreliable indications as to the abdominal condition. It should, needless to say, never be used for puncture below the ribs, nor yet below the diaphragm on the left side. The presence of the liver on the right is in some measure a protection. In a doubtful case where the needle has failed, as it often does, or the patient's progress and symptoms point to suppuration, the boldest course, of exploring by surgical incision, is the safest and most successful in the long run. The most suitable incision varies with the position, size, and apparent cause of the collection.

An extensive right subphrenic abscess, caused by recent rupture of a gastric or duodenal ulcer, is usually explored first from the front on account of the causal lesion. Should the collection be localised posterior transpleural drainage is usually adopted. The ascending subphrenic abscess due to appendicitis, often associated with a collection in the right renal well, may be treated by an incision high up and far back in the flank, but should the subphrenic collection be of any magnitude it is unsafe to rely on the flank incision alone, and better to open the subphrenic space higher up by the transpleural route, steps being taken to shut off the pleural cavity. In one intractable case, complicated by empyema, the condition, which appeared hopeless, was successfully treated by Mr. C. S. Wallace, who excised the ninth rib from the posterior axillary line forwards to the costal margin, a procedure which afforded excellent drainage of the pleura and the whole subdiaphragmatic space.

The left subphrenic abscess is treated on the same lines as the right. The anterior incision may be necessary for the exploration of a perforated stomach, but for a localised collection of pus far back around the spleen the transpleural route should be taken. The locality of the abscess is best exposed by resection of rib, not higher than the seventh.

A point worth mentioning is the position in which patients suffering from appendicitis should be nursed. There is much to be said for the Fowler position, the back being elevated by pillows and the nates supported by a bolster placed transversely beneath the thighs and tied to the bed-frame. This position has the merit of preventing ascending infection, but the state of the pelvis should not be lost sight of, since it favours drainage into this cavity.

Cases of intraperitoneal inflammation well repay careful watching and continued efforts to limit the infection. The first operative procedures are not always successful, but this must not discourage further attempts. Success may only be attained by persistent efforts to reach and drain the various infected localities.

Devonshire-place, W.

THE APOTHECARIES' HALL OF IRELAND.—The quarterly examinations will take place on the following dates:—First professional, Monday, April 18th; second professional, Thursday, April 21st; third professional, Monday, April 25th; and final professional, Wednesday, April 27th.

THE TREATMENT OF PSORIASIS.[1]

BY E. G. GRAHAM LITTLE, B.A. CAPE UNIV., M.D. LOND., F.R.C.P. LOND.,

PHYSICIAN, WITH CHARGE OF THE SKIN DEPARTMENT, TO ST. MARY'S HOSPITAL AND TO THE EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN; LECTURER ON DERMATOLOGY, ST. MARY'S HOSPITAL MEDICAL SCHOOL; MEMBER OF THE SENATE OF THE UNIVERSITY OF LONDON.

PSORIASIS is one of the most ancient of skin diseases. Naaman the Syrian, commonly called Naaman the leper, probably in reality suffered from this, and the ages have revealed no remedy comparable in swiftness and certainty with the immersion in the River Jordan, which we are told cured him. "Lepra" was the name for certain clinical types of psoriasis until quite recently; Bateman's Atlas, published in 1840, has a plate (No. VII.) of "Lepra vulgaris, the common leprosy," which is certainly psoriasis as we know it. The "leprosy" of the Middle Ages must have been largely composed of psoriasis, and it is sad to reflect how much avoidable misery the victims of this disease must have endured from that unhappy confusion. The sum of suffering for which psoriasis is responsible still remains very great, for it is in our climate, next to eczema, the commonest of skin diseases.

The frequency of its occurrence in a general dermatological clinique may be estimated from the following figures. Of 11,500 cases of general skin diseases recorded in my department at St. Mary's Hospital, 465 were instances of psoriasis —i.e., almost exactly 4 per cent. Dr. Radcliffe Crocker's statistics quoted in his text-book (718 in 10,000 cases) give a much higher percentage; the difference in the two sets of figures may perhaps be accounted for by the fact that in my records care is taken to exclude the entry of the same individual case more than once, recurrent attacks not being recorded.

Psoriasis was included in Dr. Crocker's six diseases of the skin with which every practitioner should be quite familiar. A detailed exposition of some forms of treatment may, therefore, be acceptable to you, for its management requires the utmost patience and resourcefulness on the part of both the patient and the medical practitioner. Inasmuch as its causation remains still completely obscure, it is impossible to devise a rational treatment which would aim at removing the cause, and we are obliged to be satisfied with the teachings of experience as to what remedies are most successful in removing the eruption at any particular time. The pendulum of practice has swung to and fro between the claims of internal and external medication and a combination of both. It may be said that the present methods of treatment are more directed to external than to internal therapeutic measures, the long abuse of arsenic in this disease having produced a reaction, which has perhaps gone beyond its just limit, against all internal treatment.

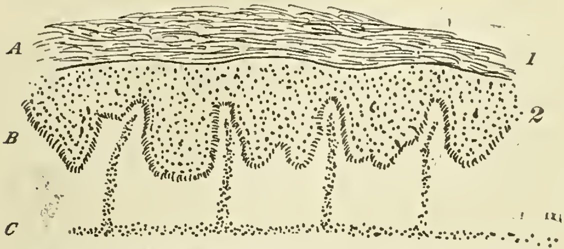
Diagnosis.

A few observations on diagnosis may fitly precede the consideration of therapeutics, which must rely upon diagnosis. Psoriasis is usually one of the least difficult of diseases of the skin to recognise, since it follow such a characteristic and typical distribution and course. Cases, however, in which these are anomalous are not infrequent, and attention to certain points will be of essential aid to the practitioner in forming his conclusions.

Character of the initial lesion.—This is always a papule in its earliest stages, of conical shape, and of the same colour as the surrounding skin, from which it is, however, quite appreciably raised; later the papule becomes pink and enlarges, but retains an outline which is circular, not polygonal as in lichen planus. It is also pinker than the papule of lichen planus, in which a blue tint is added to the red, and than the papule of syphilis, in which a brown shade mingles with the red. What has been described as the "bleeding test" may be applied to the papule at this stage; it consists in gently removing the uppermost scale either with the fingernail or, better, with a small scalpel; a pink, shiny surface comes into view, and if further removal of epithelium is effected by scratching or otherwise, a number of minute bleeding points are seen. The explanation of this phenomenon probably lies in the histology of psoriasis; the superficial blood-vessels are dilated, and the increased vascularity accounts for the pinkness of the surface. In the accompanying diagram the position of the first and second hypothetical scratches is indicated by the interrupted horizontal line; the second, by taking off the tops of the papillæ exposes the bleeding blood-vessels from which blood exudes more freely by reason of their dilatation. The papule rapidly enlarges in some cases to form a scaly patch. The scaliness may become enormously exaggerated, as in the so-called psoriasis rupioides, and is always in excess of the scaliness of any other skin disease. The scales are white, laminated or stratified, and easily detached from the skin as silvery flakes.

---

[1] Paper founded on a lecture delivered at the Medical Graduates' College and Polyclinic.



Papule of psoriasis (semi-diagrammatic). A, Zone of adherent scales (Parakeratosis). B, Zone of hypertrophied epidermic downgrowth (Acanthosis). C, Superficial plexus of vessels with papillary branches. 1, Position of initial scratch, scales removed. 2, Position of later scratch, papillæ with dilated vessels exposed.

The *distribution* is, in adults, so regular as to afford material aid to diagnosis. The extensor surfaces of the limbs, and especially the skin covering the joints, together with the scalp, may be said to be the typical sites for the eruption to first appear. In children, however, the limbs are quite often free, while the trunk is chiefly affected. The hands and face are generally spared, and the mucous membranes are never in any way attacked. The nails are sometimes implicated by the disease; they become thickened, the free edges brittle, and the enamel of the surface dull; often minute depressions, like the markings on a thimble, appear on the nail, and are very characteristic. The hair is seldom in any way affected; extensive psoriasis of the scalp may coexist with a good head of hair; occasionally, if the scalp is left untreated for long periods, the hair becomes thinned and falls off. The history of family inheritance of the disease and the chronicity and seasonal recurrence of the eruption are features so frequent in psoriasis as to afford when present strong suggestion of this diagnosis.

Treatment.

In considering in detail the therapeutic measures to be adopted in any individual case much will depend on the question whether the patient can remain in bed or is obliged to go about the ordinary avocations of life during his treatment. I propose to deal with treatment therefore under two heads: (1) what may be called ambulatory psoriasis, and (2) "lectual," which is good Latin for "confined to bed."

Ambulatory psoriasis.—Here the patient has to confine his treatment to his sleeping hours and must remain fairly presentable in his person in order to allow of his continuing his daily routine of work. It is important to keep the latter requirement in view and to avoid the risk of disfiguring the exposed parts of the body or to know means of concealing the disfigurement when it is inevitable. The face and hands, and in women who wear evening dress the shoulders and upper part of the chest, will thus have to be specially considered. Local treatment is often difficult under these circumstances, and in such cases internal medication has its most legitimate sphere. But with some ingenuity and care local measures, even including ointments which discolour the skin, may be used even in these positions.

Of all the local applications employed in psoriasis none can compare in efficiency with chrysarobin, which, in spite of all its drawbacks, I never willingly withhold. The methods of applying this are very numerous. Chrysarobin is soluble in chloroform, ether, and benzene, and a saturated solution in the first of these with guttapercha is known as traumaticin. The guttapercha addition forms an adhesive paint which may be used for small isolated patches, especially on the face, but it is the least efficacious, if the most agreeable, method of using this drug. A far better way is to add chrysarobin powder to a fairly adhesive ointment base, such as the following: kaolin levigati ʒii., amyli ʒiv., lanolin. ʒiv., paraffin. fluid. alb. ʒii.; to this is added chrysarobin xv.–xxx. gr. The ointment thus resulting may be applied to the face and the forehead where the hair joins the skin—a very frequent position for obstinate patches of the disease. It should be used at night and removed in the morning either with vaseline or with benzene; the latter is especially useful on hairy parts, and all trace of the ointment should be removed before washing the parts with soap, which in combination with chrysarobin produces purple discolouration of the hair.

The patient must be warned of the danger of conjunctivitis from contact of the conjunctiva with chrysarobin. On the hands the most convenient covering is a pair of cotton gloves, such as Tommy Atkins wears, which may be used again and again. The more the ointment soaks into the glove the more efficacious it becomes. On the covered parts of the body the adhesive ointment mentioned can be left *in situ*, and the proportion of chrysarobin increased to half a drachm to the ounce; it will not come off with mere rubbing, so that the bath need not be prohibited.

For small patches, especially on the face and for resistant patches elsewhere, a very convenient form of application is by the ointment stick—the "Baculum chrysarobini" of St. Mary's Hospital Pharmacopœia: Chrysarobin, 3; white wax, 2; lanolin, 5. These sticks may be made of any required calibre according to the dimensions of the patch to be treated; a convenient thickness is that of a lead pencil. The stick is rubbed on the patch for a few seconds, and the smear thus produced is left for as long as may be possible. The cleanliness of the process and the ease with which the stick may be carried about if wrapped in tin-foil, make this a very suitable form for patients while travelling or on the move.

The ointment used for parts which have to be exposed should always be a weak one containing not more than 15 grains of chrysarobin to the ounce. When inconvenient redness results, as it often does even with these weak formulæ, it may be disguised quite effectively by painting over the reddened area, either with the finger or a brush, a very thin film of Pellanthum, either plain or containing 3 per cent. ichthyol, or a combination of the plain and ichthyolated preparation may be required; when mixed, as one mixes colours on a palette, in suitable proportions, the tint of the surrounding skin may often be very closely matched and the redness quite obliterated. The film may be at once removed by wetting with water, and it is quite harmless to the skin. Before pressing out the contents of the Pellanthum tube it is well to ensure mixture within the tube by gently stirring with a needle; the material exuded should be of a uniform creamy consistence. When the film is too thick it may be thinned with a little water.

Where very obstinate small patches (but not on exposed parts) resist the treatment described, a good method of clearing them (suggested by Dr. A. Whitfield) is to paint the surface with saturated solution of chrysarobin in chloroform, allow the film to dry, and apply over it and a little beyond the margin of the deposit left after evaporation of the chloroform some Leucoplast plaster which is left in position until it comes off, in three or four days, when the process may be renewed.

The disadvantages of the treatment by chrysarobin are not to be ignored, but I am convinced by much experience that most patients are willing to put up with its drawbacks for the sake of the greater rapidity and certainty of its action. It is true that the personal and bed linen become disagreeably stained and that the aspect of the ointment is unæsthetic, but these are minor drawbacks. A more serious one is the risk of producing conjunctivitis when the drug is used in the neighbourhood of the face; this may generally be completely avoided with care, the essential precaution to be taken being to keep the ointment from being conveyed to the eye either by the hands or by continuity with the parts of the face so treated. Where the forehead is affected it is well to apply chrysarobin under a bandage which will keep the ointment in the position desired, for it must be remembered that the movements of the head on the pillow may spread the ointment on the pillow-case, which may then come in contact with the eye. Or more comfortably a face-mask of lint may be used, with apertures made for the nose, mouth, and eyes, and kept in position by tapes going round the head. In spite of all precautions conjunctivitis sometimes will occur and the drug must at once be omitted and the eye treated with astringent lotion—e.g., acid. borici gr. vi. ; sod. sulpho-carbolati gr. x. ; aq. rosæ ad ℥ 1.

Psoriasis of the scalp.—Since chrysarobin stains the hair a purple colour it is seldom possible to use it on the scalp, and one has to be satisfied as a rule with less efficacious applications which do not stain hair or skin. Inasmuch as the hair of the head tends to increase the adhesion of the scales, it is particularly important to remove the scales before using any treatment. This may be done with soft soap, of which a pleasant and cleanly method of use is the following. A lotion consisting of equal parts of sp. vin. rectif. and sapo mollis with 15 minims to the ounce of liq. carb. deterg. is rubbed into the scalp with a small sponge, left to soak for half an hour, and washed away with warm water. This may with advantage be applied every night for a week preceding the application of any ointment to the scalp. When the scales have thus been in some measure removed the following ointment may be used nightly, the head being washed about once a week with the soap lotion mentioned: Sulphur. gr. xv. ; camphoræ gr. xv. ; liq. picis carb. ♏ xxx. ; acid. carbol. gr. xv. ; resorcin gr. xxx. ; adip. benz., paraff. moll. aa. ℥ ss. This treatment is quite pleasant when the hair can be kept short, but becomes difficult in women, who dislike the greasy effect on their hair. For such cases an ointment which can be used at night but readily washed out in the day is better. The following formula suggested by Brocq I have found very useful: Ol. cadin. pur. 50 grammes ; ext. quillaiæ 5 c.c. ; glycerini amyli 45 grammes ; essentiæ caryophylli 2 c.c. Mr. Andrews, the senior dispenser at St. Mary's Hospital, has kindly furnished me with the following notes as to the preparation of this formula: "The extract of quillaia is made by taking 100 parts of quillaia bark ; the bark is powdered and is damped with alcohol (49 per cent.) and packed in the percolator. More spirit is poured in till it begins to drip from the bottom. Percolation is then stopped and the mixture is left to stand for 24 hours and then percolated. The first four-fifths of percolate is collected and put aside. Go on percolating with more spirit (49 per cent.) until the drug is exhausted. Evaporate this weak percolate to a soft extract and dissolve this latter in the reserved four-fifths and make up to 100 with more 49 per cent. alcohol. 5 cubic centimetres of this extract are sufficient to emulsify the oleum cadini. The method of mixing it is as follows. The extractum quillaiæ prepared as above is added to the oleum cadini and shaken ; the emulsion thus resulting is added a little at a time to the glycerinum amyli in a mortar and rubbed until thoroughly mixed, and, lastly, the oil of cloves is added." This forms a not very unpleasantly smelling ointment which can be rubbed into the scalp and readily removed by washing. It does not stain the hair or the linen permanently. It should be rubbed into the scalp every night and washed out in the morning. Women, however, may use it less frequently as their hair is difficult to dry.

Another formula with oil of cade, somewhat less difficult and cheaper to make, is the following. It is, however, much more evil-smelling than the formula just cited, but is equally efficacious and easily removed by washing. Lard, 50 grammes ; potash, 17·50 grammes ; aq. dest., 150 grammes. Dissolve potash in water, add to lard previously put in a weighed water bath ; mix thoroughly ; add 10 cubic centimetres of absolute alcohol. Heat until a soap is formed ; add to this 20 grammes of lanolin ; concentrate the whole until the weight is 150 grammes ; stir till cold and keep in an air-tight jar. Of this base take 20 gr. ; add resorcin, 1 gr. ; sulph. precip., 1 gr. ; and ol. cadini, 5 gr. Mix well.

The disagreeable odour of these remedies may in some cases render their use impossible, and one is obliged to resort to less offensive measures. Of these, mercurial ointments are probably the best ; an ointment of calomel 1 part to 3 parts lard ; or the ammoniated mercurial ointment with gr. xv.–xxx. of resorcin, or acid. salicylic. may be tried. The possibility of salivation with the use of these strongly mercurial preparations must be carefully borne in mind and their administration stopped on the appearance of any symptoms of mercurialisation.

Where chrysarobin cannot be tolerated.—Occasionally in very acute and itchy cases the application of chrysarobin, even in minimal doses, is intolerable ; but it is surprising how seldom it is really necessary on this account to withhold it. Certain patients undoubtedly have an idiosyncrasy of intolerance, and in such cases probably the next best substitute is oil of cade, which may be given in varying degrees of strength, from purity to a proportion of 1 of oil of cade to 8 of olive oil. Oil of cade may also be added to unguentum acidici salicylici in the proportion of one or two drachms to the ounce, and this is a useful formula for very scaly cases. In the more erythematous and itchy cases the oil of cade may be usefully combined with glycerine of starch in the proportion of a quarter to a half of oil of cade, with a few drops of essence of peppermint (about 1 per cent.). In the same manner as was mentioned in speaking of the chrysarobin treatment, the identical dressings should be kept in use throughout ; the more they are soaked the better they act.

Oil of cade may also be used in the form of *baths*, and these are especially useful in acute cases. Balzer's formula has been much praised and is an excellent method. Add the yolk of an egg to 50 grammes of oil of cade in a mortar, a sufficient quantity of extract of quillaia to make an emulsion, and 250 grammes of distilled water. This mixture is then added to the bath and the patient is immersed in the water for half an hour.

Another method of using tar baths which I have found useful in acute itchy psoriasis is thus applied. The patient is painted over with the following lotion :—Picis carbonis, 3 ; sp. vin. meth., 2 ; ether, 1 (balneum picis, St. M. H.). This is allowed to dry on the body, and the patient is then immersed in a warm bath for half an hour, after which he is carefully dried with warm towels. The same formula may be used with the following addition : Lotion for baln. picis, ℥ vi. ; bals. Peru, ʒ vi. ; coumarin, gr. xxxvi. ; musk, gr. xii. This is painted on the psoriasis patches and left on at night. Salicylic acid (gr. xv.–xx. to ℥ i.) increases its efficiency. The strong odour, which, however, is not altogether disagreeable, makes this method not always easily applicable.

X rays.—Very chronic resistant patches of the disease may be favourably influenced by exposure to X rays for short periods. My experience with this treatment is small and not altogether encouraging, the disease having returned in the site treated very soon after the cessation of treatment.

Other methods of treatment :—

Light baths.—Hyde of Chicago promulgated recently an interesting theory that psoriasis was due to the deprivation of the skin of exposure to sunlight, instancing in favour of this view the comparative rarity of the appearance of lesions on the face and hands, the absence of psoriasis in black races who expose their bodies very largely to the sun, and the improvement of actually diseased persons on treatment with prolonged sun baths. In the great Republic it would appear that tracts of country still remain where man can fish and shoot and live *in naturalibus*, and Hyde reports good results with this resumption of a fig-leaf costume—unhappily, only possible in Arcadian climes. In the only way in which we can imitate this treatment, the subjection of the body to electric light baths, it is probable that much of the effect is due to the heat as well as the light. Turkish baths or Russian baths (dry heat and vapour) are also especially useful in chronic cases where the patient is obliged to lead a sedentary life and rarely perspires freely and in cases where itching is a troublesome symptom. It is probable that one reason why psoriasis usually does better in warm climates than in cold is because sweating is more free, and it should be the object of a patient with chronic psoriasis to sweat all over at least once a week, either through exercise, which is naturally the preferable way, or by means of a hot-air or vapour bath. The home cabinets, of which there are many kinds on the market, offer a quite convenient means of taking these baths and form a useful adjuvant of the ambulatory chrysarobin treatment detailed above.

Spa treatment.—Psoriatics are usually sent to spas where arsenical waters are obtainable, and the treatment consists essentially in the internal action of arsenic. But prolonged immersion in hot water alone seems to be beneficial in certain types of the disease. At Leuk, for example, the psoriatic patients are immersed for several hours a day in the natural warm spring water of this spa. I have noted good results from the treatment by the Aix-les-Bains douche-massage routine, and Dr. Stanley Rendall has assured me that he is convinced of its efficacy in this disease. Probably the sedative effect of the routine of these watering-places has a beneficial influence on the general health, and thus indirectly on the eruption. The effect of sea-bathing is curiously variable. On the whole, in my opinion the balance swings rather in the direction of harm than good, and the salt water unquestionably increases the irritation of the itchy types. But certain individual cases have apparently benefited by sea-bathing, which is not uncommonly actually prescribed.

Lectual psoriasis.—In all instances where the disease is very acute and extensive, in many where this is not the case, but the patient is desirous of being speedily cleared of his eruption, and whenever it is attempted to produce a final cure, confinement to bed is a most essential part of the treatment. Lately Dr. Norman Walker has suggested the application of chrysarobin all over the body, not merely on the diseased surfaces, in patients who can be kept entirely in bed. I have tried this method in several cases and am satisfied of its value. The point aimed at is the desquamation under chrysarobin of the whole surface and the treatment is kept up until this result is achieved. The patient is wrapped from the neck to the toes in lint thickly smeared with an ointment consisting of half a drachm of chrysarobin to the ounce of vaseline and the lint is kept in position by bandaging. Fresh ointment is applied to the same lint every day until the skin begins to flake off everywhere, the body becoming deeply stained. The psoriasis patches usually resist desquamation longer, and the proportion of chrysarobin may have to be increased on these areas. To cure the actual disease it is necessary that desquamation should occur. When this has happened, and not before, the patient receives a hot bath, fresh clothes are provided, and it is as well to sterilise all the clothes worn previously to the treatment. In using this method the face and scalp cannot generally be included, and these may be treated as mentioned under the heading of ambulatory psoriasis. But the forehead may with careful bandaging be treated by the continuous method, and the scalp in those persons who will sacrifice their hair may with advantage be likewise soaked in the ointment. The average time of detention in bed is four weeks, and the freedom from recurrences may be so prolonged as to amount to actual cure.

I am of opinion that in a first attack, and especially in young patients, it is advisable to attempt this radical method and give the patient the best chance of checking the disease. It is a matter of common observation that the more entirely the last vestige of psoriasis is removed from the body the more protracted are the intervals of freedom between the recurrences: an absolutely complete removal of eruption would probably be attended by an absolutely complete cure. No untoward results have as yet been noted in the course of this treatment. The main precaution to be taken is to avoid contact of the eyes with the ointment, an accident which may easily happen, especially in young people at night. Masks made of lint, with openings for eyes, nose, and mouth, and kept in position with tapes tied round the head, will generally prevent this accident. Similarly, the genital organs, especially of female children, should be protected from contact with the chrysarobin dressings.

Internal treatment in psoriasis.—In no disease has the abuse of arsenic, so commonly and so unhappily regarded as a panacea for all skin diseases, been so general as in psoriasis, and there is undoubtedly a reaction now against arsenic as well as other internal remedies. There is no doubt that in certain cases, in which this result cannot be, however, predicted, it acts with great effect, apparently being alone responsible for the clearance of an eruption. This is especially the case in psoriasis of children and in first attacks. But it cannot be regarded in any sense as a specific for the disease, as mercury, for example, is in syphilis, and the use of arsenic does not prevent the appearance and the spread of an eruption even while the drug is taken in full doses. The danger of giving a patient with an essentially chronic disease like psoriasis a medicine containing arsenic—for the taking of the medicine may become as chronic as the disease—must be borne well in mind. My old teacher, the late Dr. John Cavafy, never felt happy in giving arsenic to out-patients, and there is much to be said for his caution.

More reliance is usually to be placed on external than internal remedies; of the internal remedies arsenic, in spite of its uncertain effect, remains the least uncertain. The drug should be pushed rapidly and stopped if the effect is not produced; from 5 to 15 minims may be given thrice daily, preferably in liquid form, well diluted, and immediately after meals so as to avoid the irritation which may result from its introduction into an empty stomach. Fowler's solution is probably still the best method of administering it. Certain organic compounds of arsenic, such as the cacodylates, and later the arsenates, have had a certain vogue, which is apparently not likely to be permanent, the effects being singularly uncertain and irregular. In the present state of our knowledge the substitution of atoxyl, the most widely used of these preparations, for the older forms is not encouraged by some very serious results which have been recorded of its action. It is difficult to say how far the natural springs containing arsenic in solution owe their effects to the arsenic or to other bodies, including radio-active elements which are found in association. The amount of arsenic as estimated by careful analyses in most of those waters is extremely small and their effect is probably a very mixed one.

Besides arsenic, salicin, mainly through Dr. Radcliffe Crocker's advocacy, has been much used, and with apparently very irregular results. I have personally not been persuaded of its efficacy, and I have given it an extensive trial in doses of 20 grains three times a day, prolonged for many months. Copaiba resin, given in cachets, is very strongly praised by my friend, Mr. Arthur Shillitoe, as efficacious in clearing an eruption. Potassium iodide in very large doses—from 60 to 600 grains per day—has been recommended, chiefly by Scandinavian writers. Thyroid extract in a very few cases, the selection of which seems capricious, acts well, but it is too dangerous a drug to give in large doses as a routine treatment in a chronic disease.

Diet and general management.—The psoriatic is commonly a fresh-coloured robust person. Sir George Humphry indeed described psoriasis as the "hall-mark of health." Many subjects of this disease are, however, nervous, highly-strung persons, and indeed a large body of opinion favours a "neurotic" theory of causation. It is notable that outbreaks of eruption will often coincide with some mental stress, and psoriasis is a common disease in asylums for the insane. The mischievous effect of stimulants in promoting an eruption has often been noted. Long hours of sleep and "the simple life" in general, with plain diet, are the best regimen. It has been thought that vegetarianism is beneficial and Bulkely in particular urges the importance of this combined with a large intake of milk. Opinion, however, is very divided upon the question whether diet really exerts any influence at all, and I am personally no advocate of any special feeding in psoriasis; restriction of alcohol is probably more important than restriction of meat, which is so commonly insisted upon. It ought to be borne in mind by the practitioner that it is nearly always possible to disperse an eruption even if he cannot cure the disease, and the patient must often be helped and encouraged to persevere with treatment by the confident assurance that relief at any rate is within his reach and that the interval of freedom from recurrences will be lengthy in proportion to the completeness of the dispersal of the actual eruption.

Wimpole-street, W.

THE MANCHESTER CONSUMPTION HOSPITAL.—It is now 35 years since the Manchester Hospital for Consumption and Diseases of the Throat and Chest was founded. It began in a small way, and when Sir William Crossley became chairman 30 years ago there were six beds at Bowdon. Now there are 140 at the Delamere Sanatorium, for which Manchester is indebted to Sir William Crossley, and at Bowdon. Still, however, the call is for more beds, as patients are kept waiting so long that the time for successful treatment is sometimes passed before they can be admitted. It is proposed to add 12 beds at Delamere, where there is room for more if the funds could be found. And the cost of a bed, which in the early days of the institution was £1000, is now only £100 or even less. Here, then, is another opportunity for the rich and charitable. The Lord Mayor, Mr. C. Behrens, who has been for many years the honorary secretary of the hospital, was in the chair at the annual meeting on March 14th, and made an earnest appeal for more funds.

ON A CASE OF HEART-BLOCK.[1]

BY J. G. EMANUEL, B.SC., M.D., B.S. LOND., M.R.C.P. LOND.,
HONORARY PHYSICIAN, QUEEN'S HOSPITAL, BIRMINGHAM.

THE case I wish to bring under notice is that of a tailor, 56 years of age, a small man, 5 feet 1¾ inches in height, and weighing 7 stones 1 pound. He has rather a waxy complexion, but there is generally a slight flush on each cheek, that contrasts with what would otherwise be a pale face. He appears to be a feeble little man, lacking physical power and force. On the other hand, he attends regularly to his business, and this necessitates his standing about all day. He has been married 26 years and has had a large family. Seven are living, six died at birth, and there was one miscarriage. His family history is good; the father is living, aged 81 years, and the mother died when 74 years old; one sister died from phthisis, aged 37 years; and four brothers and three sisters are living.

The patient had rheumatic fever when he was 20 years of age, evidently a severe attack, for he was in bed for six weeks. He states that he got up too soon, and at any rate he had to return to bed for a further period of six weeks with an attack of pleurisy. Ever since this time his left side has been weak and he feels pain in the side on slight exertion. For over 20 years he has been subject to giddy feelings and to some sensations which he calls "turns," lasting a second or so and coming on at any time, even while in bed. During these last he says "he loses himself for a second," and he sometimes flushes—he never becomes pale. About Christmas in 1908 he suffered from very bad "giddy turns" and was compelled to keep in bed. During these attacks he felt that he was sinking away, and on one occasion he thought he was dying. On one day he had as many as a dozen in an hour and a half. He describes himself as sometimes having pains over the præcordium which catch his breath, but only last a second. These pains he distinguishes from other pains in the chest which go through to the back in between the shoulders, and which he himself puts down to indigestion. Whether the præcordial pains are anginal or not, it is difficult to say; they never shoot into the neck or down the arm. For many years he has been short of breath on exertion.

Twelve months ago the patient was first brought to me by Mr. L. Kirkby Thomas, as for some weeks he had been losing strength and energy and the "giddy turns" had been exceptionally severe and harassing. From this time until Easter he had to give up his work and he spent most of the time in bed. Before this he had never had to give up his occupation, although he had often been obliged to stay at home for a day or two. He has now been very comfortable for six months and able to go to business every day. His summer holiday of four weeks was spent at St. Anne's, when he walked every day a number of miles in short and easy stages. His digestion, however, is not good and he has to be careful in his diet.

On examination the cardio-vascular system alone presents any abnormality. In point of size the heart is normal, being if anything rather small. There is no absolute cardiac dulness to be detected in consequence of the emphysematous condition of the lungs, and the cardiac impulse is neither visible nor palpable; this may possibly be due to the same cause. On auscultation the heart sounds are most clearly audible at the apex, but at all the areas they are very weak. The first sound is accompanied by a short blowing systolic murmur, the second being free from murmur. On feeling the pulse one is struck by its extreme slowness, while the force and volume are considerable. On five different occasions during the past 12 months I have found the rate to vary within very narrow limits, being 42, 31, 36, 40, and 42 per minute. The rhythm is not quite regular, but the force of each beat is very constant. The heart sounds are synchronous with the pulse, and there are no sounds audible in the long intervals between the beats. The blood pressure is high. On Nov. 4th, as measured by the manometer, it was equal to 180 millimetres of mercury. The radial arteries are thickened and the brachials pulsating and tortuous. There are no signs of cyanosis or of œdema of the extremities. The urine is free from albumin and sugar, and there is no enlargement of the liver or spleen. The pupils are equal and react to light and accommodation. The knee-jerks are exaggerated.

It will be seen from the above account that while in this case the history and symptoms would seem undoubtedly to indicate the existence of a severe heart lesion the physical signs show no sufficient evidence of this. The heart is small, the pulse is full and strong, and though there is a systolic murmur audible at the apex, this in itself would not be sufficient to account for the frequent syncopal attacks and persistent dyspnœa on any but the slightest exertion. The most prominent feature is the bradycardia, and this, in conjunction with the symptoms, suggested to my mind that we might possibly have here a case of what is known as heart-block, or perhaps better called Stokes-Adams or Adams-Stokes disease.

By heart-block is meant a state in which, in place of the usual rhythm the auricles and the ventricles contract more or less independently, the disease varying from incomplete heart-block, in which the normal relation is disturbed, to complete heart-block, in which the auricles and the ventricles contract quite independently of each other. The nature of this condition has been clearly established by experiments on the lower vertebrates, of which those of Stannius are the earliest. These experiments consisted in ligaturing, in the frog, the connexion between the sinus and the auricle, known as the first Stannius ligature, and the connexion between the auricle and the ventricle, known as the second Stannius ligature. The result of the first ligature is that the sinus continues to beat, but the auricle and the ventricle, after a pause, begin to beat with a rhythm independent and slower than that of the sinus. The result of the second ligature is that the sinus and the auricle continue to beat as before, but the ventricle, after a pause, begins to beat with its own inherent rhythm, which is slower and independent of that at which the sinus and the auricle are beating.

Recent experiments are those by Erlanger on the mammalian heart. Erlanger practically carried out the second Stannius ligature. He ligatured, or rather compressed, in a dog the fibres which are known to connect the auricles with the ventricles in the mammalian heart, forming what is now known as the auriculo-ventricular bundle.

The experimental work of Gaskell has demonstrated that the conduction of stimuli through the heart from the auricle to the ventricle depends upon muscular continuity and not upon any nervous structures, and that the auriculo-ventricular bundle is a bundle of specialised muscle fibres that carries on this conduction of stimuli from the auricle to the ventricle. In a paper by Professor Aschoff of Freiburg[2] will be found a very full and detailed account of the topography and histology of this bundle. Aschoff and his pupil, Tawara, have worked this out in various animals (dog, cat, sheep, calf, rabbit, rat, guinea-pig, pigeon) as well as in man.

I shall content myself with reminding you that the bundle is not a fiction of the imagination but, briefly, has the form of an inverted "Y," which commences in the auriculo-ventricular node situated in the wall of the inter-auricular septum near the opening of the coronary sinus into the right auricle, and passes down in the inter-auricular septum, through the fibrous auriculo-ventricular ring into the inter-ventricular septum where it divides at the lowest part of the pars membrancea septi into two branches, one passing into the wall of the right, and the other into the wall of the left ventricle. Finally, the fibres of each branch spread out under the entire endocardial lining of the ventricular cavities—their final ramifications being what have long been known as Purkinje's fibres. It may be mentioned that the muscular bundle above described is supplied by a special branch of the right coronary artery.

Now Erlanger[3] by compressing this bundle of fibres in the dog's heart carried out in the mammal what the second Stannius ligature did in the frog, and this is the result he obtained. With very slight compression the interval between the contraction of the auricle and the ventricle was increased. With further compression a ventricular beat was occasionally missed and this occurred at regular intervals—for example, after every tenth auricular beat. With still further compression a beat was missed after every ninth, eighth, seventh, sixth, and so on until every alternate auricular beat failed to find any response on the part of the ventricle. The condition now produced may be diagrammatically represented thus, and is known as a 2 : 1 rhythm. (See Fig. 1. The

---

[1] A paper read before the Midland Medical Society on Dec. 1st, 1909.

[2] Brit. Med. Jour., Oct. 27th, 1906.

[3] Ibid., Oct. 27th, 1906, p. 1111.

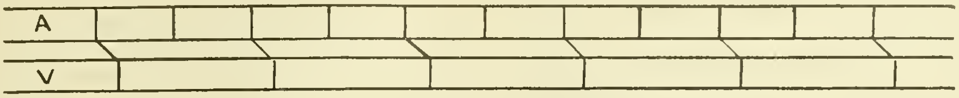


FIG. 1. RHYTHM 2:1

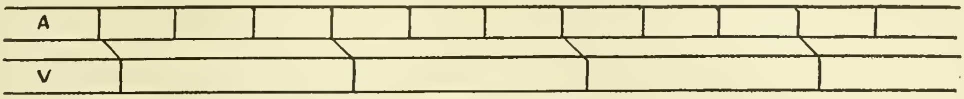


FIG. 2. RHYTHM 3:1

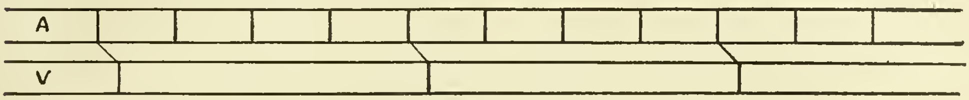
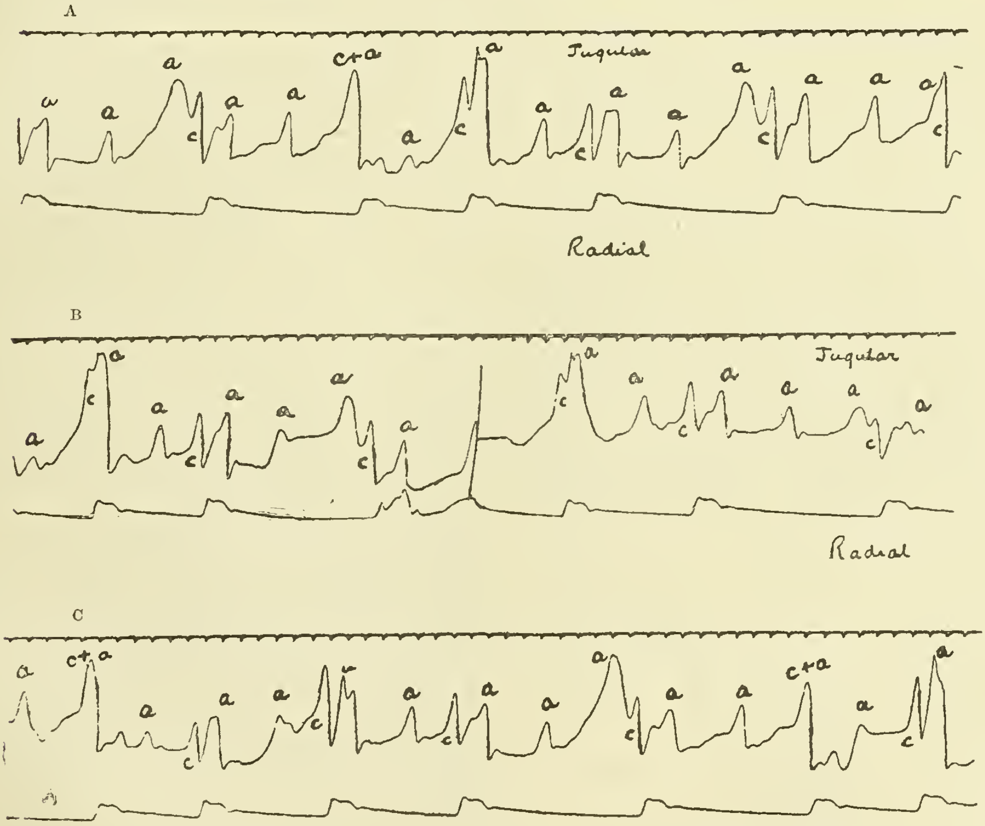


FIG. 3. RHYTHM 4:1



November 4.09.

FIG. 4.

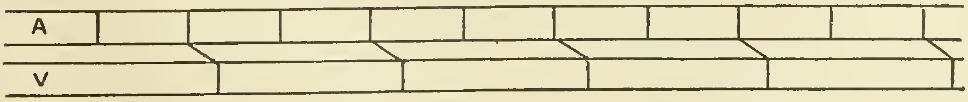


FIG. 5.

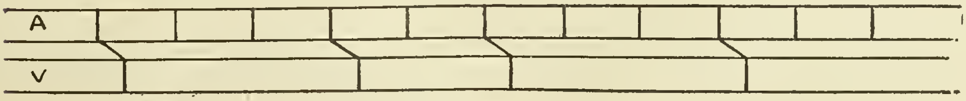


FIG. 6.

down strokes in the space marked "A" represent the auricular contractions; the down strokes in the space marked "V" represent the ventricular contractions.)

It was further found that a 3:1 or 4:1 rhythm (Figs. 2 and 3) might be obtained, and the dissociation might be so extreme that the auricles might contract 10 to 12 times while the ventricles stood still. Up to this point the block was "partial": if the clamp were still further tightened the block became complete. The auricles continued beating as before, the ventricles stood still. The result was cerebral anæmia, evidenced by a syncopal or epileptiform attack, which passed off after a short time, when the ventricles commenced beating slowly with a rhythm altogether independent of that of the auricles. In a dog which survived the destruction of the band for one month the heart-block remained complete, and Erlanger found that after having destroyed the band stimulation of the vagi did not affect the ventricles, though the auricles were slowed.

Every stage of heart-block produced in the above animal experiments finds its prototype in the human subject in cases which have come under notice from time to time. Gibson[4] has collected 15 of these cases, and in all found damage to the auriculo-ventricular bundle. In 4 the damage was caused by gummata, in 3 by degenerative disease of the artery to the bundle, in 3 by fibrotic processes, in 2 by fatty infiltration, in 1 by a sarcoma, and in 1 by a cartilaginous tumour. The clinical investigation of these cases has been greatly facilitated by the ingenious instrument invented by Dr. James Mackenzie and known as the polygraph. With this machine simultaneous tracings can be taken of the radial and jugular pulses, and tested by this method the patient of whom we are speaking gave a tracing, of which Fig. 4 (A, B, and C) is an example

In this tracing the lower part (marked radial) is taken from the radial artery at the wrist, the upper part (marked jugular) from the venous pulse in the neck. The latter shows auricular contractions (marked "*a*") and ventricular or carotid contractions (marked "*c*"). The time-marking indicates fifths of seconds. This tracing is best interpreted from its diagrammatic representation (Fig. 5) in which the downstrokes in space A represent auricular contractions, while those in space V represent ventricular contractions. From this it will be seen that every other auricular contraction fails to produce a corresponding ventricular contraction; in other words, we have here a 2:1 rhythm. A similar tracing taken on March 9th, 1909, from the patient showed approximately a 3:1 rhythm, and Fig. 6 is a diagrammatic representation of this tracing. Tracings from the patient were taken on four different occasions with the following results:—

Date.	Contractions per minute.	Rhythm.
March 9th, 1909.	Auricles 87 Ventricles 31	3:1 (approximately).
June 8th ,,	Auricles 72 Ventricles 36	2:1.
Sept. 19th ,,	Auricles 72 Ventricles 40	2:1 (approximately).
Nov. 4th ,,	Auricles 90 Ventricles 42	,,

Still clearer evidence of the exact rhythm of the heart's action in this patient was afforded by an X ray examination undertaken on Nov. 4th by Mr. F. Emrys-Jones. By the help of the fluorescent screen a very striking effect was obtained, for the contractions of every part of the heart could be distinctly made out, and it was clear that the auricles were beating twice as rapidly as the ventricles.

It is evident, therefore, that in this man we have a well-marked case of heart-block of the incomplete variety, similar to that produced by Erlanger in the dog by moderate compression of the auriculo-ventricular bundle. What is likely to have been the cause of this condition here?

I think that rheumatism has probably been the important etiological factor, and that the systolic murmur, which I have described, indicates some fibrotic change in the mitral or aortic valve, probably in the mitral. I say fibrotic change in the valve, because, while there is a very definite systolic murmur, there are practically no other signs of mitral regurgitation or mitral stenosis. The auriculo-ventricular bundle lies so close to the anterior cusp of the mitral valve and to the cusps guarding the aortic orifice that it is not difficult to understand how the bundle may become implicated when there is any disease of either of these valves, and in this case I think that the bundle has probably been affected by a fibrotic process resulting from the attack of rheumatic fever 36 years ago, which at the same time was the cause of the valvular disease.

As to the length of time that the condition of heart-block has existed, it is not very easy to be definite; but if we regard the "giddy turns" as the symptom of the disease, and I think we must, it has existed for 20 years or more. If the fact be accepted that a condition of partial heart-block may continue to exist for 20 years without material interference with normal health and activity, we may next consider whether the condition has any importance from the point of view of prognosis; in other words, whether a sufferer from slight valvular disease is in any way worse situated by reason of the disturbance of rhythm referred to, or whether the latter may be entirely neglected. The answer is, I think, to be found in the frequency and severity of the semi-convulsive attacks which this patient describes as his "giddy turns."

No satisfactory explanation has yet been found to account for these symptoms, which occur in most cases of heart-block, and which observers consider to be due to cerebral anæmia. The attacks vary in character from very transient attacks of giddiness and syncope to general convulsions, and their severity is said to be proportionate to the length of time that the ventricles are not working. They apparently correspond to the convulsions that occur when heart-block is produced experimentally as Erlanger has done. They may be due to digestive or other disturbances stimulating the vagus, and so further slowing the ventricular beats, and this may be the explanation in this case. Unfortunately, I have not had an opportunity of taking a tracing during one of these attacks. However caused, these convulsive attacks must be considered to be in themselves a grave danger to the patient's life and may be compared to the attacks of angina occurring in cases of valvular and other disease of the heart otherwise presenting no alarming symptoms. It must, however, be noted that the condition has continued in this patient for probably over 20 years, and it is apparent, therefore, that the effect of this condition is not as grave as might be expected.

Supposing stimulation of the vagus to be the true explanation of the syncopal and convulsive seizures, it is evident that the condition of the patient would be positively improved if the disease should go on till the auriculo-ventricular bundle of fibres was completely destroyed and the condition of complete heart-block produced, in which the ventricles would beat with their own slow and independent rhythm. For Erlanger found after complete destruction of the bundle that stimulation of the vagi did not affect the ventricles. This is confirmed by the experiment of Gibson, who administered atropine to a patient with complete heart-block, and found that while the contractions of the auricles were increased from 90 to 275 per minute, those of the ventricles remained at 36.

As regards treatment, it is evident that the condition of heart-block once established is not likely to be benefited by any drugs, although in the syncopal and convulsive attacks rapidly diffusible stimulants and the nitrites may prove useful. In view of the fact, however, that more than 25 per cent. of Gibson's cases were found on post-mortem examination to be due to gummata, it would appear worth while to try the effect of potassium iodide.

It is extremely important to remember that in all these cases such drugs as digitalis and strophanthus are strongly contra-indicated. For this group of drugs diminishes the conductivity along the auriculo-ventricular band, and if pushed to excess will of itself produce the condition of heart-block. It is evident then, for this if for no other reason, the recognition of these cases is of importance, and in every case in which there is persistent bradycardia simultaneous tracings of the jugular and radial pulses should be taken, this being the readiest means by which this condition can be diagnosed with certainty.

Birmingham.

---

[4] Quarterly Journal of Medicine, vol. i., No. 2, p. 182.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Ruptured Tubal Pregnancy.—Contact Carcinoma.—Myomectomy.

A MEETING of this section was held on March 10th, Dr. H. Macnaughton-Jones, the President, being in the chair.

Mr. T. Carwardine gave a demonstration with the epidiascope of a series of micro-photographs from a case of Ruptured Tubal Pregnancy, specially prepared to show certain features of the syncytium, which are probably of considerable importance in the physiology and pathology of the embryonic vesicle. The specimen was taken from a patient, aged 29 years, who was operated upon about 12 hours after the rupture. One specimen of a chorionic villus revealed the origin of multinucleated wandering cells from the fœtal epithelium having cell processes also, which, where not coagulated together by the hardening reagent, were of a delicate silken character, embracing a red blood corpuscle at one place. Some of the wandering cells were attached, others free. A section near the point of rupture showed indications of the "cell sheet," also numerous cells derived from the trophoblast invading the blood clot and undergoing amitotic cell division. They resembled the invading cells seen in the tissues outside a chorion-epithelioma. Villi in contiguity showed great diversity in the characters of the epithelial coverings; one might have a cap of squamous elements; another, columnar cells with brush-like, free edges; a third, varieties of epithelial type, from the cubical or columnar cell to irregular multinucleated protoplasmic masses all having cell processes. A typical illustration was given of such a section, which indicated the origin of Langhans' layer from the syncytial cells; and attention was drawn more particularly to the origin from the syncytium of masses of nuclei having numerous processes, the nuclei undergoing division. Such a mass is found free in the intervillous space, and in all probability has important significance both in the physiological condition and in chorion-epithelioma, and in support of this suggestion a drawing in Teacher's monograph was referred to, a portion of which gave similar indications, though not so clearly as in the photograph exhibited.

Dr. H. Russell Andrews read a paper on Carcinoma of the Cervix of a Prolapsed Uterus in a Patient, aged 86, with a Contact Carcinoma of the Vulva. The patient was a single woman. The cervix, which projected two inches outside the vulva, was the seat of a large carcinomatous ulcer. On the right labium, where it was touched by the carcinoma of the cervix, was a contact carcinoma. Vaginal hysterectomy and excision of the carcinoma were performed. The patient made a good recovery in spite of her advanced age.—The paper was discussed by Dr. F. J. McCann and Dr. G. F. Blacker.

Dr. Russell Andrews also read a paper on Myomectomy during Pregnancy. The patient was aged 23, a I-para. A large sessile subperitoneal fibroid attached to the anterior surface of the uterus, which was nine weeks pregnant, caused fixation of the uterus in the pelvis in a position of retroversion. It was thought that retention of urine and abortion were likely to occur if the fibroid were allowed to remain, and that immediate myomectomy would give the patient the best chance of retaining her uterus. The fibroid, weighing 4½ pounds, was removed and the bleeding area, 5½ inches in diameter, was sutured with catgut. The uterus assumed its normal position at once, the pregnancy was not interrupted, and a living child was born at term, the labour and puerperium being normal.—Dr. G. E. Herman thought that there could be no doubt Dr. Andrews had treated this case in the best possible way. He had given his reasons for deciding on the course he had adopted most clearly and convincingly.—Dr. H. R. Spencer said that there was no doubt the proper treatment had been adopted in this case, which had features exempting it from the general rule against performing myomectomy for corporeal fibroids during pregnancy. It was not to be expected that so large a tumour would permit the uterus to rise out of the pelvis. He had seen a case where a tumour nearly as large as a fist, which grew from the anterior wall, had caused retroversion of the gravid uterus, and by its movement when palpated through the distended bladder, closely simulated ballottement of the fœtal head. In that case the tumour, being much smaller than the specimen shown by Dr. Andrews, did not prevent the uterus from rising out of the pelvis, nor did it interfere with the pregnancy or labour.—Dr. McCann said that he had recently successfully enucleated a fibroid from the uterus of a woman, five and a half months pregnant. The operation was done on account of severe pain in the tumour, which on removal presented the typical appearances of red degeneration. Myomectomy was the ideal operation when it could be performed, and he desired to draw special attention to three points in the technique—firstly, the importance of making the incision as near as possible to the middle avascular line of the uterus; secondly, cutting within and not into the capsule of the tumour; thirdly, plugging the cavity at once with gauze until it could be finally closed with sutures. By attention to these points much loss of blood could be prevented during the operation.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on March 11th, Mr. A. Pearce Gould, the President, being in the chair.

The President showed a case of Detachment of the Entire Scalp in a female patient, aged 16 years, who when at work in a factory on March 31st, 1908, was caught by the hair in a machine and her whole scalp was torn off. Repeated attempts at skin-grafting had been made, but with little or no success. There was a slight growth of epidermis over the lower part of the forehead and on each temporal region, but for the rest the entire calvarium was covered with irregular, pale, poorly developed, and freely suppurating granulation tissue. Attention was called to the intolerance of antiseptics and the good effects of the continuous application of sterilised water, and to the success obtained by Thiersch grafts.

Mr. Arthur E. Barker showed a female, aged 34 years, who stated that a small nodule was removed from the middle of her palate 13 years ago. About six years ago a lump appeared on the left upper gums and became nodulated. It had since spread across the hard and soft palate and over the left tonsil. A gland appeared under the left angle of the jaw about the same time and was still enlarged. In spreading, the growth could hardly be said to have ulcerated, but its inner border was raised and indurated and its middle seemed to have lost substance. It looked like an epithelioma, but its long duration and the patient's age seemed to negative this view. The case was put forward for diagnosis.—Mr. J. Howell Evans and Dr. H. D. Rolleston discussed the case from the point of view of the affection being endothelioma.

Cases were also shown by Mr. S. Maynard Smith, Mr. Hugh M. Rigby, Sir John Broadbent, Mr. C. Gordon Watson, Dr. James Galloway, Dr. F. Parkes Weber, Dr. R. H. Norman, Mr. Howell Evans, Dr. H. G. Turney, Dr. Theodore Thomson, and Dr. E. I. Spriggs.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Arthritis Deformans.

A meeting of this section was held on March 9th, Dr. Leonard Williams, the President, being in the chair.

A discussion on Arthritis Deformans was opened by Dr. R. Llewelyn Jones, who dealt with the classification and differential diagnosis of the various joint diseases grouped generically under that term. He considered that three distinct conditions of arthritis deformans might be recognised—namely, rheumatoid arthritis, osteo-arthritis, and infective arthritis. 1. *Rheumatoid arthritis.*—Etiologically, the salient characteristic of rheumatoid arthritis consisted in the frequency with which it arose in sequence or association with diseases of an infective or toxic nature, hence the strong presumption that this disease was of a similar origin. From an anatomical point of view the primary changes took place in synovial membrane and periarticular tissues, the cartilage being only involved secondarily. Ultimately secondary atrophic changes ensued involving skin, bone, and cartilage, with fibrous and bony ankylosis. Clinically, the condition might be defined as a progressive symmetrical polyarthritis running an acute or chronic course, diversified by remissions and exacerbations. As an arthritic disease it was remarkable for the variety of its collateral phenomena, vaso-motor symptoms, pigmentation, localised sweatings, severe muscular atrophy, and in some cases glandular and splenic enlargements. Constitutional symptoms were well marked. 2. *Osteo-arthritis.*—Etiolologically considered, infective or toxic disorders did not seem to be so intimately related to the genesis of osteo-arthritis, whereas the influence of trauma, so inconspicuous a feature in rheumatoid arthritis, was much in evidence. Anatomically, the essential and primary lesions were in the bone and cartilage which underwent enlargement and hypertrophy, the changes in the synovial membrane taking place secondarily. Bony ankylosis never occurred. Clinically, constitutional symptoms were slight or trivial. The disease displayed a tendency to attack only a few joints, with a preference for the larger articulations, as opposed to the marked predilection by rheumatoid arthritis for the smaller joints. The character of the joint swellings differed markedly from the smooth spindle-shaped swellings of rheumatoid arthritis, the outline of the joint being broken and irregular owing to the presence of bony outgrowths studding the lines of junction of the articular ends. There was an absence of collateral phenomena, and this to his mind constituted a salient distinction, osteo-arthritis being much more a disease of joints, and joints only, than rheumatoid arthritis, where articular lesions formed only one feature in a very varied clinical picture. 3. *Infective arthritis.*—This he considered chiefly in relationship to the more acute forms of rheumatoid arthritis with which confusion chiefly occurred. After excluding the conditions most commonly reputed to be frequently confounded with acute rheumatoid arthritis—such as acute articular rheumatism, acute polyarticular gout, acute gonorrhœal rheumatism, and secondary syphilitic arthritis—Dr. Jones passed on to consider the clinical features differentiating acute rheumatoid arthritis from the large group of infective arthritides not hitherto connected with any special germ. He emphasised the importance of carefully eliciting the previous history for recent occurrence of toxic disorders known to be followed by arthritis, such as dysentery, typhoid fever, and so forth, thus avoiding their confusion with acute rheumatoid arthritis. Again, in the presence of local foci, such as pyorrhœa alveolaris, otorrhœa, &c., he deprecated the too ready assumption that arthritis occurring in such an association was necessarily acute rheumatoid arthritis, as undoubtedly many of these cases were instances of infective arthritis. He laid stress upon the following points of differentiation. In infective arthritis constitutional symptoms were more severe, splenic and glandular enlargements almost invariable with leucocytosis and secondary anæmia. Only a few joints were attacked, and these at the onset of the malady, by preference the larger articulations as opposed to the polyarticular distribution in rheumatoid arthritis, with preference for the smaller. Distribution was erratic, not symmetrical, and there was an absence of collateral phenomena distinctive of rheumatoid arthritis.

Dr. R. FORTESCUE FOX doubted whether there was sufficient evidence for classifying arthritis as atrophic or hypertrophic, or according to its commencement in the cartilages or synovial membranes. The condition was essentially degenerative, and the form and situation depended much on the period of life and the mixture of other causal elements. The infective element was predominant in the earlier decades. In middle life degenerative arthritis was often mixed with gout, and senile arthritis was largely traumatic in origin. A true arthritis might be the result of gout.

Dr. PRESTON KING could not follow Dr. Jones's classification of the disease, especially in his distinction between the rheumatoid and infective forms. His own experience led him to believe that rheumatoid arthritis was not so much a disease by itself as the result of infection from various centres.

Dr. C. W. BUCKLEY considered that while the types described were easily recognisable in well-marked cases they merged one into another, and that hypertrophic arthritis sometimes was a late stage of the atrophic form. He had seen this occur, and believed that it represented an attempt at repair and was thus in some degree a measure of the resistance of the system to the disease. Admitting an infective origin, it was necessary not to lose sight of other factors or predisposing causes which modified the form of the disease.

Dr. W. HALE WHITE thought that previous speakers had not laid sufficient stress upon the importance of those cases in which the arthritis, which followed upon an obvious source of infection, was slight, nor upon the frequency with which obscure cases were due to gonorrhœa. He considered that there was a distinct disease the bacteriology of which was unknown, which should be called rheumatoid arthritis. Sometimes similar symptoms were caused by a known infection; then the name of the offending micro-organism should be prefixed to the phrase "rheumatoid arthritis."

Dr. T. F. GARDNER wished to emphasise the fact that many cases of rheumatoid arthritis presented an early history of arrested tuberculosis most often showing itself as tubercular lymphadenitis. He agreed that the character of the "soil" as shown in ordinary tubercle was significant. He also pointed out that in long-standing cases symptoms of spinal cord degeneration with features of bulbar paralysis ensued, representing an ascending degeneration in the cord itself.

Mr. C. GORDON WATSON said he believed that Dr. Jones divided arthritis deformans into two main classes—the synovial (rheumatoid arthritis) and the bony (osteo-arthritis). Broadly speaking, he would like to argue that these two main classes were quite distinct in their pathology, the former infective and the latter traumatic. Of the latter class he had many examples following definitely on injury to a healthy single joint in young people.

Dr. F. H. HUMPHRIS described his experience with treatment by high candle-power electric light placed in a suitable reflector, followed by an administration of static electricity.

Mr. W. J. MIDELTON said that further experience had confirmed his belief in the efficacy of continuous counter-irritation in the treatment of arthritis deformans. He mentioned the case of a patient suffering from this malady complicated by exophthalmic goitre. She had resisted treatment previously, but gained 28 pounds in weight, and her arthritis was greatly benefited during a course of continuous counter-irritation without any attempt at over-feeding.

Dr. A. P. LUFF, Mr. E. SOLLY, and Dr. R. ACKERLEY also took part in the discussion, which was adjourned until April 20th.

OPHTHALMOLOGICAL SOCIETY.

Xerosis Conjunctivæ and Nyctalopia.—Panophthalmitis.—Exhibition of Cases.

A MEETING of this society was held on March 10th, Dr. G. A. BERRY, the President, being in the chair.

Mr. MALCOLM L. HEPBURN read a paper on Xerosis of the Conjunctiva and Night-blindness. He said that the hitherto accepted theory regarding the cause of this complaint—namely, torpor of the retina due to general malnutrition, could not be justified, either by the condition of the patients or by the presence of the ordinary signs of defective circulation in the retina. A more probable explanation of the night-blindness was that certain rays of light acted prejudicially on the visual purple, causing retardation of the normal metabolism, a theory borne out by the occurrence of this complaint during the months from May to September, when the intensity of the rays of light was presumably at its greatest. The relationship between the xerosis patches and the night-blindness presented many difficulties, and while the connexion between the two seemed to be a very close one, a common cause was not easy to find. It was suggested, however, that the same rays of light which influenced the visual purple acted in some way on the conjunctival mucous glands, inhibiting their secretory function; and in support of this it was found that during the continuance of the xerosis patches the night-blindness persisted, whereas when the former were removed the latter disappeared also. The treatment usually adopted varied considerably, since it was found that many remedies produced an amelioration of the symptoms, though the time they took to act differed according to the special method employed. Some relied on external remedies alone, while others strongly advocated drugs internally without any local application whatever. Bandaging the eyes for a short time had alone been known to give relief, and whatever treatment might be used must evidently not only modify the action of the special rays of light on the conjunctiva, but also their path through the pupil to the retina, since in no other way could the simultaneous improvement in the two prominent symptoms be explained. Arising out of the discussion of this subject, it appeared that there was some reason for thinking that congenital night-blindness, xerosis of the conjunctiva and night-blindness, and the night-blindness of malnutrition might be due to a common cause.—Dr. A. LEVY said cases which he saw showed fundi which were paler than ordinary, and he thought the paleness of the fundi had something to do with the disease. But Mr. Hepburn had not borne that out. However, he thought albinos did not, as a rule, show night-blindness, and they saw better in the night than in the day. He agreed that malnutrition had nothing to do with it. He had not seen xerosis alone.—Mr. M. S. MAYOU said that some years ago he examined a number of such cases and found the changes in the epithelium were in the direction of keratinisation, due, perhaps, to the fact that the disease occurred during the prevalence of hot, dry winds.—Mr. C. DEVEREUX MARSHALL pointed out that the macula did contain visual purple; it was not recognised formerly because the visual purple bleached quickly in light. It had also been said that the bat's eye did not contain visual purple, but if it did not it contained a photo-chemical substance which acted like visual purple.—Mr. G. H. C. MOLD. Mr. S. JOHNSON TAYLOR, Mr. SYDNEY STEPHENSON, and Mr. N. B. HARMAN continued the discussion, and Mr. HEPBURN replied.

Mr. R R. JAMES read a paper on a contribution to the Bacteriology of Panophthalmitis. He related the case of a labouring man who was admitted into St. George's Hospital in November, 1909, with what appeared at first to be an orbital cellulitis following a wound of the upper lid received a couple of days before. There were marked proptosis and extreme chemosis, with haziness of the cornea, but no hypopyon Incisions were made in the lids, but no pus was found. The patient's general condition, which was extremely bad on admission, began to improve, but a couple of days later the conjunctival sac was found to be lined with a tough membrane. The eye was still proptosed, the cornea was uniformly yellow in colour, and gas bubbles and pus were observed issuing from a tiny spot at the upper part. The hole was enlarged and the contents of the globe scraped out, and the man made a slow but uneventful recovery. The bacteriological report by Dr. C. Slater showed that swabs from the pus yielded a streptococcus and a large Gram-positive, immobile, non-sporing bacillus, closely related to, if not identical with, the bacillus aerogenes capsulatus. The results of cultivation on milk, potato, gelatin, and broth were given, and also the results of inoculation of a guinea-pig. The animal rapidly died and the post-mortem findings were similar to those described in a previous paper by Mr. James.—The paper was discussed by Mr. MAYOU and Mr. JAMES replied.

Mr. J. B. LAWFORD showed a case of Massive Exudation in the Retinæ. There was no ascertainable family history of importance. The patient was aged 20 years, and was incapacitated by the failure of sight.

Mr. E. A. DORRELL showed a case of Oxycephaly, and it was commented upon by Mr. HERBERT FISHER, who discussed the possible causation of the condition.

Mr. J. H. FISHER showed a case of Congenital Cataract, the patient having cataracts of quite different character—one large lamellar and the other discoid—in the two eyes.

Mr. A. W. ORMOND showed two cases: (1) A case of Persistent Mydriasis in both eyes; and (2) a case of Transient Myosis associated with headache. The last of the two cases caused considerable discussion.—Dr. E. FARQUHAR BUZZARD said the cause, whatever it was, was acting on both sides, and suggested that there was some paroxysmal condition connected with the third ventricle. Or there might be a cyst in connexion with the choroidal plexus which would at times block the iter, producing for the time being hydrocephalus, probably bilateral in character.—The case was also discussed by the PRESIDENT and Mr. RAYNER D. BATTEN.

Mr. HARMAN brought forward later reports on a case shown last time as possibly granuloma, now shown to be a papilloma.

Mr. DEVEREUX MARSHALL described for Mr. T. H. BUTLER a new Folding Operating Table.

Mr. R. FOSTER MOORE showed a case of Subretinal Hæmorrhage.

Mr. BATTEN showed a case of Persistent Mydriasis following operation for high myopia.

Mr. J. F. CUNNINGHAM showed a case of Vertical Elongation of the Cornea in congenital syphilis.

LIVERPOOL MEDICAL INSTITUTION.

Ureteral Calculi and X Ray Diagnosis.—The Value of Serum- and Vaccine-therapy.

A MEETING of this society was held on March 10th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. THURSTAN HOLLAND read a short paper on Ureteral Calculi and X Ray Diagnosis, which was discussed by Dr. W. C. ORAM, Dr. T. R. GLYNN, and Mr. DAMER HARRISSON.

Dr. NATHAN RAW read a paper on the Value of Sera and Vaccines in the Treatment of Disease. The paper was based on an observation of the effects of such treatment in 628 cases occurring in hospital and private practice. The sera employed included anti-streptococcic serum, anti-diphtheritic serum, anti-tetanic serum, and Maragliano's serum for tuberculosis. Anti-diphtheritic serum was employed in 69 cases, and in definite cases of diphtheria the results had been excellent. Dr. Raw had treated eight cases of tetanus (acute and subacute) with antitetanic serum, on the whole with good effect. The effect of Maragliano's serum on 14 cases of pulmonary tuberculosis had been difficult to estimate. 28 cases had been treated by a single strain of anti-streptococcic serum and 182 cases by means of the polyvalent serum. The cases included such infections as puerperal septicæmia, acute erysipelas, malignant endocarditis, streptococcic cellulitis, acute tonsillitis, and septicæmia. Dr. Raw found that the treatment of acute erysipelas by the serum was always attended with success, and one successful result in the treatment of malignant endocarditis was recorded. Amongst the vaccines employed tuberculin, pneumococcic, typhoid, and staphylococcic were considered. The action of Coley's fluid in nine cases of inoperable cancer and sarcoma was recorded; in only two cases had there been any successful result. The effect of the typhoid and pneumococcic vaccines was uncertain. The treatment of carbuncles, boils, and pustules by staphylococcic vaccines had proved satisfactory. Dr. Raw considered that in a great many cases of tuberculosis the treatment by means of tuberculin had been of very decided value. He employed tuberculin prepared from both human and bovine sources. He believed that local forms of tuberculosis, such as occurred in glands and joints, were chiefly due to the bovine type of bacillus, and that pulmonary tuberculosis was due to bacilli of the human type. He considered that in the local forms of tuberculosis the administration of tuberculin prepared from human sources had the most beneficial effect, and *vice versâ*.—A lively discussion, opened by the PRESIDENT, followed.—Dr. ERNEST GLYNN was surprised that Dr. Raw should consider that local forms of tuberculosis, as in glands and joints, were mostly due to bacilli of the bovine type, because (1) recent observations by Smith, Oehlecker, Duval, Park, Lewis, and the German Imperial Health Office had shown that 34 out of 56 cases of cervical gland tubercle were caused by bacilli of the human type; (2) the Royal Commission had found that 16 out of 30 cases of gland tubercle and 9 out of 9 cases of joint tubercle were also of the human type, though Dr. Raw claimed "that their findings entirely corroborated" his views. Dr. Glynn was also surprised that Dr. Raw should treat gland and joint tuberculosis, assumed by him to be of bovine origin, with tuberculin made from bacilli of the human type, because recent work indicated that a vaccine should be prepared from the same type of organism as that causing the infection, and should even be autogenous if possible.—Dr. J. HILL ABRAM said that his experiences with these remedies, excluding diphtheria, had on the whole been unsatisfactory. Dr. Raw's successful treatment of pulmonary tuberculosis with a remedy derived from a bovine source confirmed the old position which Dr. Abram had never given up—viz., that there is no vital difference between bovine and human tuberculous disease. In fact, the matter stood pretty much where it did before Professor Koch's startling statement at the London meeting.—Dr. W.

PERMEWAN thought that there was a real risk of ordinary surgical principles being lost sight of in the eager rush to vaccines in certain cases. He instanced cases of chronic suppurative ear disease where much time had been wasted and danger incurred by the useless injection of vaccine.—Dr. W. B. WARRINGTON said that impressions formed from a large number of cases were valuable, but that it was desirable to obtain when possible detailed analyses, since, as far as he knew, no single case of septicæmia had yet been proved to have been cured by these means; for local infection the vaccines of coli, gonococcus, and staphylococcus were of approved benefit.—Dr. R. W. MACKENNA said he had been disappointed in tuberculin; he had found no improvement in cases of lupus from the use of Koch's T.R., and his colleagues at the skin hospital had had the same experience. He had had a large experience of staphylococcic vaccine from various sources, and in many cases the most gratifying results had followed treatment. A pustular acne in a patient past the acne age would rapidly yield to vaccine therapy, but vaccines were not "cure-alls."—Dr. ORAM stated that he had never seen any improvement from the administration of tuberculin in the treatment of cases of lupus. He was of opinion that vaccines were unsuitable in acute cases, and that their use should be limited to those cases in which there was reason to believe that the toxin from the focus of infection was not obtaining access to the system. He related a case of furunculosis where ill-effects had followed the injection of vaccine during the negative stage, and repeated temporary improvement followed each injection of serum.—Dr. HENRY H. CLARKE, Dr. G. A. CRACE-CALVERT, and Dr. O. T. WILLIAMS also discussed the paper.

EDINBURGH OBSTETRICAL SOCIETY.

Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa.—Uterus Bicornis.—Antenatal Lobar Pneumonia.

A MEETING of this society was held on March 9th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. J. M. MUNRO KERR (Glasgow) read a paper on the Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa. He first of all referred to the necessity of conservative surgery when that was at all possible in diseased conditions of the uterus and appendages. He then discussed the desirability of radical operative procedures in cases in which the adnexa were hopelessly diseased. He believed in such cases it was undesirable to leave the uterus behind. The two diseases of the adnexa to which he specially referred were malignant disease of the ovaries and pyosalpinx. As regards malignant disease of the ovaries, Dr. Kerr pointed out how unsurgical it was to leave the uterus behind. It was generally now accepted that in malignant disease the operation should be as radical as possible. He referred to several cases in support of this contention. As regards double pyosalpinx he considered it advisable that the uterus should be removed along with the pus tubes, and that for the following reasons: (1) the diseased tubes could be more satisfactorily removed if the uterus were also taken away; (2) by removing the uterus along with the appendages there was less likelihood of the tubes being burst during the operation; and (3) in not a few cases where the tubes only were removed the uterus caused trouble, and a subsequent operation for its removal became necessary. Dr. Kerr finally referred to the importance of dealing thoroughly with any bowel that might be injured. He believed it was better to resect the portion of bowel badly injured rather than try to patch it up. He mentioned in this connexion a case recently operated upon where both tubes and ovaries were removed along with a very much injured cæcum. The patient was now perfectly well. As regards results, Dr. Kerr stated that when it was his custom to simply remove pus tubes he had a maternal mortality of 10 per cent., but during the last two or three years, since the more radical treatment was adopted, neither he nor his assistant, Dr D. Dickie, had had any maternal deaths.—Professor Sir J. HALLIDAY CROOM, Dr. A. H. FREELAND BARBOUR, Dr. N. T. BREWIS, Dr. W. FORDYCE, Dr. E. W. SCOTT CARMICHAEL, and the PRESIDENT made remarks on the paper, and Dr. KERR replied.

Dr. B. P. WATSON read notes on two cases of Uterus Bicornis. The first case was a woman, aged 26 years, who had a full-term child eight months previously. She was nursing the child. There had been no menses since the birth of the child, only a slight discharge of blood at the third month of lactation. About four months afterwards she had a severe vaginal hæmorrhage and something came away. The medical man was called in a few days afterwards and found fœtid decidual remains On clearing the uterus out, the finger in the cervical canal slipped into another smaller cavity to the left of the one containing the remains of the decidua. This proved to be the left half of a double uterus. The forefinger could be passed into one and the middle finger into the other horn and each moved separately. On bimanual examination the fingers of the external hand could be passed between the two and depressed as far as the junction of the horns at the os internum. No decidua was felt in the left half. There was a common cervical canal, but a mesial band divided the external os into two halves. There was also a loose band at the roof of the vagina, the remains of a septum attached at its ends close to the middle of the anterior and posterior vaginal walls. The second case was discovered accidentally while removing a retained placenta which was in the right half of the uterus. The left half admitted the finger at the termination of labour. The two halves were separate down to the os internum, but there were a common cervical canal and external os. She had had four full-time labours previously without any trouble. This condition seemed to interfere very little with the fertility of the patient, and it seldom gave rise to any trouble at labour except in those cases where the pregnancy was in an occluded horn. In all cases the non-pregnant half enlarged during pregnancy and contracted with the pregnant horn during labour. In some cases a decidual cast had been expelled.—Professor Sir J. HALLIDAY CROOM referred to the great difficulty there was in diagnosing such a condition. He related two cases where he had operated and found it present; he had expected to find an extra-uterine pregnancy in one case, and an ovarian tumour complicating pregnancy in the other. On the double-horned uteri being recognised the operation was stopped, and in both cases the pregnancy went on to full time.—Dr. BARBOUR, Dr. FORDYCE, and the PRESIDENT discussed the paper, and Dr. WATSON replied.

The SECRETARY read a paper by Dr. ALEXANDER DON (Dundee) on a case of Antenatal Lobar Pneumonia. The child on being born did not breathe well and had to be well rubbed and slapped to help the respiration. Four hours after birth the child was cyanosed, and on examination the lower half of the left side of the chest was found to be dull, and moist crackling râles were heard over the area. There had been cough with some brownish expectoration, and later some blood-stained mucus. The child died 19½ hours after birth. A swab of mucus taken from the mouth immediately after death was reported on by Professor L. R. Sutherland (Dundee): "Pneumococci are present in large numbers in cultures incubated over night; there are also a few colonies of staphylococci; no streptococci are found." The child's head on being born was still enclosed in the unruptured membranes, so that the brownish material coughed up could not have been obtained from the maternal passages.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on March 11th. Dr. H. Cooper Pattin, the President, being in the chair.—Mr. T. W. Naylor Barlow read a paper on Disinfectants, their Scientific Uses, their Quack Uses, and their Dangers, in which he reviewed the situation with regard to disinfectants and the practice of disinfection. He suggested that a large amount of the disinfection as at present carried out was nothing more than quackery in its worst form; that of the remainder much was useless owing either to the fact that the disinfectant used was of no value or that its mode of use rendered it valueless; that much public and private money was wasted on the purchase of disinfectants; and that the distorted view which the public had of the value of disinfectants constituted a real danger. After enumerating some of the special uses to which disinfectants were put, including the watering of streets, the sprinkling of ashpits, and the washing down of drains, Mr. Barlow said that, in his opinion, their only rational use was in connexion with the infectious fevers. Here there was some definite object in view—namely, to kill the germ causing the disease, and by so doing to prevent the infection from spreading. He pointed out, however, that it had been shown from clinical observation that the organisms which were presumed to be the cause of the various infectious diseases differed widely so far as their infecting qualities were concerned. Each disease should be treated on its merits. The measures suitable for typhoid fever were vastly different from those applicable to diphtheria. Referring to the dangers attending the universal practice of throwing disinfectants about, Mr. Barlow declared that many housewives thought that when they had a case of infectious disease in their household it was not necessary to be ordinarily clean, certainly unnecessary to isolate the patient, provided a sufficient amount of disinfectant was used. He suggested that disinfectants were now frequently used at the expense of cleanliness and markedly so in regard to the daily disinfection of schools.—Dr. William Butler, although sceptical as to the use of disinfection after scarlet fever, considered that its uselessness had not yet been proven, and as the cost was not very great it was better to act on the possibility of good resulting. Among some of the advantages of disinfection was the thorough cleansing of the house concerned. —Dr. F. J. Allan strongly disapproved of the indiscriminate distribution of disinfectant fluids and powders, and considered that medical officers of health should take a firm stand with their councils in expressing this disapproval. He pointed out that in London the sanitary authority was required to cleanse the ashbins. He urged the necessity for insisting upon greater cleanliness in schools.—Dr. S. C. Lawrence thought that there was a danger of discouraging cleanly ways by the too free use of disinfectants. In the Edmonton district, where there was a population of 60,000 persons, £240 were spent yearly upon disinfectants for general distribution, a sum which he considered to be extravagantly high.—Dr. P. Caldwell Smith said that in Wandsworth all disinfection was carried out by the staff of the health department. He considered that after cases of infectious disease disinfection should be carried out by trained men.—Mr. F. E. Fremantle thought that until we could get an alternative we must stick to the principle of disinfection, and considered that until the educated classes could be induced to regard disinfection in its true light it was hopeless to expect the general public to do so. —Dr. Herbert Peck related the good results which had followed the disinfection and scraping of privy vaults and pails in the Chesterfield rural district after an outbreak of typhoid fever.—Mr. Edward Sergeant, while agreeing that much money was wasted upon the injudicious use of disinfectants, considered that the time had not yet arrived for a general condemnation of disinfectants.—Mr. Herbert Jones pointed out the actual harm which was done by using disinfectants in earth closets by the inhibition of the beneficent bacteria in the earth, and thus preventing its nitrifying action.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 4th, Dr. Neville J. Wood, the President, being in the chair.—Mr. Donald J. Armour read a paper on the Treatment of Brain Tumours, which was illustrated by reference to cases, lantern slides, and specimens. He said that there was a general impression among the profession that little good could be expected from operations on brain tumours, but he pointed out the rapid advances of cerebral surgery in the last few years, and regretted also the want of early diagnosis met with and consequent late recourse to the surgeon, so that he generally had not to deal with an early stage and small size. He disagreed with the classification of Walton and Paul, from their statistics as to "operable," "inoperable," and "doubtful," pointing out that by operable they evidently meant curable, and that their statistics were based upon cases in which death was caused by the size of the tumour, and that statistics, to be of any value, must be derived from the records of cases operated on fairly early. He drew attention to what he considered a lack of clear distinction between the radical and palliative operation. He would describe as operable any case of brain tumour in which the growth could be wholly or partially removed with subsequent benefit to the patient. He pointed out the importance of decompression at an early stage before vision began to fail. As to syphilitic tumours, surgical interference was imperative in those cases where symptoms were increasing in spite of adequate medicinal treatment and where localisation was exact, and he would say that when diagnosis and localisation had been arrived at, unless there was decided improvement under medicine in six weeks' time, operation should be recommended, and immediate operation without trying anti-syphilitic remedies when the symptoms were urgent and the risk to life too great to try medicinal measures. Before operating it was impossible to say whether the case would be suitable for a radical or a palliative operation—whenever possible the growth must be removed. Palliative operations were practically free from risk to life and were of the greatest value in relieving the distressing symptoms of headache, vomiting, and optic neuritis, with its resulting blindness. The classes of cases for palliative operations were given: (1) those in which the tumour could not be removed, though localised; and (2) those in which the tumour could not be localised but in which operation was demanded for the relief of symptoms. He discussed other palliative operations, such as lumbar puncture, punctures of lateral ventricle, none of which could compare with trephining. In a decompression operation the opening should be over as unimportant an area of cortex as possible and means taken to restrain hernia cerebri. The questions referring to the exploration for subcortical growths were discussed and also the advisability under certain circumstances of doing the operations in two stages, as was done at the National Hospital, Queen-square. He referred to the dangers arising from interference with the respiratory and cardiac centres. To sum up, he would divide cases of brain tumour into three classes from the point of view of operation: (1) those in which the tumour was completely removed and the patient cured; (2) those in which it could be removed in part with marked temporary benefit to the patient; and (3) those in which the tumour could not be removed at all, but the patient was relieved of the painful symptoms of the disease by the operation.—The paper was discussed by the President and Dr. T. Grainger Stewart.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 9th, Dr. W. E. Fothergill, the President, being in the chair.—Dr. C. Powell White gave a lantern demonstration illustrating experiments on Cell Proliferation. The experiments consisted in the injection of fatty acids subcutaneously into the external ears of rabbits and the mammary glands of guinea-pigs. The acids used were oleic and palmitic acids. The injection set up aseptic suppuration with the formation of an abscess. When such an abscess came in contact with any epithelium, such as a hair follicle or sebaceous gland, the epithelium proliferated and grew over the surface of the abscess forming a complete lining of squamous epithelium. In two cases in which oleic acid saturated with carbonic acid was used the epithelium showed more active proliferation, and penetrated into the subjacent connective tissue, forming columns and isolated groups of epithelial cells. In two cases in which the oleic acid was saturated with methyl oxalate emboli of squamous epithelial cells were found in the lymphatics, and in these two cases also there were found multiple cartilaginous nodules growing from the auricular cartilage. The abscesses formed by injecting oleic acid into the mammary glands became lined with squamous epithelium derived by metaplasia from the mammary epithelium.—Dr. W. Milligan made some remarks on the Pathology and Treatment of Otitic Meningitis, pointing out the usual channels of infection, the various types of meningitis, and the organisms responsible for its incidence. In addition, he referred to the value of lumbar puncture as a diagnostic and as a therapeutic measure, and to the necessity of early operation combined with frequent lumbar puncture to relieve intracranial tension.—Dr. A. Hill Griffith showed some Tumours of the Eyelid, including a lipoma, a condition which is stated in the text-books not to occur.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on March 11th, when Mr. H. S. Souttar gave a demonstration of the Gastroscope invented by himself. Mr. Souttar said that the mucous membrane was the all-important element in stomach diseases, and that before the introduction of the gastroscope no method existed for distinguishing the different macroscopic lesions. He then described the appearance of the gastric mucous membrane in various sites; the fundus could easily be distinguished from the pyloric end, and the pylorus with its radiating folds formed a most conspicuous object. The walls of the stomach were in constant rhythmical notion. The passage of the instrument ordinarily required general anæsthesia; difficulties were usually felt opposite the cricoid cartilage and at the cardiac orifice, but with gentle pressure the resistance could be overcome. By the courtesy of the staff of the Radcliffe Infirmary two patients suffering from doubtful gastric disease were then examined by this method, in one of whom the diagnosis of gastric ulcer was established.

Reviews and Notices of Books.

Sprains and Allied Injuries of Joints. By R. H. ANGLIN WHITELOCKE, M.D., M.C. Edin., F.R C.S. Eng., Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford; Lichfield Lecturer in Surgery in the University. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 241. Price 7*s.* 6*d.* net.

IN no part of surgery has more assistance been given to the surgeon by the introduction of the Roentgen rays than in the diagnosis of injuries of the joints. No rays are needed for the recognition of an ordinary dislocation, but it is on those numerous and slight cases of injuries to joints which are ordinarily called sprains that a great flood of light has been thrown by the introduction of the X rays. Many cases that formerly we should have called, quite justifiably, sprains we now know are instances of injury to bone, and therefore we are able to understand better than was then possible the tardy convalescence which so often ensues on the best treatment at our command. The rays do not absolve the surgeon from the employment of the ordinary diagnostic means such as palpation, but if the slightest obscurity persists after these have been employed he is not justified in refraining from availing himself of the advantage offered by a skiagram. It is clear, therefore, that there is ample justification for the writing of a special treatise devoted to these, as they may still be called, minor injuries of joints, and the work has been well done here.

The book commences with a short account of the structure and function of joints, passing to the general consideration of sprains. The theories of sprains are then considered, and the lesions of individual joints are discussed. In the fifth and sixth chapters injuries to the knee-joint are dealt with, especially those many lesions which are conveniently classed together as internal derangements of the knee-joint. The two following chapters are concerned with injuries of muscles and tendons, and the last deals with the use of massage, movement, and exercises in the treatment of sprains and bruises. In an appendix is an account of liniments and bandages useful for affected joints. There are numerous illustrations, and, like all books issued by these publishers, it is well printed. The tendency of the present day, in spite of the spread of education, to resort to bone-setters and other unqualified practitioners is in some degree due to the lack of energy not rarely seen in the orthodox treatment of the minor injuries of joints. All medical practitioners should see to it that they do not leave unfinished any of the treatment, lest they give an excuse for the introduction of unqualified treatment, with its attendant ill results. In utilising X rays for the diagnosis of obscure injuries of joints it must be borne in mind that it is often necessary that the joint should be viewed from more than one aspect, for a fracture or the misplacement of a bone may be quite invisible when looked at from one direction but perfectly clear when seen from another, and, therefore, the use of a screen is of great value, even though it may be advisable or necessary to have a skiagram taken to serve as a permanent register of the lesion found. The wrist is peculiarly liable to ill-defined injuries, and it is now known that fracture of one or more bones of the carpus is by no means rare, and apparently the commonest of these to be injured is the scaphoid.

We think that this book will assist those who have to deal with some obscure injury of a joint, and its perusal will certainly help to equip the practitioner to treat such cases when they come his way.

Studies in Tuberculosis. By HENRY CLARKE, M.A., M.D. Cantab., Physician to the Liverpool Hospital for Consumption and Diseases of the Chest; Superintendent of the Research Laboratory of the Hospital. Liverpool: At the University Press; London: Archibald Constable and Co. Pp. 53. Price 5*s.*

THE author explains in his preface that these studies consist mainly of a thesis submitted for the degree of Doctor of Medicine of the University of Cambridge. The work is divided into three sections: Diagnosis, Prevention, and Treatment. In discussing the signs and symptoms of pulmonary tuberculosis Dr. Clarke draws attention to the study of the patient's temperature. The effect of exercise in promoting auto-inoculation often gives substantial aid in arriving at a diagnosis. He relies on the mouth temperature for clinical purposes, and ample evidence is now to hand that for all practical work this method of estimating the temperature is satisfactory. The rectal temperature is still resorted to at some sanatoriums, but it subjects the patient to a certain amount of inconvenience, and we agree with Dr. Clarke that the mouth temperature may be depended upon, provided that sufficient time is allowed to counteract the cooling of the mouth by cold air. The remarks on the diagnostic value of the opsonic index are interesting, but the important fluctuations caused by exercise are not mentioned. The normal limit allowed by Dr. Clarke (0·9 and 1·1) we consider too narrow, and we would substitute 0·8 and 1·2.

A comparison is made between the method of administering tuberculin in this country and that adopted in Germany. Dr. Clarke, after trial of both, leans towards the latter, but we think on insufficient grounds. He has not apparently grasped the most modern plan used by physicians in this country—namely, that the dose, and especially the intervals between the doses, must be judged by a study of the patient's temperature chart and certain symptoms, such as headache and undue rapidity of pulse. The object of the German method is to push the dose until a rise of temperature is produced, and then to give the same dose when the temperature returns to normal. In this country the dose is increased until a "flattening" of the temperature curve is observed, and then another dose is not given until the temperature begins to "swing" again. We much doubt whether Dr. Clarke's suggestion would prove satisfactory—namely, that "doses sufficient for a month at a time can be sent by post or taken home by the patient." For the proper effect of tuberculin to be produced the patient must be under close observation, otherwise either the full benefit will not be produced or over-doses may be taken. The treatment of tuberculosis by tuberculin will require extended trial by many observers before the best method of administration can be actually determined.

The Essentials of Chemical Physiology. By W. D. HALLIBURTON, M.D. Lond., F.R.S. Seventh edition. London: Longmans, Green, and Co. 1909. Pp. 280. Price 4*s.* 6*d.* net.

A GOOD deal that in previous editions of this book has become antiquated has been excised, and the subject matter has been brought up to date, so that the bulk of the seventh edition has been little increased. The work consists of an elementary and advanced course and hardly a page seems to have escaped revision. A new lesson has been introduced into the elementary course—viz., on "Some Typical Organic

Compounds," in order to give the student some notion of such important compounds as alcohol, aldehyde, formic, acetic, and oxalic acids, phenol, fatty acids, ketones, ethers, esters and amino acids, and aromatic compounds, amongst others. Naturally considerable space is devoted to the proteins. The German word "Baustein" (building stone)—cleavage products of proteins—seems to have taken a definite place in the text, for we find on p. 113 its introduction without the use of inverted commas. The lipoids, precipitins, and opsonins come in for discussion.

The chapters on respiration have been carefully revised and added to, and in this connexion the author acknowledges his indebtedness for valuable help to Mr. J. Barcroft, whose work in this department of physiology is so well known. Similar thanks are due to Dr. O. Rosenheim and Dr. H. W. Lyle in other departments. Tissue respiration receives adequate treatment, and this is a point worth noting, for the average medical student is content with a very superficial knowledge of the respiratory exchanges in the lungs, forgetful of the fact that the real respiration—the internal respiration—takes place in the tissues themselves.

The advanced course consists of 14 lessons, and it also has been brought up to date. The instructions are mainly practical, theoretical matter being largely omitted. The appendix contains a description of such instruments, and their use, as hæmocytometers, hæmoglobinometers of various kinds, polarimeters and the principles of their construction, and air pumps. There is a short analysis of the all-important processes of diffusion, dialysis, osmosis and osmotic pressure, colloids and colloidal solutions, and in this connexion we have mentioned the Tyndall phenomenon, exhibited by colloidal solutions which scatter polarised light, the basis of what are termed ultra-microscopic observations. The "ultra-microscope" seems destined to play an important part in analysing the constitution of colloidal mixtures. It gives a brilliant analysis of sulphur in solution, for example.

We congratulate the author on the thorough and comprehensive survey of chemical physiology which he has managed to condense and elucidate in little more than 250 pages. We notice that "Metschnikoff" is spelt in one place with an "s," a not uncommon slip.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 36. Observations on Rabies: With special reference to an Atrophic Form of the Disease occurring in Animals. By Major G. LAMB, M.D. Glasg., I.M.S.; and Captain A. G. MCKENDRICK, M.B. Glasg., I.M.S. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Superintendent of Government Printing. 1909. Pp. 34. Price Annas 8, or 9*d*.

THERE are still many problems in connexion with rabies which await solution, the greatest of these being the nature and life-history of the organism which causes the disease. Until this organism has been thoroughly investigated many of the subsidiary questions must remain hidden and be matters only for speculation. Still, within the last few years especially, a considerable number of new facts have been added to our knowledge which tend to help to a better understanding of the etiology of the disease, of its evolution, and of the immunising process to which persons bitten by rabid animals are now subjected by the Pasteur method of treatment and its modifications. The organism of rabies has not yet been discovered and the term virus is used to denote this hypothetical germ, and "emulsion of virus" to denote a portion of the central nervous system containing the virus. The term "virus of the street" was given by Pasteur to the virus as found in rabid animals in nature. When tested by inoculation on rabbits in the laboratory this virus is found to vary in virulence according to the animal from which it is obtained. The term "fixed virus" is used to denote a virus which, by passage through a series of animals, has become of such a strength that the incubation period of the disease after subdural inoculation of the virus is practically always the same and cannot be shortened by further passages. As a rule, this term is applied to a virus which has become of definitely short incubation period by passage through rabbits, and there also occurs a fixed dog virus which has become fixed by passage through dogs. The authors describe several series of important experiments carried out by them. A virus originally obtained from a "dog in the street" was passed through a series of 13 dogs and an increase of virulence was found. Negri bodies were demonstrable in certain cells of the central nervous system of the dogs of the first few passages, but not in the same cells of the animals of the later passages. A peculiar form of rabies seen in rabbits and dogs is also described, in which progressive emaciation was the chief symptom. The disease ran a more or less chronic course, but in some cases was comparatively rapid. The condition was experimentally demonstrated as true rabies on sub-passage to other animals which showed typical symptoms. Experiments are also detailed of an attempt to make a quantitative estimation of the bactericidal action, if such existed, of the sera of patients undergoing anti-rabic treatment. Patients were selected at various stages. The experiments failed to demonstrate the presence of bactericidal action towards rabbit virus in any of the sera. The sera of normal guinea-pigs, rabbits, monkeys, and men were tested in the same way with negative results.

JOURNALS AND MAGAZINES.

Jahreskurse für Ärztliche Fortbildung. A monthly review, each part containing about 100 pages with illustrations. Price 3 marks separately, 16 marks for the year. Published by J. F. Lehmann, München.—This post-graduate course of articles for medical men represents a new attempt to solve the problem of condensing the vast amount of new work on medicine and the allied sciences into a small and readable form. The work is to appear in 12 parts—i.e., monthly—each year, and each part is devoted to some special department. The coöperation of over 30 distinguished professors and teachers has been secured, and a glance through a list of their names will assure the reader of the high authority which their work commands. The work is really in the nature of a medical annual, for each subject is only reviewed once a year, but the method of monthly publication has this enormous advantage—that the reader has plenty of time to look at one subject before the next is presented, whereas the annual, which appears in a single volume, is probably never read through by even the most systematic student. In the space at our disposal it will be hardly possible to give more than a list of headings of the various subjects treated in the January and February numbers. After a comprehensive introduction by Dr. Sarason, the problems of general biology are discussed by Professor Lubarsch. These include: heredity; the transmission of acquired characters; the relative parts played by maternal and paternal parents in the transmission of individual characteristics; the rôle of the nucleus in hereditary transmission; Mendel's laws; fertilisation, and the influence of external conditions upon fertilisation and development; the relation of tissue growth to normal and pathological stimuli; tumours and their relation to developmental defects, dermoids, teratomata, &c.; teratoid tumours produced by injection of living cells into rats; Jensen's mouse cancer; parasitic theories of cancer; the relation of fat and carbohydrates to normal and pathological cell structure. In the February section the diseases of the heart and lungs are treated of, the former by Professor Ortner and the latter by Professor Brauer. The subject of functional heart disorders, with special reference to diagnosis, is dealt with at some length, Katzenstein's method of noting the difference in blood pressure produced by occlusion of the femorals and Koranyi's $\frac{\Delta}{NaCl}$ formula being especially noticed. Other subjects in the first section are: arterio-sclerosis in its general aspects and also in relation to adrenal secretion; cardiac hypertrophy; angina pectoris; symptoms of arterio-sclerosis in other organs; the thyroid heart; the distinction between mechanical and toxic effects of goitre upon the heart; Hoffmann's theories about the relation of the suprarenals to thyroidism. Lung diseases are considered almost entirely from a surgical standpoint. The method of accurate diagnosis by means of the X rays; the advantages of the differential pressure apparatus in operations on the chest; the comparison between the positive pressure system of Brauer and the negative system of Sauerbruch are considered. The relation of collapse of the lung to its physiology and pathology is carefully discussed with especial regard to the production of artificial pneumothorax. The effects of this proceeding upon the circulation and upon the excretion of mucus are described; next the mechanics of artificial pneumothorax, the behaviour of the other lung and of the mediastinum. The practical outcome of these considerations in the treatment of disease is divided under the following heads: tumours; foreign bodies; non-specific pulmonary suppuration, acute and chronic; bronchiectasis; tuberculosis; and emphysema. The relative advantages of pneumothorax, excision of diseased areas, and of drainage are considered under the various diseases. This annual review is notable for the great interest and authority with which the various subjects are treated rather than for any attempt to take note of all important work done in each department. The references to German literature are very full, whilst those to foreign writers are somewhat meagre.

The Fourteenth Bulletin of the Sleeping Sickness Bureau.—In this Bulletin a *résumé* is given of the present state of our knowledge regarding Glossina palpalis, and points are indicated on which further investigation is needed. The facts are summarised with respect to the breeding grounds of the insect, the duration of its pupal stage, artificial breeding, character of the shade essential for its existence, seasonal variations in its numbers, temperature and humidity on which the fly is dependent for the fulfilment of its vital functions, alternation of species, diet of tsetse flies, the relation of human traffic to the distances travelled by them, the means which serve to check their increase, the habits of the fly, the duration of its life, and how protection against its bites can best be secured. In discussing the question of the prevention of animal trypanosomiasis, reference is made to an account given by Dr. Andrew Balfour of a root which the natives of the Bahr-el-Ghazal mash up in a fresh state with cold water and with which they dose their mules and cattle, also washing and rubbing them down with the mixture with a view of preventing the tsetse flies from alighting on them. It is asserted that any flies which do alight on the animals thus prepared drop off dead; usually, however, the odour evolved from the application keeps the flies at a distance. The plant is believed to be the *Vitis producta*, and steps are being taken for the investigation of this root and its uses in the Wellcome Research Laboratories at Khartoum. As bearing on this matter, mention is made of an observation of Dr. Livingstone, the African traveller, who when passing through the region north-east of the Victoria Falls had his attention directed by the natives to a root which was said, when pounded and sprinkled over oxen, to disgust the tsetse flies so that they did not bite these animals. Unfortunately, Livingstone for want of time was unable to investigate the truth of the natives' statement. Up to the present time it must be admitted that little success has attended the efforts made to secure protection against the bites of tsetse flies by the application of various substances to the human skin. Dr. A. W. G. Bagshawe, the editor of the Bulletin, expresses the opinion that our knowledge of the habits and life-history of Glossina palpalis, or of other species of this genus, does not grow as quickly as it should, and to gain the knowledge needed many more workers should be in the field. He refers to the time and energy expended in Africa on the administration of drugs to advanced cases of sleeping sickness where the chances of success are but faint, and suggests that a portion at least of such time and energy might be usefully devoted to the study of the insect, in the absence of which the malady would cease to occur. The problem of the trypanosome diseases of Tropical Africa and that of the insects which transmit them are one and the same; Dr. Bagshawe therefore contends that our hold over these scourges will always be uncertain until we have a cheap and effective method of suppressing tsetse flies, exterminating them in some places, and reducing their numbers in others. This method, however, is still to be discovered. It is suggested, meanwhile, that a trial might be given in suitable areas to Maldonado's simple and easy plan, which we described in The Lancet of Feb. 12th, for reducing the tsetse flies in a given locality. The Bulletin contains a number of other very interesting articles, among which we may mention those dealing with the diagnosis of human trypanosomiasis, the influence of other infections upon this disease, the mode of action of atoxyl, the treatment of trypanosome infections, and immunity in the trypanosomiasis of rats.

PELLAGRA INVESTIGATION COMMITTEE.

A meeting of the Pellagra Investigation Committee was held on Monday, March 14th, when there were present Sir T. Lauder Brunton (in the chair), Mr. E. E. Austen, Fleet-Surgeon P. W. Bassett-Smith, Mr. R. S. Fraser, Dr. Clement Godson, Dr. R. T. Leiper, Sir William Leishman, Dr. G. C. Low, Dr. J. M. H. MacLeod, Sir Patrick Manson, Sir John McFadyean, Dr. G. Pernet, Professor Ronald Ross, Dr. L. Sambon, Dr. F. M. Sandwith, Professor W. J. R. Simpson, Miss A. Lorrain Smith, Mr. Otto Stapf, and Mr. J. Cantlie (honorary secretary).

It was resolved that Dr. Sambon should be instructed to proceed at once to Italy. The money actually in hand amounts only to one-fifth of the minimum sum required, but the Committee hope to be able to secure such sums as have been offered conditionally, and have meanwhile formed amongst themselves a guarantee fund which was liberally subscribed to.

The Committee hope to continue to receive support in order that they may be enabled to allow Dr. Sambon to stay a sufficient time to complete his investigations. The donations so far received are:—

	£	*s.*	*d.*
Lord Pirrie, K.P.	5	0	0
Sir Charles MacLaren, M.P.	1	1	0
Mr. Henry Bubb	20	0	0
Countess Cezaresco ...	5	5	0
Jeyes' Sanitary Compounds Co.	20	0	0
Sanitas Company	10	10	0
Mr. Arthur F. Levita ...	10	10	0
Mr. Aug. Oddenino ...	5	0	0
Alfred de Rothschild ...	5	0	0
London School of Tropical Medicine ...	10	10	0
Liverpool School of Tropical Medicine ...	10	10	0
Commendatore Polenghi	10	10	0
Messrs. Oppenheimer, Sons, and Co.	5	5	0
Mr. F. E. Lawson	1	1	0
Mr. Albert Profumo ...	2	2	0
Mr. T. Holloway	1	1	0
Mr. W. H. Lever	5	0	0
Mr. V. B. Tritton	5	0	0
Mr. G. A. Tonge	5	0	0
Mr. Harry W. Birks ...	1	1	0
Mr. Bertram L. Hue Williams	2	2	0
Mr. J. B. Hurry	2	2	0
Hon. Miss Blyth	1	1	0
Mrs. Barney Barnato ...	5	5	0
Admiral Beatty	5	0	0

Captain Siler, United States Army, was officially welcomed as a member of the Field Commission, and two assistants, M. Baldini and M. Amoruso, were appointed to accompany Dr. Sambon. The Field Commission will leave next Saturday. Dr. Sambon left for Italy on March 20th.

THE LANCET.

LONDON: SATURDAY, MARCH 26, 1910.

The Paddington Dispensary for Tuberculosis: Some General Reflections.

CERTAINLY among the most important steps made in the modern struggle of the community against tuberculosis was the foundation at Edinburgh of the Royal Victoria Dispensary for Consumption by Dr. R. W. PHILIP in 1887. That movement has been imitated and developed in many parts of the world, not only on the continent but also on the other side of the Atlantic. Many will remember the interesting ceremony which was performed last October by the KING when he completed an electric circuit at Chichester which opened the Royal Edward Institute for the study and treatment of tuberculous disease in Montreal, an institution founded on the lines of the Edinburgh dispensary system. Probably fewer are aware that a similar dispensary for the prevention of consumption has been in active operation for the past year in London, and that Paddington claims the honour of having shown England the lead in the practical control of the most devastating endemic disease which afflicts this country. On March 17th H.R.H. Princess MARIE LOUISE of Schleswig-Holstein was present at the first annual meeting of the supporters of the Paddington Dispensary, which was held at the Paddington Baths under the chairmanship of the mayor of that borough, and the meeting had the advantage of listening to a clear and modest exposition of the work that has been effected by the dispensary movement from the lips of its only begetter, Dr. PHILIP, to a commendation of its results from Sir MALCOLM MORRIS, and to other speeches by Dr. R. DUDFIELD, to whose coöperation as medical officer of health of the borough the work owes a great deal, Mr. H. LIDIARD, Mr. H. P. HARRIS, M.P., Canon WYNDHAM, and Sir JOHN BROADBENT. At this meeting the report was adopted and the provisional committee which has controlled the working of the dispensary since its foundation under the chairmanship of Dr. DUDFIELD was elected an executive committee for its future management. We are enabled to print this week a complete account of the methods and work of the dispensary from the pen of Dr. D. J. WILLIAMSON, its executive medical officer, who, with the coöperation of the dispensary nurse, Miss GOODCHILD, has worked strenuously and unremittingly to establish the dispensary on a successful basis and to win the confidence of the poor inhabitants of Paddington, although, curiously enough, we heard no acknowledgment made at the annual meeting of their labours and none appears in the report. We are sure, however, that they rest content upon the results of a year which included the repeated examination of 877 new patients, who attended at the dispensary in all 5310 times, the paying of 2371 visits at the patients' own homes, the systematic examination of the sputum of all suspected cases, and the establishment of a system of case records, which we are satisfied from its inspection has already become a valuable nucleus for a library. Such a library it is proposed to establish at the dispensary for the benefit of those interested in either the medical or sociological aspects of tuberculosis. We commend Dr. WILLIAMSON'S section of the report, with its appalling genealogies of disease, to the attention of all students of public health.

The aim of the work upon which Dr. WILLIAMSON and his committee are engaged is prevention, although every step is taken for the physical amelioration of tuberculous patients that the social conditions of each individual case will allow. The chief enemy of the work is the routine bottle of medicine; its chief aid the practical application of the lessons of science and of experience to the home conditions of the poor. In the phrase of Sir MALCOLM MORRIS, the organisation of the dispensary for tuberculosis "tracks tuberculosis to its lair" and strives to eliminate the infection from each new focus brought to light, no less than to remedy and to render innocuous the actual carriers of the disease. This is achieved by establishing a suitable house in the centre of a district where tuberculosis is rife, and by getting into touch with every agency which is likely either to discover the whereabouts of tuberculous cases or to assist in their alleviation. Such agencies are the municipal office of health, the out-patient departments of local hospitals, the local Poor-law authorities and charitable agencies, and, not the least important, the medical practitioners of the district, to whom the dispensary is an auxiliary and never a rival. It is a sound feature of the system that the treatment of no case which is already in medical hands is undertaken without the written consent to such a transference of responsibility being first obtained from the medical man in attendance. We need hardly say that in work amongst the classes for whose benefit the tuberculosis dispensaries are principally intended there cannot be much question of a transference of professional emoluments, but it is important to free the new organisations at the outset of their valuable career from a reproach which has been levelled against the out-patient departments of many large hospitals and not without justice. As a matter of fact, the experience both at Edinburgh and at Paddington is that private practitioners frequently send their poor cases to the dispensary either for consultation or for treatment, whilst the out-patient departments of general hospitals are not less quick to free themselves of the heart-breaking responsibility of cases for which their system of treatment, allowing of no home supervision, is confessedly inadequate. When a patient has been seen at the dispensary and pronounced tuberculous, his home is visited by the nurse, who fills up a careful register of its hygienic and economic conditions, which is countersigned by the medical officer after he has paid a visit for himself. His treatment of each case is thereafter conditioned entirely by the environment of the patient. He gives personal advice upon the best methods of obtaining open-air treatment in a small tenement, to certain cases he lends open-air shelters, and he always refrains from ordering expensive nourishment for a person who is obviously unable to obtain it. Where financial assistance is necessary for the proper feeding of a patient, the visiting staff of medical officer and dispensary nurse obtain it through one of the philanthropic agencies with which they are in contact. Where they are assured that a patient is incurable and is in such a condition as to afford a menace of contagion to his housemates, they use every endeavour to secure his removal to a suitable institution; and where the case is recognised so early that it stands a fair chance of cure by sanatorium treatment, they secure admission to such an institution; while, if the patient be a breadwinner, they commend his dependents to the care of such charitable agencies as are willing to coöperate. Whatever kind of relief be given, overlapping is avoided, and care is taken to recommend only that particular form of relief which either holds out hope of benefit for the case, or is desirable in the interests of those who come into contact with the patient. Important as the care of the patient is, the dispensary system regards it as secondary to the care of "contacts." Wherever a case of tuberculosis comes under the notice of the dispensary a thorough attempt is made to examine the patient's near relatives, and in the event of any suspicious signs, however indefinite, being found in them they are given the benefit of the doubt by being treated not as healthy but as "pre-tuberculous subjects," and are instructed in the hygienic way of life requisite for their redemption from a worse fate. As Dr. Williamson writes, this entails a vast deal of work that can only be carried out by the systematic coöperation of various social agencies. "The improvement of the dwellings, the teaching of domestic economy and cookery, the inculcation of thrifty, sober, and cleanly habits, the care, nourishment, and education of children, and the finding of suitable employment for the consumptive breadwinners are some of the problems concerned." There has recently been much talk of a social service movement in London and other big cities. Here, in the establishment of such a circle of defences against disease, want, and misery as an anti-tuberculosis dispensary entails, will surely be found a method of service which many charitable persons might render who would do much for their poor neighbours did they only know how to do it wisely. And the wisdom can be acquired.

From an investigation of the Paddington Dispensary we are convinced that Dr. Philip has given the world a most businesslike aid to the solution of the problem of tuberculosis, and we are pleased to welcome such a worthy copy of his Edinburgh Dispensary to the metropolis. It is only surprising that it has taken so many years for the movement to reach us. Not a little of its success is due to a recognition of the fact that when funds are limited it is useless to pour them out on sanatorium treatment for advanced cases of tuberculosis, and even experience has shown that many early cases do remarkably well at home under proper supervision. It is encouraging to be told that the Tuberculosis Exhibition which visited Paddington last year has had so marked an educative influence on the dwellers in the slums as to render easier the work of the dispensary staff. It is also encouraging to learn that the work and staff of the dispensary are to be doubled, since the people of North Kensington have expressed a desire for the system to be extended to that district and have guaranteed to provide the necessary additional revenue. Another imminent innovation is the establishment of a school in a suitable house to be run upon "anti-tuberculous" principles, the London County Council having undertaken the financial responsibility. Considering the acknowledged frequency of tuberculosis amongst children of school age, to which the founder of these dispensaries has called attention recently in our columns, we welcome the breadth of mind displayed by the Council in thus giving its support to the movement. The home treatment of tuberculous patients on similar lines has been firmly established in Ireland, as may be seen from the summary of the report of the Dublin Hospitals Tuberculosis Committee which appears on another page; and we are glad to learn that such a dispensary is to be established in Marylebone. We hope to see before many years an anti-tuberculosis dispensary established in every metropolitan borough and in the large cities throughout the country. Then will the advance against tuberculosis, for which we have been waiting for so many years, be made effectively because all along the line. A medical man has shown the way, and it behoves our profession to bring tuberculosis dispensaries to the notice of those who take a personal interest in the welfare of the people.

◆

The Medical Treatment of School Children.

There can be little doubt, we presume, that it should be among the first duties of a strong Government, whenever the state of public affairs shall be such as to permit the existence of one, to turn its attention to the reports of the Royal Commission on the existing state of the Poor-laws, and to remodel these laws by some comprehensive enactment which will make proper provision for medical as for other forms of relief. But the strong Government is not yet in existence; and, even when it comes into being, it may not be disposed to exhibit any marked haste in dealing with a series of thorny and complicated questions. In the meanwhile it will be in accordance with many laudable precedents if Englishmen strive to do the best that is possible with faulty materials, and if they regard their school system less as a source of problems than as an agency which, perhaps with a little straining here and there, will permit a good work to be carried to a satisfactory conclusion. We are led to these remarks by observing that certain medical officers of health, some members of hospital staffs, and more than one of our own correspondents, seem to regard the present situation as one presenting insuperable difficulties. Let it be granted that inspection which is not followed by a quick and systematic routine of treatment is considerably wasted; and let it also be granted that these are difficulties in the provision of that treatment. We trust that in this position school medical officers generally, who in the counties are now practically almost universally the county medical officers of health, and the medical officers of health who are associated with them, will earnestly seek how to turn existing opportunities to good account, instead of discussing the imperfections of detail which may, no doubt, be discovered in them at every turn.

Difficulties which seem formidable upon paper have a way of disappearing when they are resolutely faced, and it is more than probable that the experience of the present manifestly transition period may be of signal assistance when the time comes for considering and for establishing upon some sound basis of principle the manner in which the sickly or feeble child should be dealt with by the administrators of public assistance. One thing at least appears to us to be certain, and it is that the responsibility of the parent in the matter of the sick child must be firmly upheld if the school curriculum is to be a benefit to the community. For genuine poverty there should be prompt and adequate assistance ; but the parent whose child is deprived of proper food, or of proper medical treatment, or is exposed to infection, by his or her own fault, should be made answerable for the consequences of such misconduct. In many matters the law is an effective educator, and education concerning children should not be confined to the children alone. It is probable that the Parliamentary representatives of labour would not be opposed to an enactment by the operation of which the respectability and the self-respect of their constituents would be indefinitely increased. In the meanwhile, and until further legislation can be obtained, it is desirable that free use should be made of the power of excluding diseased or verminous pupils from the schools, and of then fining the parents for their non-attendance. In many cases and localities, however, proceedings of this kind would fail to reach to the foundations of the evils which are to be dealt with, and it is manifestly necessary to provide some means by which the most commonly prevailing school diseases can be effectively treated at a cost not beyond the means of the average parent, and gratuitously in the case of the necessitous. Here, again, the question is still in the experimental stage, and it seems probable that different methods may find favour in different localities ; but it is one concerning which medical opinion should be predominant. It seems to us to be incumbent upon the profession to make its voice heard in relation to the matter, and to refuse its coöperation to any scheme in which its interests and its dignity are not sufficiently consulted. The method for dealing with the situation by an alliance between hospitals and school committees is receiving trial. It has its obvious conveniences, upon which we have frequently dwelt. This machinery of inspection is in the hands of the county councils, themselves public health authorities and in a good position to approach the large general hospitals and invite coöperation between two highly organised services for the carrying out of a joint task. The method is also not without its critics, who find that the arrangement does not add to the prestige of the hospitals concerned because it contains a risk of interference with their management, and may be prejudicial to the practitioners in the neighbourhood of the medical school. Of the first objection we think nothing ; while the second is not so serious as it looks, for of the patients who attend the out-patient departments of the hospitals as the result of school inspection but a tiny proportion would ever be paying patients.

The establishment of school clinics to be worked for proper remuneration by the medical men of the locality has not yet met with extended trial. Here the obvious convenience of the arrangement is absent because a new machinery has to be organised, but many of the grounds for criticism can be abolished. It is interesting, therefore, to see that an arrangement of this kind has been entered into at Hampstead, where the medical practitioners have formed themselves into an association under the title of the Hampstead Public Medical Service, and have agreed with the London County Council to provide treatment for an estimated number of 400 children suffering from affections of the eye, ear, nose, and throat, and from ringworm, at an estimated cost of £155 per annum. It is regrettable that it has not been found possible to utilise the out-patient buildings now lying idle at the Hampstead General Hospital for the Public Medical Service. We understand that negotiations were opened between the council of the hospital and the Hampstead Council of Social Welfare to a similar end, but that they were unable to come to terms. Incidentally we believe such a *rapprochement* between the hospital authorities and the practitioners of the neighbourhood would tend to the healing of a professional sore that has remained open too long. But whatever buildings be used for the new service the medical men of Hampstead appear to have taken the initiative into their own hands, and their example may be followed in other parts of the country if their efforts end in practical success. Recently we were able to announce that the medical practitioners of Norwood are proposing to form a similar school clinic in coöperation with the London County School. Where for this reason or that the facilities offered by a general hospital are not available it may certainly be advisable for medical practitioners to form a school clinic.

◆

Varicocele and the Public Services.

IT may be remembered that some years ago[1] we published a letter from Colonel FRANK HOWARD, of the Army Medical Staff, inviting a discussion of the question whether varicocele should be a bar to admission to the services. Many surgeons recorded their views, and although there were slight differences of opinion as to the exact mode of origin and the significance of the condition, there was a wonderful unanimity as to the general harmlessness of varicocele, both to the life and comfort of the individual and to the integrity of the testis. While some, with Mr. HARRISON CRIPPS, were inclined to regard this dilatation of the spermatic veins as of physiological origin and connected with a temporary restraint of the functioning of the testis, most of those who joined in the discussion looked upon the varicocele as pathological in nature but of trivial importance both as to symptoms and as to consequence. We were not without definite hope that the discussion in the columns of THE LANCET might have induced the authorities to reconsider the question of regarding the possession of a varicocele as an obstacle to admission to the services, but so far as we are aware nothing has been done—and daily the rejections occur. It is the practice in most centres of enlistment for the Army and Navy when a man who has a varicocele but is otherwise an unobjectionable recruit is rejected, to tell the candidate that if he has an operation performed on the varicocele he can come up again before the authorities, when he will be admitted. In most cases he goes to a hospital and asks to have the operation performed so that he may enter the service. Nearly every surgeon attached to a general hospital operates yearly on a large number of these young men, and in the vast majority of them no operation is needed. A few surgeons refuse to operate for varicocele, for they consider that the operation, being absolutely unnecessary, is unjustifiable; but most surgeons feel that it is hardly fair to the patient to refuse to remove an obstacle which stands, however wrongly, between a desirable candidate and his admission into a public service. There is much to be said on both sides with regard to the proper course in the present position of affairs, but the real question is whether it is reasonable that young men, in other ways desirable as soldiers or sailors, should be refused admission in consequence of possessing a varicocele unless they submit to an operation.

---

[1] THE LANCET, Sept. 23rd, 1905, p. 923.

What are the admitted disabilities and disadvantages attached to a varicocele? Though some have asserted that it leads to fibrotic changes in the organ and so causes atrophy, this effect is denied by most of those who have devoted especial attention to the subject; but even if this is true the disease, if disease it be, is nearly always confined to one side, and therefore it is somewhat difficult to see how this atrophy can affect harmfully either the individual or the State. A more specious argument is contained in the assertion that the possession of a varicocele incapacitates a man for strenuous or continued exertion on account of the aching and the dragging pain induced by hard work. The fact is, and this may easily be ascertained by anyone in the habit of examining large numbers of men, that in the vast majority of cases a varicocele gives rise to no symptoms whatever; most of those who would be described by some as suffering from varicocele are not aware from any sensation that anything is wrong with the contents of the scrotum until informed by a surgeon. It is true that in a small percentage of cases a slight uncomfortable sensation is experienced, but this is generally completely relieved by a suspensory bandage. Very rarely indeed has any real pain attended a varicocele. Cases have been recorded in which exertion has caused acute suffering, but so rare are these cases that many surgeons of large experience have never met with one. It is not improbable that in many of those instances where severe pain is described as present a neurotic element magnifies the suffering. In some cases there can be little doubt that the alarming prognostications of quack literature are responsible for the pains felt in a varicocele. Further, it has to be borne in mind that though some dilatation of the spermatic veins is very common in young adults it is less frequently seen in middle age, and it seems to be clear that there is a form of varicocele which may disappear spontaneously. The main reason, however, for refusing to admit into the services men with varicocele is that the condition forms a convenient excuse for the malingerer. When a man wishes to shirk hard work or a toilsome march it is much more difficult to refuse to admit his plea of pain if he has an obvious lesion which may possibly be accompanied by pain, and doubtless malingerers have been inclined to avail themselves of this excuse. But actual experience shows that varicocele, which exists to no small extent in the services in cases where it has developed after admission, is extremely rarely advanced as a reason for escaping hard work. Many army surgeons experienced in active service have never met with a case, and rare as malingering is from this cause amongst private soldiers, it is, we believe, rarer or unknown amongst officers. Is it wise, therefore, to debar desirable candidates from entering the services if they suffer from varicocele unless they are willing to have an operation performed? Even the matter of expense is not negligible. A would-be recruit can certainly have the operation done free of expense in a general hospital, but those who wish to enter as officers must incur the cost of the fee of the surgeon and the expenses attendant on the operation. And the operation is not free from risk to the integrity of the testis, though there may be no danger to life. Many cases have occurred in which atrophy of the testis has followed operation for varicocele as the result of interference with the blood-supply or nerve-supply of the organ.

The question therefore arises, Is it justifiable to require a young man to undergo an operation for a condition which in itself hardly ever interferes with the most strenuous occupation, the operation itself being not absolutely free from risk of injury to the testis? Experience has shown that the condition is brought forward by malingerers with very great rarity as an excuse for shirking work. The answer to the question seems to us clear. Varicocele should not of itself be a cause of rejection of candidates for the services who are otherwise suitable, and candidates should never be advised or required to submit themselves to operation for its cure. At any time to reject a young man, in every other way eligible for one of the services, on account of a lesion of so little importance, would be unwise, but at the present day, when the supply of suitable recruits is definitely diminishing, such action cannot be defended. It is undoubtedly due to the difficulty of carrying out reforms in Government Departments that this matter has not received the attention which it merits, but we may not unreasonably hope that those on whom the authority rests will reconsider their position, and will effect a not unimportant reform in the medical requirements for admission into the Army and Navy.

FOREIGN UNIVERSITY INTELLIGENCE.—*Erlangen:* Dr. Ludwig Seitz of Munich has been appointed to the chair of Midwifery and Gynæcology, with the charge of the University Clinic for Women, in succession to Dr. Philipp Jung, who has gone to Göttingen.—*Greifswald:* Dr. P. Kroemer of the Berlin Charité has been appointed to the chair of Obstetrics and Gynæcology and Director of the Women's Clinic in succession to Professor M. Henkel, who is going to Jena.—*Limoges:* Dr. Eymeri has been appointed Professor of Physiology in succession to Dr. Descazals.

Annotations.

"Ne quid nimis."

ELECTION OF PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AT a Comitia at the Royal College of Physicians of London held on Monday last Sir Thomas Barlow was elected as President for the ensuing year. The choice had been generally anticipated, and was certainly merited. Sir Thomas Barlow is a worthy addition to the long list of those who have occupied the Presidential chair and will carry with him the good-will of the profession. Widely recognised as a great physician, his energy and tact are well known, and his speeches at the College have been always characterised by a complete knowledge of his subject and a firmness which tends to carry conviction. We congratulate him on his election, which clearly expressed the general wish of the College. In thanking the Fellows for electing him he took the opportunity of referring in graceful terms to the great services which had been rendered to the College by Sir R. Douglas Powell during his five years of office, for many important and anxious movements had arisen during those years, when he invariably exhibited the impartiality and firmness so essential in a President. For our part we may take the liberty of adding that in retiring from office Sir R. Douglas Powell carries with him the gratitude of the profession for his efforts in ruling over many discussions at the College of Physicians which involved questions of the utmost importance. In addition he represented the College at non-professional gatherings in a manner which could only inspire confidence in the profession of which he is so eminent a member.

THE EXHIBITION OF HYGIENE, DRESDEN, 1911.

SOME years ago, on the occasion of a conference of hygiene at Dresden, the suggestion was made that a large exhibition of all matters appertaining to hygiene might be held with advantage to the public and to the various professions concerned with hygienic matters. The idea was well received, but as it necessarily involved a very elaborate organisation no definite steps were taken at first to realise it, the prime movers in the matter obviously considering that a certain lapse of time was required for it to ripen. Within a short time, however, a wealthy member of the conference, Geheim-rat Ligner, made up his mind that an exhibition should be held, and that not merely a Dresden affair but a large international exhibition. The determination of this financier smoothed the way and within the course of some months the preliminary steps were taken. In 1908 the scheme took shape, and it was announced early last year that the King of Saxony had accepted the office of patron, that the German Imperial Chancellor was one of the honorary presidents, and that the committee included some of the most eminent hygienists and Government officials in the Empire. Certain grants were made by the treasury of Saxony and of the municipality of Dresden, the German Government followed suit, and private subscriptions headed by Geheim-rat Ligner soon placed to the credit of the committee a sum sufficient to ensure success as far as Germany was concerned. The exhibition buildings and grounds were placed at the disposal of the committee gratuitously, and the King on learning that more space was required offered a part of his Royal Park for the purpose. At present the preparations are advancing well, and there is every indication that this "Healtheries" Exhibition of 1911 will be the biggest affair of its sort that has ever been organised. The actual exhibition will comprise a number of sections dealing with every branch of scientific hygiene, and illustrating everything which tends to affect the health of the public. There will be object-lessons of advances and of failures, records of social factors in hygiene, and indications for future progress. A special section will illustrate the ravages of certain widely spread diseases, such as cancer, tuberculosis, syphilis, and alcoholism. The industrial side of hygiene will be included, and there will be a historical section. It is intended to hold conferences during the six months following May, when the exhibition will open its doors. The Governments of France, Italy, Holland, Spain, and other countries have already signified their intention of taking a part in the exhibition, and national committees have already been formed. A slight accidental delay has occurred with regard to the issuing of the official invitation from the German Government to the British Government, but in the meantime we understand that some useful semi-official reconnoitring has been undertaken. A few weeks ago Professor Pannwitz was delegated by the committee of management in Dresden to visit England to stir up interest in the exhibition, and more especially to feel his way with regard to the attitude which the Government departments would assume when the matter was officially brought to their notice. A conference has recently been held in London, attended by a fair number of distinguished scientists and practical hygienists, considering the fact that only two days' notice could be given. Professor Pannwitz delivered a lucid address, in which he set forth the objects of the exhibition, and asked for the active coöperation of British hygienists. It was agreed that pending the reply of the British Government to the invitation which Professor Pannwitz announced would be sent from Germany in the course of a few days, the members present should form the nucleus of the British executive committee, and that the organising work should proceed under the direction of Mr. H. W. Armit, supported by Mr. Sigle as business manager. Professor Pannwitz announced his intention of returning to London in a month's time, when he hoped to attend a second, but larger, conference, at which the full honorary and working committees could be appointed. He expressed the hope that the hygienists of Great Britain would put their best foot forward, and by taking a prominent part in the exhibition give the world fresh evidence that this country has the reputation of being a leader in matters of public health.

THE WEST AFRICAN MEDICAL STAFF.

THE subcommittee appointed by the Advisory Medical and Sanitary Committee for Tropical Africa to consider the question of the course of study to be taken by West African medical staff officers of five years' standing, and the application of these arrangements to officers who have already completed five years' service, has decided to recommend that the course of study should be the three months' course of the West London Post-Graduate College or the London School of Clinical Medicine at the Seamen's Hospital, Greenwich (or such other post-graduate course as may be approved by the Secretary of State on the application of the governing body concerned), in clinical medicine, clinical surgery, and pathology. The subcommittee recommends also that officers should be allowed to substitute for this course either: (1) the course of study and examination for a recognised diploma in public health, sanitary science, or State medicine; or (2) the course of study and examination for a further medical or surgical diploma or degree (in this case no fee should be paid by the Colonial Government, and the officer should only be given his railway fare and the allowance for lodging expenses); or (3) if the Governor, on the recommendation of the principal medical officer, approves, a course of study in some special branch of medical or surgical practice (e.g., ophthalmology, dentistry, dermatology, genito-urinary diseases, &c.), or an advanced course at the London or Liverpool School of Tropical Medicine. As regards the application of these arrangements to existing officers, the subcommittee was of opinion that in making its recommendations as to which officers of upwards of five years' standing should be placed on the new scale, the principal medical officers should not take into consideration the question whether the officer has already taken a course of post-graduate study of any kind. All medical officers so recommended should be required to take the approved course or a substitute for that course, or, should they claim exemption, to satisfy the Secretary of State that they have already taken such a course of study. The recommendations of the subcommittee seem thoroughly wise to us. They lay proper stress on the necessity for the officers of the West African Medical Staff keeping abreast of scientific knowledge, general and special, while they are sufficiently elastic.

DYED EASTER EGGS.

THE custom of colouring eggs at Easter-time is innocent enough, but some discrimination needs to be made in regard to the choice of a dye for the purpose. It is true that the tinctorial power of aniline dyes is very intense and that therefore even a highly coloured egg would contain a very infinitesimal quantity of colouring substance, but we have known the dye to permeate the shell and to saturate the real egg substance. This might well happen, since in order to colour eggs they are immersed for some time in a bath containing a hot solution of the dye. As long as there is any doubt as to the innocuousness of the colouring agent the eggs should certainly not be eaten. Amongst the dyes used for the purpose are (1) vesuvin or Bismarck brown; (2) fuchsine (violet-red); (3) eosin (red); (4) methyl violet; (5) naphthol yellow; (6) azo-orange; (7) naphthol green; (8) methylene blue; (9) saffron substitute (yellow); and (10) safranin (pink). Of these Nos. 5, 8, 9, and 10 have been shown to be poisonous, and therefore their use should be forbidden. There is really no excuse for using harmful colouring substances in foods, since there is nowadays such a wide choice of perfectly harmless materials for the purpose. Still, injurious materials may be used in ignorance of their actual nature, and some of them we have seen actually recommended in trade manuals.

IRISH URBAN MORTALITY IN 1909.

THE marked excess of mortality in Irish towns, compared with that which prevails in the largest towns in England and Wales, implies serious defect of sanitary condition and of sanitary organisation and administration. In the 22 town districts of Ireland, for which the Registrar-General publishes weekly returns of vital statistics, with an aggregate enumerated population of 1,142,308, the crude death-rate during the 52 weeks of last year was equal to 19·2 per 1000, whereas in the 76 largest English towns the crude rate during the same period did not exceed 14·7. Thus the rate of mortality in the Irish towns last year exceeded that in the English towns by 30·6 per cent.; or, stated in another way, in equal numbers living, 131 deaths occurred in the Irish towns to each 100 deaths occurring in the English towns. It is true that the age-constitution of the Irish population implies a higher death-rate than that of the English population, owing to the high rate of emigration from Ireland of young adults, among whom a low death-rate naturally prevails. The effect of this abnormality of age-constitution in the Irish population is, however, probably less marked in town than in rural populations, and therefore cannot account for any considerable proportion of the excess of the death-rate in Irish towns. In the comparison, moreover, of the mortality statistics of the 22 Irish town districts with those of the 76 English towns, it must be borne in mind that while the population of the Irish towns averaged only 52,000, the average population in the English towns was 216,000; and further, that the population of 16 of the 22 Irish towns ranged between 7588 and 13,426, whereas the smallest of the English towns had a population exceeding 50,000. The death-rate last year among the 22 Irish towns was equal to 20·9 per 1000 in Dublin (against 14·2 in London), 18·2 in Belfast, 22·1 in Cork, 17·2 in Londonderry, 16·7 in Limerick, and 19·1 in Waterford; while in the 16 smallest town districts the mean rate was equal to 17·7 per 1000. It is noticeable that the rate of mortality from the principal epidemic diseases last year in the 22 Irish towns did not exceed 1·4 per 1000, and corresponded with the rate from the same diseases in the 76 English towns. The death-rate, however, referred to "fever" (principally enteric), which affords a reliable test of sanitary condition and of the effectiveness of sanitary administration, was equal to 121 per 1,000,000 in the Irish towns, whereas it did not exceed 58 per 1,000,000 in the 76 English towns. Infant mortality, which in the whole of Ireland has long been considerably below the rate prevailing in England and Wales, shows a marked excess in the Irish towns. In the 22 town districts of Ireland the deaths of infants under one year of age during last year was equal to 132 per 1000 births registered, whereas in the 76 English towns it did not exceed 118 per 1000. In Dublin the death-rate of infants was equal to 141 per 1000, and in the five next largest Irish towns it averaged 134; in the 16 smallest town districts the mean rate of infant mortality was equal to 105 per 1000. These mortality statistics point conclusively to the unsatisfactory sanitary condition of the Irish towns, and suggest the necessity for the greater activity of the local sanitary authorities. It is, however, an unfortunate fact that the death-rate in Ireland has been practically stationary in recent years, while the recorded rate of mortality in England and Wales has shown a steady and continuous decline.

SPIRIT OF NITROUS ETHER IN MIXTURES.

SWEET spirit of nitre is a frequent source of trouble in dispensing, and when anything goes wrong with an apparently simple mixture containing it, it is quite usual, and often quite proper, to put the blame on this ingredient. A correspondent recently asked why it is that an emulsion containing almond mixture, tincture of squill, ipecacuanha wine, and sweet spirit of nitre "sometimes blows up," and almost from force of habit we look for the explanation to the spirit of nitrous ether. The emulsion contains only 1 drachm of the last-named ingredient in 10 ounces, so that under ordinary conditions an explosion would not be expected. It is not improbable, however, that there is something wrong with the almond mixture. This is made from compound powder of almonds which contains about 8 per cent. of gum acacia; some Australian gums contain tannin, and if the gum used in the preparation of the compound powder of almonds is Australian gum, the explanation of the explosion is not difficult. Tannin is incompatible with sweet spirit of nitre, the effect of mixing the two being to decompose the ethyl nitrite, while oxides of nitrogen are evolved. The reaction in the present case would be slow, as the amount of tannin present would be small, and sufficient gas to burst the bottle would not be given off before the bottle had been corked for some little time. Gum acacia containing tannin should not be used in medicine, but since there appears to be no other explanation of the explosion, our correspondent should examine the gum with which the almond mixture is made. Sweet spirit of nitre is so commonly prescribed as a diuretic and diaphoretic that a few notes about its incompatibilities may be useful. Its keeping properties are notoriously bad, and unless great precautions are observed in storing it decomposition takes place rapidly; to avoid loss of strength as much as possible it should be kept in a cool, dark place in small, stoppered, amber-coloured bottles. For reasons already stated, sweet spirit of nitre should not be prescribed with any drug containing tannin, but its unsatisfactory behaviour with several other drugs is due to the fact that it is extremely difficult, if not altogether impracticable, to prevent it from becoming acid. It should not be prescribed in a mixture with iodides, otherwise iodine will be liberated; if, however, the spirit is neutralised with bicarbonate of soda before being mixed with the iodide solution the reaction is retarded, but nevertheless it is advisable to avoid such combinations. Nor should sweet spirit of nitre be prescribed with antipyrin, a solution of which it turns green. When sweet nitre is added to a solution of sodium salicylate the mixture soon becomes red, even if the spirit is rendered neutral before adding it to the solution. It is a safe rule not to prescribe sweet spirit of nitre in combination with iodides, bromides, antipyrin, or sodium salicylate, or with drugs or preparations of drugs containing tannin.

THE DIFFICULTIES OF DISPENSING.

A VALUED German correspondent writes: "The question of what a dispenser should do in the presence of a prescription calling for an unusually large dose of some drug, to which you have recently referred,[1] is one well worthy of the attention of the medical and pharmaceutical professions. An opportunity may present itself at no distant date to place this somewhat delicate question on a firm basis by including some definite rules for the guidance of prescriber and dispenser in the next issue of the British Pharmacopœia, for, curiously enough, Great Britain figures among the small number of countries which have taken no steps to settle this matter." He adds interesting particulars of proceedings in different countries in face of the difficulty. From these it seems that in many European countries, and also in Japan, the whole subject is regulated by certain rules, incorporated in the national Pharmacopœia, and designed to obviate any doubt as to the course to be pursued in certain circumstances. This is effected by indicating to every heroic preparation or drug the amount regarded by the medical compilers of that work as the largest therapeutic dose to be administered in ordinary circumstances; in most instances not only is the "maximum dose," as it is called, stated for a single administration, but also the total amount which may be administered within a period of 24 hours. Should the prescriber wish to order a larger dose than the amount officially recognised, he must indicate that this is his intention by adding a point of exclamation (!) after the dose, in which case the responsibility rests entirely with him. In a considerable number of countries special provisions decide the course to be adopted by the dispenser in the event of receiving a prescription in which the maximum dose is overstepped. Thus in Belgium, if the higher dose is not underlined or followed by a point of exclamation, the dispenser is enjoined to communicate with the prescriber, and if this is not possible he is to reduce the dose to the amount given in the table of maximum doses and inform the physician accordingly. In the case of prescriptions for children the doses have to be diminished in proportion to the child's age. The Italian law requires that in prescribing heroic drugs the quantities should be written out in full in words, and should the dose appear dangerous or non-therapeutic the prescriber must indicate on the prescription that its administration is to take place at his own responsibility and must mention the use for which it is intended. The laws of several of the German States contain very explicit statements regarding the treatment of doubtful prescriptions. Generally if the prescriber oversteps the maximum dose, and cannot be communicated with in time, the pharmacist has to reduce the amount prescribed to within the limits of the maximum doses, and later inform the prescriber. If the dispenser have reason to believe that a mistake has been made in a prescription, when the prescriber can be reached he is to discuss the matter with the latter, or to inform him of his doubts by means of a private letter. If the prescriber insists upon the dispensing of his unusual prescription to the letter the pharmacist is to inform a Government officer of the facts. Illegible prescriptions may not be dispensed. It must not be forgotten that in Germany a very strict supervision by the State is usual in most relations of life. The French Codex of 1908 includes a table of therapeutic doses, but it is distinctly stated that the amounts given are merely of an informatory character and not intended to limit the prescriber's liberty or discretion. Should he, however, wish to overstep these amounts he should indicate that this is done intentionally by adding the words, "Je dis." The following amounts are taken by our correspondent from the tables of maximum doses of some of the more recent pharmacopœias, and are interesting inasmuch as they reflect the conception of the safe therapeutic dose held by the medical profession of the countries given. "The first amount gives the single, the second the total, dose within 24 hours (in grains).

—	France (1908).	Hungary (1909).	Japan (1907).	Switzerland (1907).
Caffein	gr. 8 -30	gr. 5 -15	gr. 8 -24	gr. 8 -24
Cocain hydrochl.	,, ¾- 2½	,, ½- 2½	,, ¾- 2½	,, ½- 1
Morphin. hydrochl.	,, ⅓- 1¼	,, ½- 1½	,, ½- 1½	,, ½- 1½
Opium	,, 3 - 9	,, 2½- 8	,, 2½- 8	,, 2½- 8
Tinct. opii	m.33 -100	m.25 - 85	m. 25-85	m. 25-85

In many cases the above doses do not only refer to the administration of the drug per os, but, for instance in Switzerland, to their application by hypodermic injection, in the form of suppositories and also in lavages, and maximum doses are also given for the percutaneous application of guaiacol, creosote, and methyl salicylate. Holland includes injections into the uro-genital apparatus as coming within their range of applicability, and Belgium their administration per rectum." It will be seen from the interesting information which our correspondent has brought together that the aim in every country is to multiply responsibility in deciding about so important a matter as a prescription calling for potent drugs.

DISINFECTION OF THE SKIN BY MEANS OF IODISED CHLOROFORM.

Le Monde Médical for January contains a useful account of the method of disinfecting the skin with a solution of iodine in chloroform, as first proposed by Dr. Chassevant in 1906. The use of tincture of iodine for the purpose of disinfecting the skin before surgical operations tends to become more and more general. In using an alcoholic solution of iodine, however, care must be taken not to use a tincture of greater strength than the B.P. tincture, on account of the liability to produce a necrosive action. The tincture should be freshly made and should not contain free hydriodic acid, which might cause considerable pain. Even when recently prepared the tincture always causes a more or less extensive necrosis of the epidermis, followed by desquamation. A solution of iodine in chloroform, on the other hand, possesses the antiseptic and revulsive properties of iodine to the full, without causing pain, sloughing, or sclerosis of the epidermis. When used for disinfecting the skin before making hypodermic or intravenous injections it possesses the additional advantage of rendering the puncture painless, the chloroform acting as a local anæsthetic. Dr. Chassevant employs a 1 in 15 solution of iodine in chloroform. The solution is absolutely stable, remaining good indefinitely, provided a rubber cap is kept over the stopper to prevent evaporation. In disinfecting the skin with this iodised chloroform the area is first rubbed with a plug of cotton-wool, because it is indispensable that the skin be perfectly dry. The iodised chloroform is then applied with a feather or a camel's-hair brush, after which the excess of iodine is removed with a mop of cotton-wool dipped in chloroform. When the iodine is applied in this way the skin remains smooth and does not desquamate.

---

[1] THE LANCET, Jan. 29th, 1910, p. 311.

THE SCIENTIFIC AND SURGICAL INSTRUMENTS SECTION OF THE APPROACHING JAPAN-BRITISH EXHIBITION.

As chairman of the Scientific and Surgical Instruments Committee of the approaching Japan-British Exhibition at the White City, Sir Henry Morris has issued a circular letter appealing to all British makers of instruments that come within the scope of the committee's schedule "to give such coöperation and to make such a display of their productions as shall be worthy of so great an opportunity, in order that our nation may be adequately and honourably represented," since "the Japanese are entering upon the enterpise of this exhibition with the energy and thoroughness which are characteristic of their nation, and from their point of view success is assured." We have great pleasure in giving publicity to this appeal, and seeing what a standard of perfection has been reached by British instrument-makers we have no doubt that they will make such a display as will compare favourably with anything that their Eastern competitors can show. We may add that the committee which issues this appeal is a strong one and adequately representative of the various medical and allied sciences. All inquiries may be addressed to the secretary of the committee at Shepherd's Bush.

THE FUTURE OF VOLUNTARY HOSPITALS.

The financial situation of the Newcastle Infirmary as revealed by the house committee in the annual report, and many of the remarks and criticisms made at the recent annual meeting of the governors, will cause reflections as to what may be the outcome of the present-day manner of raising money for public institutions. It was instanced that there were 200 firms in the district which did not contribute to the infirmary, but that in each of these cases their workmen were contributors; there were 61 colliery firms in like case whose workmen contributed largely and constantly; while, again, there were a few firms which supplemented by an equal amount the sum contributed by their men. A question was asked by a representative of the Northumberland Miners' Association whether any idea could be given of the percentage of cases from non-contributing areas, and in answer it was stated that the subscriptions committee was quite cognisant of the fact that cases came largely from non-contributing areas, and often cases from contributing areas were compelled to wait for weeks for admission in consequence. It is impossible to deny that, other things being equal, the patient from a subscribing area would appear to have a better claim to admission than the one from a non-contributing source, but if this principle be fully enforced its conclusion will be dangerous, and the primary object of the original endowers of the infirmary—"to help the sick and lame poor"—may be ignored in favour of a system which to the uninitiated would appear to be somewhat like that of a provident institution. The large increase in the number of patients attending the Newcastle Infirmary, coupled with the large sum raised by the working men of the district (£16,000 in the past year), must raise speculation as to the future of voluntary hospitals in the minds of the outsider, the ratepayer, and the medical practitioner.

URGENT DYSPNŒA IN CHILDREN DUE TO TUBERCULOUS MEDIASTINITIS.

In *Guy's Hospital Gazette* for February Dr. H. C. C. Mann has reported two cases of paroxysmal dyspnœa in children due to a cause which does not appear to have been previously recognised—tuberculous mediastinitis. In the first case a boy, aged 8 years, was taken to the Evelina Hospital on July 8th, 1907. For two years he had suffered from bronchitis. At the end of May he began to waste and to be liable to attacks of nocturnal dyspnœa. At first they were slight and were accompanied by cough and a little expectoration; lately they had been accompanied by congestion of the face and stridulous breathing. On examination impaired entry of air into the upper lobe of the right lung with many moist sounds was found, and fibrosis of the lung with some local bronchiectasis was suspected. On the 25th the attacks had become more severe and were accompanied by pain in the chest. There were deficient movement of the upper part of the right chest, deficient entry of air, and slight stridor heard all over the right side. The first and second intercostal spaces near the sternum were dull on the right side, and to a less degree on the left. The upper part of the sternum was also dull. The neck was swollen and enlarged veins were seen in its lower part and over the clavicles. The episternal notch was obliterated and the thyroid gland seemed somewhat enlarged. Examination of the larynx showed nothing abnormal. When the head was flexed towards the sternum the stridor was much increased and the child complained of pain. Below the right angle of the jaw were one or two enlarged glands. There were no signs of retropharyngeal abscess. In consequence of the rapid increase in the severity of the symptoms, mediastinal growth, probably originating in the thymus, was diagnosed. Examination with the X rays showed diminished trans-radiancy of the upper chest. In the next fortnight the symptoms increased: the face was very œdematous, the superficial veins were tortuous and enlarged, the attacks of dyspnœa were very urgent, and the pain was severe. The breathing stopped twice, and the house surgeon was about to perform tracheotomy, but the child recovered. The temperature rose in the evening to 101° F. On August 24th the gait was noticed to be peculiar; the knee-jerks were brisk and there was ankle clonus on the right side. The attacks of dyspnœa became less urgent. On August 30th the child first complained of pain in the back and tenderness was found over the last cervical and first two dorsal vertebræ. At the end of September there was kyphosis involving the last cervical and upper three dorsal vertebræ. The child was kept on his back for four months, and then fitted with a poroplastic jacket and jury-mast. Stridor was heard on both sides of the chest as late as May, 1908. The jacket was worn until July, 1909. All signs of active disease disappeared. In the second case a boy, aged 3 years, was admitted into Guy's Hospital for attacks of urgent dyspnœa. He was sent from the Brook Fever Hospital, to which he was admitted in August with diphtheria. Soon afterwards he developed whooping-cough, and on

Sept. 23rd scarlet fever followed. He recovered, but in November he suffered from pain in the back, which was soon followed by paraplegia. On Nov. 22nd there was an attack of dyspnœa with stridor and costal recession lasting half an hour, but the voice was quite clear, and nothing could be seen in the throat. In the five days before admission to Guy's Hospital the respiration became more laboured and there were four attacks of urgent dyspnœa. The respiration during the intervals was of a "wheezy" type. On Nov. 28th he was seen recovering from an attack of dyspnœa, the third since his admission. The superficial cervical veins were engorged, the face was pale and œdematous, and the lips were cyanosed. The lower three intercostal spaces were sucked in during inspiration, and loud stridor was heard all over the chest. The upper part of the sternum was dull, and the percussion note was impaired over the upper two intercostal spaces near the sternum. The knee-jerks were absent, the lower limbs were paralysed, and sensation was lost below the umbilicus. During the next 18 hours further attacks of dyspnœa occurred, and after one the respiration stopped. Tracheotomy was performed and a catheter was passed down into the bronchus without effect. The necropsy showed miliary tubercles in the spleen and liver, and a few tuberculous ulcers in the small bowel. The trachea was flattened and pushed forwards by a large mediastinal abscess The second, third, and fourth dorsal vertebræ were carious.

THE LATE MISS ISLA STEWART.

BY the death of the matron of St. Bartholomew's the hospital world has sustained a great loss. Trained at St. Thomas's Hospital, where she held the post of sister for five years, Miss Isla Stewart was appointed in 1885 matron of the small-pox camp at Darenth during an epidemic which left her in charge of a thousand patients. She subsequently spent a year at the Homerton Fever Hospital, and her fine administrative qualities obtained for her the post of matron and superintendent of nursing at St. Bartholomew's Hospital in 1887. At a banquet given in her honour and to celebrate the twenty-first anniversary of this appointment, Mr. Harrison Cripps, recalling his earlier days as a student at the hospital, gave some interesting reminiscences which showed forcibly the enormous change in the wards and the character of the nursing which Miss Stewart had effected. He was by no means the only one who testified to her influence on progressive measures, for she won the respect and gratitude of the medical and surgical staff by her quick comprehension of their requirements, and her ready assistance in carrying out any new methods of treatment. Her influence extended far beyond her own hospital walls, and as the result of a visit of French medical men to our hospitals she was asked by the Assistance Publique in Paris to receive a group of French nurses to be instructed in methods of English nursing at St. Bartholomew's. The Assistance Publique also presented her with a special medal of honour in recognition of her public work for the nursing profession. She was president of the Society for the State Registration of Nurses, a member of the nursing board of Queen Alexandra's Imperial Military Nursing Service, and principal matron of No. 1 (City of London) Hospital of the Territorial Force Nursing Service, besides holding many other honorary titles in connexion with nursing societies. She was buried at her native home of Moffat, in Dumfriesshire, and on the same day a memorial service took place in the Church of St. Bartholomew the Great, the Archdeacon of London officiating, assisted by the vicar and the chaplain of the hospital. Lord Sandhurst, treasurer of the hospital, attended, and a great many of the medical and surgical staff. Other hospital and nursing interests were represented in the persons of Sir Edmund Hay Currie, Sir Frederick Alliston, Sir George Wyatt Truscott, Miss Haldane, Miss Keer, and Miss Becher. The Prince of Wales, who is President of St. Bartholomew's Hospital, requested Lord Sandhurst to convey his sympathy to Miss Stewart's relatives and friends and the authorities of the hospital in the loss which they had sustained.

THE MINORITY REPORT BILL.

Sir Robert Price has drawn the first place in the ballot for the Minority Report Bill, and the Bill, the text of which has now been circulated, is set down for second reading on Friday, April 8th. The Bill, which represents in the main the views of the recent Minority Report on the Poor-law, is backed by Members representing all political parties in England and Scotland.

INSTRUCTION IN DENTAL SURGERY FOR MEDICAL STUDENTS.

A PAPER published last month in *Public Health* by Mr. R D. Pedley on Dental Disease and the Medical Profession raises one or two points worthy of consideration by those interested in medical education. Mr. Pedley, after emphasising the important relationship between teeth and general health, refers to the fact that instruction in diseases of the teeth does not form part of the recognised curriculum for medicine. To this he attributes in a large measure the scant attention given by the average medical practitioner to the teeth as the possible source of many of the troubles he is called upon to diagnose and treat. There is little doubt that a knowledge of dental surgery is essential to the real appreciation of many of the obscure abdominal and other conditions met with, and it would be well in some way to fill this gap in the education of the student. In most of the teaching hospitals courses of lectures on dentistry are given, but the attendance at this is optional, and we believe that few students attend. Mr. Pedley suggests that a good deal might be done in dental departments of the general hospitals by a development of the teaching of clinical dental surgery. He points out, too, that during the last 15 years not a single question in dental caries has been set at the examinations either of the Royal Colleges or of the University of London. It is quite possible that the fear of an occasional question on dental surgery would stimulate the medical student to make a further acquaintance with the relation of dental diseases to the general condition he is called upon to treat in the course of his work.

THE general secretary of the Sixteenth International Medical Congress, which was held at Budapest last September, notifies us that the members of that assembly will receive their copies of the general report during the course of the month of April. In accordance with the terms of the Congress regulations, every member will receive a copy of the general volume as well as of that of the section in which he was inscribed. Besides these publications, a copy of the work on "The Protection of Child-life in Hungary" will be presented to each member of the Congress by the Royal Hungarian Minister of the Interior.

IN recognition of valuable services Dr. Augustus William Paterson Murison, of the Deaconesses' Hospital, Cairo, has been permitted by His Majesty the King to accept and wear the Insignia of the Fourth Class of the Order of the Red Eagle, conferred upon him by His Majesty the German Emperor, King of Prussia; and Dr. Edwin Robert Wheeler, formerly medical adviser to the Kanagawa Prefecture, has been permitted to accept and wear the Order of the Sacred

Treasure of the Third Class conferred upon him by His Majesty the Emperor of Japan.

THE library and offices of the Royal Society of Medicine, which were closed on March 15th for the purpose of packing and removal to its temporary quarters at 15, Cavendish-square, will be reopened on Monday, April 4th. 20,000 volumes of the books most likely to be wanted have been selected, and the remainder will be stored during the building of the Society's new house, which it is hoped will be ready for occupation early next year.

Professor Robert Kutner, Director of the Empress Frederick's Institute for Medical Education, Berlin, has been appointed an Honorary Commander of the Royal Victorian Order.

THE Governor of Mauritius reported only 1 case of plague during the week ending March 18th.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 24th, 1832.

ADDRESS
TO THE
MEDICAL PROFESSION AND TO THE PUBLIC GENERALLY.

(At the request of the Association, conveyed through the honorary secretaries, Mr. KING and Dr. MORRIS, the following document is introduced into our pages.—ED. L.)

THE present alarm respecting the disease which is now said to exist in London and its vicinity under the name of cholera, is maintained by some to be unfounded or exaggerated; while by others it is asserted that this alarm is neither without cause, nor disproportionate to the danger. Whence such diversity of opinion may have originated, has not been ascertained, nor has it been discovered whether there is any reasonable cause for the prevalence of opinions so opposed.

This unsettled state of the public mind has been productive of consequences the most pernicious. Our national relations have been injured; our internal prosperity has been shaken. The medical profession have been aspersed by one party, as encouraging panic without cause; and by another, as concealing from the public eye the real nature and the full extent of the disease.

To clear the character of the medical faculty of these aspersions by inquiring into the actual causes of this general alarm, and to reconcile these conflicting opinions, a medical association has been formed, to investigate the nature, modes of propagation, extent and treatment of that disease, and lay candidly before the public the results of its inquiries. As this Association belongs to no exclusive party, it advocates no exclusive views. The practitioners of whom it is composed espouse no theory; they support no faction: their bond of union is the public good: their common object is the cause of truth. Their interests are promoted neither by encouraging excitement, nor by resisting just alarm. If the disease known under the name of cholera exist in London, their object is to ascertain its extent, to elucidate its causes, to explain its management, and to restore the tranquility of the public, by an honest statement of the truth.

An Association formed with motives so pure, and an object so important, can have no enemies but those of science and of mankind. They, therefore, look to the public for countenance, and to the profession for assistance. They more especially solicit the co-operation of the medical officers of parishes and guardians of the poor. As they intend no opposition, they anticipate no resistance. In the truest spirit of philanthropy have they been organised, and with the most rigid respect to truth and candour will all their labours be conducted. They feel that the principles which they follow can lead them only to truth, and they are persuaded that the plan upon which these principles shall proceed, can scarcely fail to ensure ultimate success.

The proceedings of the Association shall at all times be open to inspection; the register* for the admission of members is now prepared for signatures; and while they express the most friendly feeling towards such as may decline to join them, the Association earnestly solicit and confidently hope for the speedy co-operation of all who are zealously attached to the interests of medical science, and wish sincerely to promote the welfare of the human species.

LEONARD STEWART, M.D.,
Chairman.

---

* At the house of Dr. Morris, 17, Southampton Street, Strand.

THE ANTI-TUBERCULOSIS CAMPAIGN IN LONDON.[1]

By D. J. WILLIAMSON, M.D. EDIN.,
MEDICAL OFFICER OF THE PADDINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION; FORMERLY RESIDENT PHYSICIAN, ROYAL VICTORIA HOSPITAL FOR CONSUMPTION, AND ASSISTANT MEDICAL OFFICER, VICTORIA DISPENSARY FOR CONSUMPTION, EDINBURGH.

THERE has, I think, been a gradual change noticeable of late years in the mental attitude of the public generally towards the anti-tuberculosis campaign.

Formerly the ravages of the disease were regarded with a certain degree of fatalism, for while the public applauded and sympathised with the efforts of the medical faculty to cope with the problem, it never realised the possibility of stamping out the disease entirely. Money was generally forthcoming for the erection of sanatoriums or the maintenance of hospital out-patient departments, but it was felt, and to a certain extent rightly, that the patients treated at these institutions constituted merely a drop in the ocean, and that tuberculosis would continue to take its annual toll of the race until such time as a specific remedy should be discovered. No specific remedy, however, has been discovered, except fresh air and sunlight, and yet we find that the mortality from this disease has been in this country reduced by 50 per cent. during the last 40 odd years.

Moreover, our experience in the control of other infectious diseases has shown us that there is a surer method of exterminating a disease than by finding a specific remedy for it, and that is by prevention. In fact, it is now known to be due to our unconscious efforts at prevention, seen in our more cleanly habits, our improved hygienic conditions, our care of the nation's children, and our factory and workshop legislation, that we chiefly owe the reduction of the mortality from tuberculosis which has already taken place. Statisticians tell us that at the present rate of fall in the death-rate tuberculosis will be practically extinct in a generation, and will become merely historical in 50 years. We are within sight of the end; the disease is, so to speak, on its last legs, and the public are seeking to coöperate with the medical profession in this last great fight which will rid the nation for ever of a disease which causes so much suffering, misery, and poverty. On all sides one finds people anxiously making inquiries as to the best plan of attack to pursue in their district. Many plans are and will be proposed, many of them too hastily conceived and too much on theoretical grounds; hence many of them will be doomed to failure. I have been asked to describe to you to-day a plan of attack suitable for your district, a plan which was conceived 23 years ago, has gradually evolved and developed during all these years, and has emerged successfully at the end. It is a plan of attack which has been copied, in some cases consciously, in other cases unconsciously, in some instances exactly, in others in a more or less modified form, in most of the great countries of the civilised world—in Germany, France, Belgium, Holland, Austria, the United States, and Canada, and more recently still in London.

Englishmen are noted for their habit of allowing foreign countries to experiment with, and develop, any new scheme before adopting it themselves. Here, then, is a scheme with nothing novel or uncertain about it, which was in reality British in origin, but which has been developed to an enormous extent in three such countries as Germany, France, and the United States, and which is now, on the eve of the last great fight against tuberculosis, the most tried and trusty weapon which London can possess with which to rid itself of the disease in the course of the next generation.

THE PROBLEM OF ERADICATION.

In the attempt to finally eradicate tuberculosis from the community we have two main principles on which to work—i.e.: (1) the prevention of infection of those not yet affected; and (2) the treatment of those already infected. The prevention of infection of those not yet affected is, of course, the most obvious way of completely eradicating the disease. If preventive measures could be successfully and universally carried out it follows that tuberculosis would cease to exist when the last person at present affected died. This dream has been more completely realised of late years than ever before by the education of the people, the inspection and disinfection of their houses, and the isolation of advanced cases. But our preventive measures are sadly inadequate, and it is very important that our energies should be mainly directed along these lines. The treatment of those already infected depends on whether the treatment of cases in any way tends to reduce the mortality from this disease. This is the main question we should ask ourselves. If the answer be in the negative then from a national hygienic point of view the money spent on treatment is a national waste. To answer the question it is first of all necessary to differentiate the different classes and modes of treatment in use. Firstly, we have the treatment of early cases with a view to cure. Secondly, we have the treatment of all but the early cases—that is to say, of the great mass of consumptives—not with a view to cure, the time for that having passed, but with a view to the alleviation of their symptoms and mainly with a view to the prolongation of their lives.

---

[1] A paper read at a meeting of the Battersea Voluntary Health Society, Jan. 26th, 1910.

The result of treatment.—Undoubtedly the treatment of early cases if successful—that is to say, if leading to nothing short of a permanent cure—does tend to reduce the mortality from tuberculosis to a certain extent. But, on the other hand, it cannot be said that the prolongation of the lives of the great mass of consumptives has this desired effect at all. In fact, it probably has the opposite effect—that of increasing the mortality by lengthening the period during which each consumptive is a danger to his neighbours. Thus it is that one occasionally hears it remarked that instead of spending vast sums on the treatment of consumption it would be better if all consumptives could be placed in a lethal chamber as soon as the disease was diagnosed. From a strictly economic and hygienic point of view this might be true.

The proportion of curable to incurable cases.—The proportion of strictly early, and therefore potentially curable, cases, to those who have got beyond this stage, is at a guess 1 in 4; or, in other words, of every five consumptives four have probably got beyond the stage when treatment can be expected to result in absolute permanent cure, leaving 20 per cent. curable. I use the word "consumptives" here to mean such people who may be complaining of one or other of the symptoms of the disease to a slight extent, and who, on consulting a doctor of average ability and experience, would be diagnosed by the aid of physical examination alone to be tuberculous. The total number of such "definite" cases is probably at least five times the annual mortality from this disease. This is the mean of figures quoted by different authorities, which vary from three to 10 times the mortality. Thus in London, where the mortality from consumption in 1908 was 6246, or roughly 6000, there would be 30,000 consumptives living who had reached this stage of "definiteness," of whom, according to the preceding estimate, 20 per cent., or some 6000, are curable, and 24,000 incurable.

The search for early cases.—It must, however, be realised that by the time the tubercle bacillus has caused sufficient tissue reaction and changes in the lungs for its presence to be diagnosed clinically, with anything like certainty, by even a specialist, the disease must be considered as already somewhat advanced. It is therefore probable that the total number of persons in whose lungs the tubercle bacillus has found a lodgment and is developing is quite 10 if not 20 times that of the annual mortality. And this is more than borne out by the result of post-mortem examinations. Thus Hughes Bennett found healed tubercle in the lungs of from one-third to one-half of all the individuals who die after the age of 40 (Newsholme). "The observations of Rogée and Boudet, made at the Salpêtrière Hospital in Paris, amongst individuals generally above the age of 70, showed the proportion in such persons to be respectively one-half and four-fifths" (Newsholme).

Let us, however, take the lower estimate of ten times the annual mortality as representing the total number of persons in whose lungs there are foci of potentially active tuberculosis, as this lower figure will serve our purpose sufficiently. Thus in London, where the mortality is 6000, we have at least 60,000 such persons, of whom we have just estimated that 24,000 are incurable. This leaves 36,000 people who are curable if treated at once. Some of these, no doubt, as shown by post-mortem observations, would if left alone become spontaneously cured without ever knowing they had had the disease. But others of them will go on to the more advanced stages and many of them will die from consumption. Again, there is no saying whether some of those who become cured or who die from other causes, and who never know they have the disease—whether some of these may not at one or other period of their career be infectious to others. I believe that such is often the case. It is therefore essential if, as I repeat, our aim is to stamp out tuberculosis entirely to discover these early cases and put them under suitable treatment before it is too late.

The examination of "contacts."—Of these 36,000 curable cases we have seen that only 6000 are sufficiently advanced for the disease to show itself by characteristic symptoms and physical signs. Are the remaining 30,000 to be left alone until such time as the fatal symptoms begin to show themselves? If the anti-tuberculosis campaign means the organised effort and endeavour to entirely eradicate the disease, then it is imperative that we should search out these 30,000 persons and put them under treatment or surveillance. But it may well be asked, "How are they to be found if they complain of no symptoms and if their physical signs are so indefinite?"

Experience teaches us that with only a few exceptions tuberculosis is a domestic disease, and that in the great majority of cases infection takes place in the home. That means that a great majority of these 30,000 infected persons will be found amongst the relatives of the more definitely consumptive cases. Hence the great importance: (1) Of examining all the relatives of every patient known to have the disease; (2) of looking with suspicion on the most indefinite physical signs if they occur in a person related to a consumptive patient; and (3) of treating such person as a consumptive at once, without waiting for more definite physical signs to appear.

Contact cases among children.—The section of the community to which these remarks apply with particular force is that of the children, especially those of about school age, and it is in the examination of these persons for signs of tuberculosis that the greatest difficulty will be experienced.

It is acknowledged on all sides that, though phthisis as a fatal disease and as a well-marked clinical condition is rare at this age, the amount of latent pulmonary tuberculosis must be extremely high. This must be so from the remarkable increase in the death-rate from phthisis which occurs during adolescence and, as a matter of fact, begins to show itself towards the latter end of the school age, especially among girls. For, as I have remarked before, the sources of infection do not become indefinitely multiplied after leaving school, as would have to be the case if we denied the existence of this large amount of latent disease in childhood.

The real difficulty in the detection of the disease during school age lies in the fact that there is no definite knowledge, or rather consensus of opinion, as to what constitute the diagnostic signs of latent disease. The difficulty is added to by the fact that certain physical signs might equally well be those of latent pulmonary tuberculosis or of certain simple physiological conditions, and we are asked to give every child showing such signs the "benefit of the doubt" and to await the development of signs which cannot be mistaken for anything else before pronouncing the case to be one of pulmonary tuberculosis. At present every observer is more or less of a rule unto himself, and until the great importance of discovering these cases in the incipient and latent stages is more fully realised we are unlikely to arrive at a more definite decision as to what constitute the signs of the disease in this latent condition. In my opinion, if diagnosis is to be followed by rational treatment one is more likely to be giving the child the benefit of the doubt by accepting such ambiguous signs as diagnostic of tuberculous disease than by rejecting them, even if in a certain proportion of cases we are mistaken in doing so.

The dispensary ideal with regard to "contacts."—We have seen that there are probably some 30,000 "definite" consumptives living in London to-day. Suppose each of them to belong to a family consisting of, on an average, five persons. Then I say what we want in London is not so much an organisation for the treatment of these 30,000 "definite" cases (of whom 24,000 are, as we have seen, probably incurable), but a very complete organisation, at present not in existence (except at Paddington), for the examination of the 150,000 or so apparently healthy people who are related to those 30,000 consumptives, in order to find the very early, and possibly only suspected "contact" cases, and, further, to carry out such measures as will safeguard such early cases when found from any further development of the disease.

PREVENTIVE TREATMENT.

The idea of "treatment" is unfortunately associated with drugs in the public mind, but the phrase "to put under treatment" should, I think, convey three separate ideas.

1. First of all, there is the old form of treatment—namely, by the administration of various drugs. This is nowadays practically confined to the treatment of the more advanced cases—that is to say, those who have got beyond the curable stage—and is the form of treatment universally carried on by the *out-patient departments* of our great hospitals (both "chest" hospitals and general hospitals). It is useful for the amelioration of such symptoms as cough and hæmoptysis, but is valueless in the attempt to eradicate tuberculosis from the community.

2. Secondly, there is the more modern treatment carried out at all our up-to-date *sanatoriums*. This consists mainly in supplying the patient with an abundance of fresh air, good food, and carefully graduated employment. The class of patient suitable for this treatment is the "definite" but still curable case. In proportion as this treatment is successful—that is to say, its main object is attained, namely, the permanent cure of such patients—it becomes valuable in its power to assist the final eradication of the disease.

3. Thirdly, there is that form of treatment which should be applied to those indefinite but suspected cases chiefly found in the families of those known to be suffering from the disease. This consists in building up the suspected person's strength, increasing his individual resistance, and if possible safeguarding him from the risk of further infection. This form of treatment can only be successfully carried out by the *tuberculosis dispensaries*, for it needs the personal supervision of the home conditions by the doctor attending the case.

The large number of such suspected cases and the indefinite character of the diagnosis render it impossible to remove them from their homes or to send them to sanatoriums. It is therefore necessary to carry out this form of treatment in the homes themselves. This must be distinguished from what is commonly called "home treatment," which generally means the mere supplying of medicines to patients living at home and attending the out-patient department of a hospital. The dispensary treatment, which may be called "preventive treatment," has no necessary relationship to the giving of medicine.

The wide scope of preventive treatment.—Such treatment as that indicated in the last paragraph sounds simple, but it is in reality far more difficult than either of the other two. It needs not only the skill and science of physician, but the close coöperation of the philanthropist, the social worker, and all charitable societies and institutions engaged in the improvement of the social welfare of London's poor. The improvement of the dwellings, the teaching of domestic economy and cookery, the inculcation of thrifty, sober, and cleanly habits, the care, nourishment, and education of children, and the finding of suitable employments for the breadwinners, are some of the problems concerned. It may be said that these are merely the problems of prevention. That is so, with this difference, that the treatment of these suspected cases consists in our application of the general methods of prevention, not at random, but to certain definite houses, and to certain definite people in those houses whom we suspect of being already infected, and with this further advantage that the control of these preventive measures is centred in the medical man in attendance and constitutes his "treatment," the patient being kept under his surveillance permanently and examined by him from time to time to see that the disease is making no headway. Thus, as Dr. Arthur Newsholme says, when speaking of the advantages of notification, the patient is converted from a focus of infection into a focus of prevention.

Result of preventive treatment.—What of the result of this form of treatment? We have seen that the result of drug treatment at the out-patient departments, however successful, is valueless from our point of view—i.e., the eradication of tuberculosis; that the result of sanatorium treatment of the definite but curable cases, however successful, is of *relatively* little value to the community; but the result of this searching out of suspected cases by the examination of "contacts" and the application to them of this preventive treatment, if thoroughly carried out and successful, would practically be the stamping out of the disease.

THE TUBERCULOSIS DISPENSARY: WHAT IT IS.

It would be well here to discuss rather more fully the functions of a tuberculosis dispensary such as the Victoria Dispensary, Edinburgh, or the Paddington Dispensary for the Prevention of Consumption, London. It is surprising how little these functions are understood by the general public or even by the members of the medical profession. Thus, many people think of a dispensary merely as a modified out-patient department of a hospital, but without the hospital beds; others think of it as a means of depriving the struggling general practitioner of his bread and butter; and, finally, a common error is to think of the dispensary as an isolated institution, a means in itself of dealing with the tuberculosis problem, offering a rival method of treatment to that carried out at sanatoriums. All these ideas are entirely wrong, and if those holding them would take the trouble to visit a dispensary or to make inquiries as to what are its functions and methods they would soon be undeceived.

Firstly, then, the dispensary does not pretend to be a complete means in itself of dealing with all aspects of the problem, nor does it offer any rival method of treatment to that carried out at a sanatorium. What is claimed for the dispensary is that it forms an essential link in, and in fact the fundamental basis of, any complete anti-tuberculosis organisation for a given district. Secondly, it has very little in common with an out-patient department. Thirdly, in no way does it prejudice the interests of the general practitioners or of provident and other dispensaries.

The chief functions of the Tuberculosis Dispensary are the following:—

A. The examination of patients.—It draws its patients from the following sources: 1. Poor people suffering from coughs, &c., unable to afford treatment in the usual way, desirous of examination, advice, and treatment—that is to say, the ordinary class of hospital out-patients. 2. Cases suspected of, or suffering from, consumption sent up by the general hospitals, the private practitioners, Church and social workers, sanitary inspectors, &c., for advice or treatment or both. 3. Contact cases—i.e., those related to, or exposed to, infection from existing tuberculous patients.

B. The sorting out of cases for appropriate treatment.—After examination, and if necessary after a prolonged period of observation, the patients thus received are sorted out as follows:—

1. The non-tuberculous are at once sent on to the general hospitals, or if they can afford treatment to their private doctor.

2. Those already under treatment elsewhere are not dealt with without the sanction of their present medical attendants.

3. The surgical cases of tuberculosis are (if needing treatment) sent to a suitable hospital.

4. The dying or otherwise highly infectious cases are, if living in such surroundings as to be a danger to others, removed, if possible, to a home for the dying, or infirmary.

5. The advanced and bedridden cases, if living in such surroundings as not to be a danger to others, are treated at home.

6. The early phthisical cases are carefully considered with a view to sanatorium treatment and if judged suitable are sent to one or other of these institutions.

7. Those cases in whom the diagnosis of tuberculosis is very doubtful, or those who are considered to be predisposed to the disease, are looked after as described in an earlier part of this paper under the heading of "Preventive Treatment," but should any intercurrent illness occur such as pneumonia or measles, or any gastro-intestinal disturbance, these cases are treated by their family doctor.

8. Delicate children, either phthisical or predisposed, may, if considered advisable, be sent away to the country, either to convalescent homes or sanatoria.

9. Such children may also be put in special open-air schools, where they may continue their education without injury to their health, and at the same time be trained to become healthy and hygienic citizens.

10. The remaining cases—i.e., the bulk of the phthisical patients, too advanced or otherwise unsuitable for sanatorium treatment, and not sufficiently advanced to be sent to infirmaries or homes for the dying—are treated at the dispensary as at an out-patient department, with this difference, that the practitioner in attendance himself visits the homes and endeavours to discover and eradicate the source of infection and those unfavourable conditions which assist in the development of the disease.

C. The supervision of the home conditions.—Both the medical man in attendance and the nurse visit the homes of the patients, the former chiefly with a view to making certain inquiries of use for statistical purposes in relation to overcrowding, poverty, &c., and in order to give advice on the spot as to the best arrangement of rooms, distribution of sleeping accommodation and methods of preventing the spread of the disease, and the latter with a view to the detection of possible sources of infection, and the examination of the other members of the family.

Any insanitary conditions are notified to the public health authorities. The following schedule of inquiries is filled up by the nurse and countersigned by the medical attendant, and it will be seen that not only will the accumulation of such statistics be of great value, but that the treatment of patients based on this knowledge of the home surroundings, pecuniary conditions, hereditary tendencies, and sources of infection, must be more rational and beneficial than the treatment as given at out-patient departments and general dispensaries.

No. in Ledger............ *Date of Report*.......................
Name Age
Address Married or single?
Occupation Has patient changed occupation?
Able to work full time? Or part time?
If unable, confined to bed? How long ill?
Situation of house (area, ground floor, 1st, &c.)?
Character of neighbourhood?
Number and ages of inmates?
Number and description of rooms?
General aspect of house (clean, damp, dusty, smelly)?
Number of windows? Can they open?
Are they kept open (*a*) by day? (*b*) by night?
Have they always been kept open?
Does patient sleep alone (*a*) in bed? (*b*) in room?
How is washing of clothes done?
How long in present house?
If has moved within two years, previous addresses?
Have there been illnesses or deaths in house—
(*a*) In own time? (*b*) In previous occupancy?
Exposed to infection (*a*) at home? (*b*) at work? (*c*) among friends?
Present health of other members of household?
What precaution taken to disinfect?
T.B. in sputum? T.B. in dust room?
General dietary? Teetotal?
General condition (well-to-do, badly off)?
Proximate income of household?
Assisted by societies, Church, friends, rates?
Signed.......................Reporter.
.........................Medical Officer.

D. Coöperation with other agencies.—The dispensary forms the centre for the reception and examination of all classes of patients, and for the sorting out of these different classes of patients with a view to giving them appropriate treatment.

It may here be remarked that there is no "letter system" at the dispensary, so that it is open to all who care to come for examination and advice. It may also be mentioned that each dispensary should strictly confine itself to its own district, and in the event of dispensaries being opened in other districts should coöperate with them by the interchange of patients.

The dispensary should form the centre or nucleus of the whole anti-tuberculosis organisation in a district, the various elements composing such an organisation being linked together through the Dispensary.

The following diagram (Fig. 1) illustrates my meaning, and is an actual representation of the scheme of operations in force at the present moment in Edinburgh. The diagram illustrates the fact that the dispensary works in harmony with the medical officer of health for the district, and that both the dispensary and the medical officer of health have at their service a home for the dying, an infirmary, or other accommodation which can be used for the isolation of those advanced cases who are living under such surroundings as to be a danger to the community. Again, the dispensary has at its service a sanatorium (or, it may be, beds in more than one sanatorium) to which it can send curable cases. In Edinburgh there is also now a working farm colony to which patients who have passed through the sanatorium and are fit for hard work, but for whom an immediate return to town life would be unadvisable, can be sent. Finally, the dispensary, recognising the fact that consumption is a social disease, both dependant on and causing poverty and its associated evils, works in close coöperation with all manner of philanthropic and other bodies engaged in social work—e.g., the Church, the Charity Organisation Society, the Invalid Children's Aid Association, health committees, the Poor-law guardians, &c.

FIG. 1.

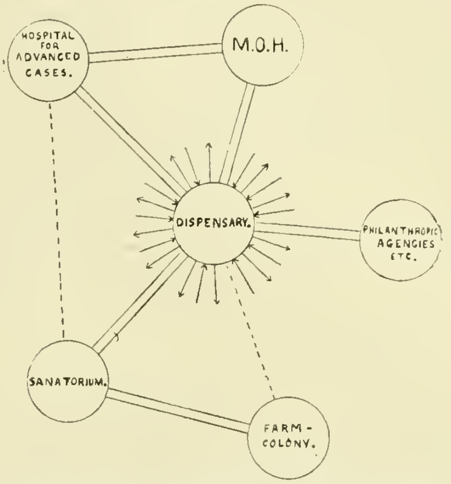


Diagram illustrating the relationship between the dispensary and the other factors in the anti-tuberculosis campaign.

The next diagram (Fig. 2) shows a modification of the same scheme, more especially applicable to the dealing with tuberculous children. The parallel lines as before show the close coöperation which should take place between any two factors of the anti-tuberculosis organisation.

FIG. 2.

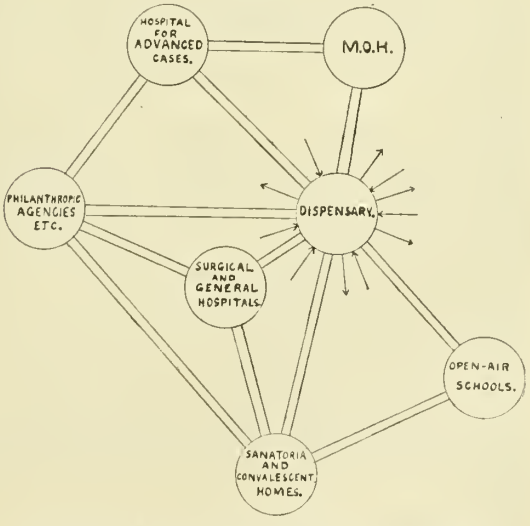

HOSPITAL FOR ADVANCED CASES.
M.O.H.
PHILANTHROPIC AGENCIES ETC.
DISPENSARY.
SURGICAL AND GENERAL HOSPITALS.
OPEN-AIR SCHOOLS.
SANATORIA AND CONVALESCENT HOMES.

Diagram illustrating the organisation of the various factors in the anti-tuberculosis campaign dealing with tuberculosis among children.

A word or two of explanation is needed with reference to the coöperation (1) with the medical officer of health, (2) with the sanatorium, and (3) with the general practitioners.

1. *The medical officer of health.*—In Edinburgh, where compulsory notification has been in force since 1907, all cases attending the dispensary are, of course, notified to the medical officer of health, and it is noteworthy that during the first year of compulsory notification in that city more than half the cases notified were notified by the Victoria Dispensary.

In Paddington, where only voluntary notification is in force, the dispensary has a special arrangement with the medical officer of health whereby the dispensary notifies *all* cases coming under its notice, even notifying as "suspected" those persons in whom the diagnosis is not yet certain. The medical officer of health in his turn does not send his sanitary inspectors to those cases notified by the dispensary, but leaves their supervision entirely in the hands of the medical officer and nurse attached to the dispensary, who, as we have seen, personally visit the homes of all cases. The notification of these cases is thus merely for the purposes of statistics. The dispensary collects (and has exceptional opportunities for collecting) various statistics and information regarding the social conditions of the district in which it is situated. This information is at the service of the medical officer of health or any others who may wish to use it. The medical officer of health undertakes the disinfection of premises after death or removal at the request of the dispensary. The sanitary inspectors, through the notification of Poor-law cases and of deaths, are able to send many suspected contact cases to the dispensary for examination. In this way the dispensary, though an independent voluntary institution, free of official trammels, becomes the most useful instrument in the hands of the medical officer of health for the prevention of disease and the supply of statistics and other information regarding the prevalence and distribution of the disease in his district.

2 *The sanatorium.*—As has already been said, the dispensary does not seek to compete with sanatoriums in the treatment of early cases as is often supposed. It has, however, been proved over and over again that, where sanatorium treatment is not available through lack of funds, or where for one or other reason sanatorium treatment is not to be recommended, with the supervision and improvement of the home conditions as a part of the treatment given at the dispensary, country air and sanatorium treatment are not a *sine quâ non* of improvement and recovery, even in children. There is, further, this advantage: that the education of the patient is more definitely related to his home conditions and that not only the patient but the whole family are at the same time educated. Also the patient thus treated does not suffer the discouragement and disappointment experienced by many sanatorium patients after discharge. Suitable cases are, however, sent to sanatoriums where such measures as constant discipline and graduated labour can be more readily carried out. With regard to the choice of sanatorium patients, the dispensary, by its knowledge of the home conditions, the family history, the prospect of future employment, &c., has exceptional opportunities for selecting only those in whom the benefits derived are likely to be permanent.

Again, with regard to the "after-care" of patients on discharge from sanatoriums, this difficulty is completely met by the dispensary, which takes charge of such patients at once, keeps them under supervision and treatment if necessary, teaches them how to apply the lessons they have learnt to their homes, and, if possible, endeavours to find them suitable employment.

Thus we see that the sanatorium benefits in every way by coöperation with the dispensary, having more selected patients sent to it, and being assured that the beneficial results will not be thrown away by a return of those patients to unsatisfactory home conditions.

3. *The general practitioners.*—It has already been stated that all cases at present under treatment by private practitioners are at once referred back to those practitioners for their sanction to the patients' attendance at the dispensary. The following is the form of letter sent out for this purpose:—

PADDINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.

20, Talbot-road, London, W.......................19............

DEAR SIR,

A patient...presented...self to-day with evidence of..

Ascertaining that .... he had been under your care, I should be glad to know if you have any objection to h................. attending at this Institution.

Yours faithfully,

Medical Officer.

It may here be said that the same rule is strictly observed at Paddington with regard to patients attending various hospitals, but that St. Mary's Hospital, the only large general hospital in the district, is now sending almost all its phthisical patients, with a card from the lady almoner, to the dispensary. The reason for this is that it is realised at this hospital that the conscientious treatment of consumption implies a supervision of the patients' homes, and that this cannot be done by the ordinary out-patient department.

Returning to the general practitioner, it may be said that the class of patients attended by the dispensary cannot afford more than a very occasional sixpence for a bottle of medicine, and that they frequently allow these sixpences to accumulate, and in the end never pay them. So that these patients are no pecuniary loss to the general practitioner. Further, every general practitioner knows that the giving of an occasional bottle of medicine (which itself must contain only the cheapest ingredients) does no good at all, and that he cannot afford the time, and the patient cannot afford to pay him for the time, expended in visiting and attempting to improve the homes.

At the two centres in this country, Edinburgh and Paddington, where such dispensaries are in operation, no complaint has been heard from the general practitioners, but, on the contrary, in both centres many patients are actually sent to the dispensaries by their medical attendants. In some cases patients are actually sent for treatment, in other cases in order that the diagnosis may be corroborated or that the sputum may be examined. It must be realised that the general practitioners of the neighbourhood have thus in their possession a means of obtaining free consultations and the free bacteriological examination of sputum.

Dispensary programme.—The programme of the Victoria Dispensary, Edinburgh, of which the Paddington Dispensary is, as far as possible, an exact reproduction, is as follows:—

1. The reception and examination of patients at the dispensary, the keeping of a record of every case, with an account of the patient's illness, history, surroundings, and present condition, the record being added to on each subsequent visit.
2. The bacteriological examination of expectoration and other discharges.
3. The instruction of patients how to treat themselves, and how to prevent or minimise the risk of infection to others.
4. The dispensing of necessary medicines, sputum bottles, disinfectants, and, where the patient's condition seems to warrant it, foodstuffs and the like.
5. The visitation of patients at their own homes by (1) a qualified medical man; and (2) a specially trained nurse, for the double purpose (*a*) of treatment and (*b*) of investigation into the state of the dwelling and general conditions of life and the risk of infection to others.
6. The selection of more likely patients for hospital treatment, either of early cases for sanatoriums or of late cases for incurable homes, and the supervision, when necessary, of patients after discharge from hospital.
7. The guidance generally of tuberculous patients and their friends and for inquiries from all interested persons on every question concerning tuberculosis.

One slight difference exists in the working of the dispensaries in Edinburgh and Paddington: when the dispensary opened in Paddington the committee passed a resolution that no material assistance should be given to patients except through the local branch of the Charity Organisation Society. This was done in order to avoid the overlapping of charitable relief.

A SHORT SUMMARY OF THE GROWTH OF THE DISPENSARY MOVEMENT.

The dispensary movement, which began in Edinburgh 23 years ago, has now spread over the greater part of Western Europe and North America. The dispensaries started in the different countries, especially the European countries, vary considerably in their methods and functions to suit local conditions, and, of course, are not necessarily imitations of the Victoria Dispensary, Edinburgh. Their main functions, however, are identical in every case, i e., (1) the examination of "contacts" in the search for early cases, and (2) the improvement of the home conditions. The following is a very short summary of this wide movement and says nothing of the dispensaries in Holland, Belgium, and Austria, which are all of recent growth and are mainly on the lines of those in France and Germany.

1882 (1).—*The announcement of Koch's discovery of the tubercle bacillus*, and therefore the definite classification of tuberculosis as a preventable disease.

1882 (2).—Compulsory insurance against sickness inaugurated in Germany.

1887.—*The Victoria Dispensary founded in Edinburgh by Dr. R. W. Philip.* The dispensary thus started in a humble way formed the nucleus of the anti-tuberculosis organisation in that city, which now includes (1) the dispensary; (2) a sanatorium of 100 beds in close relationship to the dispensary; (3) 60 beds for advanced cases set apart in the City Fever Hospital; (4) a working colony for cured cases; and (5) compulsory notification of the disease.

1901.—*The first dispensary opened in France at Lille by Professor Calmette.* In 1905 there were already more than 50 dispensaries in France. The original ones gave no medical treatment but considerable material assistance. Many of the more modern ones have found it necessary to give treatment.

1904 (1).—*The first dispensary opened in Germany at Berlin.* This rapidly grew and in a short time other dispensaries were opened, so that in 1907 there were 5 dispensaries in Berlin with a staff of 7 or 8 doctors and 14 or 15 nurses, and in 1908 there were 175 of these institutions in various towns, besides 534 dispensaries of the Society of Women in Baden, making a grand total, 4 years after the first was opened, of 709 tuberculosis dispensaries in the German Empire.

One word needs to be said here with regard to the German dispensaries. The compulsory insurance system started in 1882 had led to the rapid growth of an enormous number of sanatoriums and other institutions, and had also resulted in facilitating the treatment of patients at these institutions, all worry and anxiety over pecuniary matters being thus removed from the patients' minds. But one thing was necessary still, and that was to find patients in a sufficiently early stage, and hence the development of the dispensary scheme, which was the only logical outcome of the situation and is the only logical outcome of a somewhat similar situation in London to-day.

Owing to the large number of institutions for giving treatment already in the field the German dispensaries found it unnecessary to give treatment.

1904 (2).—*The first dispensary opened in America at New York.* The growth of the dispensary system in the States has been no less rapid, though I do not know the total number now in existence. In 1908 New York had 10 dispensaries, and various other towns had them as well. Though founded independently, their programmes are very similar to those of the Edinburgh Dispensary.

Boston has a dispensary which is a direct copy of the Edinburgh model. At the time of the Washington Congress in 1908 Dr. Philip was presented with a map of *Pennsylvania* showing 67 dispensaries marked on it, all on the lines of his dispensary in Edinburgh, and all founded within three years of the first.

1908.—*The first dispensary opened in Canada at Ottawa.* This is on the Edinburgh model.

1909 (1).—*The first dispensary opened in London at Paddington*, modelled exactly on the Edinburgh pattern.

1909 (2).—Last year also the King, by pressing an electric button in this country, opened *the second dispensary in Canada—i.e., at Montreal.* This also is on the Edinburgh lines.

The Future Development of the Dispensary Movement.

There is no doubt that a similar growth of the dispensary movement will soon take place in this country. Our conservative adherence to the out-patient department system and certain difficulties connected with the funds of the hospitals are alone hindering this development. It is becoming gradually realised, however, that if the disease is to be finally eradicated it must be attacked where it lurks and breeds—i.e., in the actual homes of the poor, and that this cannot be done by proxy through sundry health visitors and others, but only by the direct and personal supervision of the homes by medical men and trained nurses.

The question is often asked, "Should such dispensaries, if started, be municipal or voluntary?" There are arguments in favour of and against their being municipal. If they were municipal the funds would be guaranteed and there would be no more difficulty in starting dispensaries in the poorer boroughs than in the richer boroughs. But, on the other hand, if the dispensaries first started prove their value there is no doubt that private funds will be forthcoming to start them in the poorer districts. And there is always this great advantage in their remaining voluntary—i.e., that they will be free of red tape and will be able to develop along any new lines which may be thought advisable. Of New York's ten dispensaries only one is directly under municipal control, the others being voluntary.

The chief object to be attained is that all the dispensaries should be on the same lines as each other, should confine themselves strictly to their own districts, should be free of the letter system, and should cordially coöperate with each other.

When London gets her network of dispensaries, as Berlin, New York, Chicago, and many other great cities have recently got them, the day when tuberculosis ceases to be anything but a name will have been brought appreciably nearer, and it is but a sign of the times that you have asked me here this afternoon to explain this scheme to you. I can only say that it is a great pleasure and privilege to me to have had the opportunity of doing so.

Note.—The part of this paper dealing more particularly with the functions of the dispensary has been rewritten so as to include the answers to various questions asked at the close of the lecture.

THE BREWING OF BEER CONTAINING A MINIMUM OF ALCOHOL.

It has been said with a substratum of truth that one of the chief causes of intemperance is the extraordinary nastiness of many temperance drinks. The attitude of the total abstainer in regard to the drinks which he is bound to avoid must be regarded, in short, as stoical, for although amongst the numerous beverages offered to him few are absolutely unwholesome most of them are unpalatable. Time after time have various attempts been made to remove this stigma from temperance drinks, and in one or two instances some success has been achieved, but there is still room for a satisfactory non-alcoholic beverage. There can be little doubt that the movement in favour of consuming less alcohol is a strong one, and its adherents grow in force and number every day, so that the demand for a palatable wholesome beverage which is free, or very largely free, from intoxicant principles has become strong. In fact, a national drink which should enjoy the old popularity of beer while satisfying the susceptibilities of the opponent to alcohol is really wanted. The want is a healthy one, and therefore it should receive the serious consideration of all sanitary reformers.

The attention of the Analytical Department of THE LANCET has been directed for a good many years to this subject and consultation of our analytical columns shows that numerous temperance drinks have been submitted to analysis and reported upon by us accordingly. It is interesting to note that by far the greater number of these beverages has been examined during recent years—say, from the year 1900 to the present time. Amongst the kinds submitted have been mineral waters—soda-water, lemonade, ginger ale, ginger beer (fermented), thin malt extracts, aerated mixtures containing various flavouring materials, essences, and syrup, kola champagne, weak infusions of malt and hops (aerated), and sterilised grape juice. The latter is just now a very popular drink, and it forms a palatable, wholesome, and agreeably acid beverage when mixed with aerated water. In many cases our laboratory commissioners had to report the presence of preservatives, and there is little doubt that one of the serious obstacles to the making of a temperance drink is the fact that so often it will not keep, whereas in the case of alcoholic drinks the alcohol, of course, is the chief preservative.

Quite recently our attention has been drawn to a new beverage made practically in the same way as beer—that is to say, it contains the soluble portions of malt and the bitter principles of the hop—and yet it is without an appreciable amount of alcohol. Not the least interesting fact about this temperance beer is that the public will owe its production on a practical scale largely to the interest which is taken in it by a firm of well-known brewers. Our commissioners have had a full opportunity of seeing the plant which has been erected for the purpose of brewing this "nonal," as it is called. Without going into the minute technical details of the process, it may be said broadly that "nonal" is brewed from malt and hops exclusively, but as the supply of malt sugar is restricted so is the output of alcohol kept at a minimum. The formation of dextrin and its inclusion in the beer are encouraged, since this substance is of well-known nutritive value, while as such it cannot ferment, and therefore yield alcohol. A further interesting feature of the process is that it is conducted in closed vessels, so that the gas produced in the limited fermentation is retained to give life and sparkle to the ultimate product. The amount of alcohol produced is under absolute control and it never exceeds that quantity permitted in temperance beverages by the Excise authorities, 2 per cent. of proof spirit, which is equivalent to 0·90 per cent. of absolute alcohol by weight, or 1·16 per cent. by volume. To prevent the possibility of any further development of alcohol the beer is pasteurised, and thus the activity of the ferments is destroyed.

"Nonal" takes the form of both ale and stout, the only difference between them being that, as is the case with the ordinary brewed malt liquors, some burnt malt is added to the "nonal stout." Submitted to analysis in THE LANCET Laboratory the following results were obtained :—

	"Nonal Ale." Per cent.	"Nonal Stout." Per cent.
Alcohol by weight	0 53	0·79
,, ,, volume	0 66	0·99
Proof spirit	1·16	1·74
Maltose	3·20	4·40
Dextrin	3·77	5 24
Protein	0·28	0·48
Mineral matters	0·23	0·30
Phosphoric acid	0·03	0·04
Volatile acidity reckoned as acetic acid	0·006	0·018
Fixed acidity reckoned as lactic acid	0·090	0·18

It will be seen that the composition of these beverages very closely resembles, indeed is almost identical with, that of ordinary malt liquors, with the important exception that the alcohol is practically a negligible quantity, amounting to less than a tenth part of that found in ordinary beer. Further, "nonal" is remarkably palatable and is agreeably but not excessively sparkling. The flavour recalls that of a delicate lager beer. The proportion of nutritives represented in the maltose, dextrin, and protein is equal to that of an ordinary well-brewed ale, while "nonal stout" shows a greater amount of nutritives than do many samples which we have examined which claimed to be nourishing. The soundness of the beer is illustrated in the very small amount of free acidity present. A search for foreign bitter principles was not successful, nor was any foreign preservative found. In view of these facts, it must be conceded that a very satisfactory temperance beverage has at length been supplied. It satisfies the palate, in our opinion, at all events, and it certainly has in its favour the important quality of wholesomeness. It possesses the attributes of a sound, well-brewed malt liquor with what some may be pleased to call the vicious portion practically eliminated.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 10th, Mr. BUTLIN, the President, being in the chair.

Mr. Bilton Pollard was introduced, and having made a declaration in the terms of the oath prescribed by the Charter of 1800, was readmitted a member of the Court of Examiners.

A report was received from the Finance Committee announcing that a further sum of money had been received from the estate of the late Sir Erasmus Wilson on the death of Miss Mattingley.

A report was received from the delegates appointed by the two Royal Colleges to consider a scheme for establishing a system of Conjoint examinations in accordance with Statute 123 of the University of London, and Mr. Butlin, President, Mr. Pearce Gould, Vice-President, and Sir Henry Morris were appointed to represent the College as witnesses before the Royal Commission on University Education in London.

A letter was read from Mr. C. H. Golding-Bird, reporting the proceedings of the Central Midwives Board during the past year, from which we quote the more important points :—

> During the year the Board has met 16 times, and there have been 29 meetings of various committees. The number of midwives on the roll (December, 1909) is 28,843; 53 have voluntarily retired; 208 deaths have been reported, whilst 39, for various penal offences, have been struck off the roll; and four more have been "allowed to retire." Of the remaining penal cases, 17 were censured and 11 cautioned; in six sentence has been postponed.
>
> The Board has now 79 recognised training schools, 108 recognised teachers, and 142 approved midwives, who train pupils.
>
> During 1909 six examinations have been held in London and three in each of the provincial centres.
>
> There were in all 2616 candidates and 460 failed to pass, a percentage of failures of 17·5 per cent.
>
> The Board has endeavoured to secure payment for doctors who respond to the call of the midwife in difficult labours, but it is pointed out that nothing but an Act of Parliament can enforce the payment of fees, but short of that the Board has done its best to induce the various local governing bodies to exercise what powers they at present possess in that direction.
>
> Fully alive to that terrible scourge, *Ophthalmia neonatorum*, the Midwives Board had in July, 1908, under its serious consideration the recognition and value of first aid by its midwives in these cases; and drew up, and, after the approval of the Privy Council had been received, issued in December, 1909, to all its midwives, teachers, and pupils, a leaflet giving precise directions how the midwife is to act in such cases; the present authorised and published rules of the Board being neither sufficiently comprehensive nor stringent.

The PRESIDENT reported the delivery of the Hunterian and Arris and Gale Lectures.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ELECTION OF PRESIDENT.

AN extraordinary Comitia was held on March 21st, Sir R. DOUGLAS POWELL, Bart., K.C V.O., the President, being in the chair.

Sir Alfred Keogh, K.C.B., M.D., was admitted a Member of the College.

The PRESIDENT announced that he had nominated the following Fellows to constitute the committee to consider the scheme for establishing a system of conjoint examinations in accordance with Statute 123 of the University of London:—The President, Dr. Norman Moore, Sir William Allchin, Dr. F. Taylor, Sir Thomas Barlow, Dr. J. A. Ormerod, Dr. S. J. Sharkey, Dr. W. Hale White, Dr. W. P. Herringham, Dr. J. Rose Bradford, Dr. E I. Spriggs, Dr. William Hunter, and Dr. E. H. Starling.

Letters were received from the Harveian librarian, Dr. J. F. Payne, resigning his office, and also his position on the Beri-beri Committee. On the motion of the PRESIDENT Dr. Payne's resignation was received with deep regret, and the thanks of the College were returned to him for the great services he had rendered.

The PRESIDENT then delivered his annual address, in the course of which he referred to the Royal honours granted to Fellows during the past year. He also mentioned the awards and prizes which had been distributed, and gave an account of the lectures and orations which had been delivered. He referred in appropriate terms to the resignation of Dr. E. Liveing as registrar, a post which he had held for many years, and his appointment as emeritus registrar. He likewise mentioned the by-laws which had been passed in regard to the admission of women for the examinations of the College. He read short obituary notices of the Fellows who had died during the previous 12 months:—Dr. Thomas Crawford Hayes, Dr. Rayner Winterbotham Batten, Dr. William Arthur Foxwell, Dr. Henry Radcliffe Crocker, Sir Stephen Mackenzie, Dr. Edward Clapton, Dr. William Rivers Pollock, Dr. William Bramwell Ransom, and Dr. William Page May. Having expressed his obligations to the Fellows for having elected him as President during the past five years, Sir R. Douglas Powell vacated the chair.

Sir WILLIAM S. CHURCH proposed a vote of thanks, which was carried by acclamation, to Sir R. Douglas Powell for his address, which he requested might be printed, and also in the name of the College thanked him for the great services he had rendered to the College during his terms of office.

The election for President then took place. In the first ballot 12 Fellows received votes, but as no Fellow obtained the requisite number of votes a second ballot was taken, when Sir Thomas Barlow was elected by a large majority.

The Senior Censor (Sir WILLIAM ALLCHIN) then delivered to him the insignia of office. The PRESIDENT gave his faith to the College and thanked the Fellows for the honour they had conferred upon him.

The PRESIDENT then dissolved the Comitia.

Public Health.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Repeated Occurrence of Enteric Fever at Jennet Hill and Stanford Dingley in the Rural District of Bradfield, by Dr. R. W. JOHNSTONE.[1]—This report gives a concise account of the circumstances in which a small group of houses in the rural district of Bradfield has sustained a remarkably high rate of attack by enteric fever for many years past, and it forms an important contribution to the literature of research into carrier cases. The special incidence of enteric fever at Jennet Hill was brought to the notice of the Local Government Board by the district council in 1908, and Dr. Johnstone made his first local inquiry early in 1909. Jennet Hill is a collection of cottages, hardly of sufficient importance to call a hamlet, midway between Reading and Newbury. It consists of a row of ten dwellings, known as Lailey's-row, lying in a cul-de-sac off a high road, and nine other dwellings near by. A case of enteric fever occurred in Clay Cross village, about a quarter of a mile south of Jennet Hill, in 1893. but no other cases occurred in the neighbourhood until 1896, when four inhabitants of Jennet Hill were attacked. After that date cases of enteric fever have occurred in Jennet Hill in each of the following years: 1897, 1898, 1899, 1900, 1902, 1904, and 1907, a total of 16 attacks being notified. To these must be added 11 other cases among persons living elsewhere who had been at Jennet Hill before their attack, and in all probability contracted infection there. The population of Jennet Hill is not more than 80 persons. During the period 1893–1907 inclusive only 36 cases of enteric fever were notified from the rural district outside the vicinity of Jennet Hill, with a population of about 15,000. The years in which cases occurred in Jennet Hill did not correspond with those in which the majority of cases occurred in the rest of the rural district, and it is noteworthy that when the cases between 1893 and 1907 were grouped according to the month of attack, those in Jennet Hill showed very little seasonal variation, while in the remainder of the district the usual October maximum was apparent. Dr. Johnstone was naturally unable, on account of the lapse of time, to deal fully with the question of possible infection by way of articles of food or drink brought into the neighbourhood from contaminated sources. But, as he points out, in an agricultural neighbourhood of this kind there is little variety of ordinary diet, and his inquiries tended to negative the suggestion that some special food or drink—mineral water. shell-fish, &c.—likely to convey enteric fever infection had been habitually consumed, and to an exceptional extent, by the Jennet Hill inhabitants. The conditions of water-supply and of excrement disposal were of a kind which might be expected to facilitate the spread of infection. A dip-hole by the roadside, fed by a spring and unprotected from surface washings, formed the water-supply between 1893 and 1903, when the present supply, a tube well into the chalk, was provided. There was, however, an interval in 1897, when the dip-hole was closed, and a shallow well, which the parish council had caused to be made close by, was resorted to instead. Certain of the cases in Jennet Hill occurred during this interval and others have occurred since 1903. Excrement from pail closets is disposed of in the gardens and fields near the houses. The closets of invaded houses have been systematically disinfected, but not until after the removal or recovery of the patient. Thus while soil or water pollution may have contributed in any given year to local spread of infection, they do not appear of themselves to afford an adequate explanation of the continued occurrence of cases year by year which has been above described. Dr. Johnstone adopted this view after his first inquiries and concluded that a probable explanation of the main circumstances would be found in the existence of one or more carrier cases among the inhabitants, especially of certain suspected houses in Lailey's-row. This supposition was verified by the history of the place in 1909, as ascertained by Dr. Johnstone at a further inquiry. On March 27th, 1909, a boy living at 8, Lailey's-row sickened with enteric fever. He had come to Jennet Hill with his family in the previous autumn; he had not been away from home except to a neighbouring school, and he had not been exposed to any known source of infection. Another case suspected to be enteric fever occurred at 9, Lailey's-row in May. A mother, aged 27 years, and her daughter, aged 4 years, went to stay at 8, Lailey's-row on Feb. 25th, 1909, and returned to their home in Newbury rural district on March 15th. The mother had then been ailing for a week and her illness was ultimately diagnosed as enteric fever. The daughter sickened about March 17th with the same disease. These cases, together with the results of Dr. Johnstone's previous inquiry, facilitated attempts to obtain specimens of blood, fæces, and urine of the inhabitants of Jennet Hill for examination, but this was not an easy matter The inhabitants, Dr. Johnstone remarks, "became suspicious of our motives. Some pleaded outraged modesty, others had religious scruples, and argument and persuasion only made them more obstinate." Eventually, with much pressure and some pecuniary inducement, samples of fæces and urine were obtained from 19 persons, 15 of whom resided in Lailey's-row. They were examined by Dr. J. C. G Ledingham at the Lister Institute. Six of the blood samples gave a positive reaction with the agglutination test. The bacillus typhosus was not recovered from any of the samples of urine, but four of the samples of fæces contained bacillus typhosus in large quantities. In two of these four cases Dr. Johnstone was not satisfied that the fæces had been those of the persons from whom they were stated to have been obtained. But in regard to the other two, A and D, no doubt arose, and each of these persons may therefore be regarded as a potential carrier case. The woman A had no history of enteric fever or of any illness bearing suspicious resemblance to enteric fever, although other members of her household were alleged to have had the disease in 1892. In 1893 she was living at Clay Hill, and in that year her next-door neighbour was attacked by enteric fever. Immediately afterwards A removed to 9, Lailey's-row at Jennet Hill, where she has been since. It is from 1896 onwards that the succession of cases in Lailey's-row has occurred. But in view of the history of other cases which have been investigated, the occurrence of this interval could not be said to negative the hypothesis that A had been from time to time a carrier of infection since her arrival at Jennet Hill. The second case, D, is that of a married woman who came to Lailey's-row in September, 1903. Here also it is remarkable that she had no history of having suffered from enteric fever or anything resembling it. One case occurred in her family in 1906. In 1908 she moved to a village three miles away, and two cases of enteric fever have since occurred in connexion with the house which she then occupied. The conveyance of infective material from the carrier to the victims is usually effected directly, as a result of personal contact, or indirectly by means of food or other articles contaminated by him. In the present instance inquiries directed to ascertain the degree of intimacy between the inhabitants of Jennet Hill were singularly negative in their results: the inhabitants "never frequented each other's houses, never borrowed or lent cooking or eating utensils, never had fruit or vegetables from each other's gardens, never smoked each other's pipes, and never shook hands with each other." Dr. Johnstone adds, however, that having seen some of the inhabitants in their neighbours' houses, he was not disposed to place great reliance on the answers he received. The *modus operandi* of the agencies which transmitted infection from the carrier cases remains a matter of conjecture.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it

---

[1] Reports to the Local Government Board on Public Health and Medical Subjects. [New Series, No. 22. London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 4*d*.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1910.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	868	441	—	81	1	23	300	10	1724	4·6	—	68	23	43	214	—	11	—	47	406	1·1	5896	16·6
West Districts.																									
Paddington	153,004	—	22	18	—	4	—	—	11	1	56	4·8	—	12	2	2	7	—	—	—	—	23	2·0	190	17·3
Kensington	184,635	—	16	8	—	4	—	4	13	1	46	3·2	—	1	—	1	2	—	—	—	—	4	0·3	183	13·8
Hammersmith	127,413	—	41	14	—	3	—	—	2	—	60	6·1	—	8	1	1	2	—	—	—	4	16	1·6	143	15·2
Fulham	181,282	—	39	26	—	2	—	1	7	—	75	5·4	—	3	—	3	13	—	—	—	6	25	1·8	172	13·0
Chelsea	75,457	—	11	2	—	6	—	—	5	—	24	4·1	—	5	—	—	1	—	1	—	1	8	1·4	105	18·8
City of Westminster	167,233	—	24	11	—	4	—	—	6	1	46	3·6	—	—	—	—	1	—	—	—	4	5	0·4	195	17·0
North Districts.																									
St. Marylebone	125,195	—	20	14	—	2	—	1	7	1	45	4·7	—	1	—	1	7	—	—	—	—	9	0·9	176	19·5
Hampstead	95,729	—	18	4	—	1	—	—	3	—	26	3·5	—	3	—	—	—	—	—	—	—	3	0·4	82	12·6
St. Pancras	237,792	—	78	18	—	2	—	1	15	1	115	6·3	—	1	3	3	8	—	—	—	3	18	1·0	310	17·8
Islington	353,356	—	85	30	—	2	—	3	16	1	137	5·1	—	—	1	3	25	—	1	—	2	32	1·2	434	16·6
Stoke Newington	54,838	—	6	10	—	1	—	—	4	—	21	5·0	—	—	—	—	—	—	—	—	1	1	0·2	50	12·4
Hackney	239,979	—	30	13	—	—	—	—	21	1	65	3·5	—	6	1	1	8	—	—	—	1	17	0·9	294	16·7
Central Districts.																									
Holborn	53,142	—	6	—	—	2	—	—	2	—	10	2·5	—	—	—	1	2	—	—	—	1	4	1·0	91	24·0
Finsbury	94,578	—	9	7	—	1	—	—	14	—	31	4·3	—	1	1	—	5	—	—	—	1	8	1·1	168	24·0
City of London	17,132	—	1	1	—	—	—	—	1	—	3	2·3	—	—	—	—	1	—	—	—	—	1	0·8	31	25·9
East Districts.																									
Shoreditch	114,387	—	12	18	—	1	—	2	9	—	42	4·8	—	1	—	4	3	—	—	—	5	13	1·5	177	21·2
Bethnal Green	131,579	—	14	14	—	2	—	2	5	1	38	3·8	—	2	—	2	9	—	—	—	—	13	1·3	170	17·0
Stepney	314,379	—	37	31	—	12	—	2	30	1	113	4·7	—	4	2	4	29	—	1	—	5	45	1·9	414	18·0
Poplar	172,432	—	29	9	—	3	—	—	11	—	52	3·9	—	3	—	4	13	—	2	—	3	25	1·9	234	18·3
South Districts.																									
Southwark	211,832	—	28	16	—	3	—	1	18	—	66	4·1	—	1	2	—	4	—	2	—	3	12	0·7	290	18·6
Bermondsey	127,238	—	20	10	—	1	—	1	9	—	41	4·2	—	1	—	2	3	—	—	—	1	7	0·7	179	18·7
Lambeth	327,074	—	75	27	—	2	—	1	14	—	119	4·7	—	1	7	2	7	—	1	—	—	18	0·7	409	16·8
Battersea	188,222	—	35	14	—	2	1	3	14	1	70	4·8	—	5	1	1	7	—	1	—	—	15	1·1	178	13·2
Wandsworth	305,838	—	67	26	—	5	—	—	12	—	110	4·7	—	2	—	—	13	—	—	—	2	17	0·7	290	13·1
Camberwell	286,058	—	43	19	—	10	—	1	13	—	86	3·9	—	2	—	1	8	—	1	—	2	14	0·6	335	15·9
Deptford	119,642	—	16	13	—	2	—	—	10	—	41	4·5	—	1	—	—	11	—	—	—	—	12	1·3	169	19·3
Greenwich	112,935	—	11	14	—	2	—	—	11	—	38	4·4	—	4	1	3	15	—	—	—	1	24	2·8	141	16·6
Lewisham	164,899	—	56	27	—	2	—	—	6	—	91	7·2	—	—	1	2	6	—	1	—	1	11	0·9	151	12·4
Woolwich	135,422	—	19	27	—	—	—	—	11	—	57	5·5	—	—	—	2	4	—	—	—	—	6	0·6	135	13·9
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·6 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates had been 5·8, 5·4, and 4·5 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, Hampstead, Hackney, Holborn, and the City of London; and the highest rates in Hammersmith, Fulham, St. Pancras, Lewisham, and Woolwich. The prevalence of scarlet fever showed a slight increase last month; among the several metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, Fulham, St. Pancras, Islington, Lambeth, and Lewisham. The Metropolitan Asylums Hospitals contained 1740 scarlet fever patients at the end of last month, against 2460, 2329, and 1962 at the end of the three preceding months; the weekly admissions averaged 204, against 289, 250, and 198 in the three preceding months. Diphtheria showed a slightly decreased prevalence last month; the greatest proportional prevalence of this disease was recorded in Paddington, Fulham, Stoke Newington, Shoreditch, Greenwich, Lewisham, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 940, 904, and 883 at the end of the three preceding months, had risen again to 908 at the end of last month; the weekly admissions averaged 93, against 104, 97, and 96 in the three preceding months. The prevalence of enteric fever showed a marked increase over that recorded in the previous month; this disease was proportionally most prevalent in Paddington, Chelsea, Holborn, Stepney, and Camberwell. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month was 75, against 62 at the end of each of the two preceding months; the weekly admissions averaged 12, against 10, 8, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Stepney, Southwark, Greenwich, Deptford, and Woolwich. The 23 cases of puerperal fever notified during the month included 4 belonging to Kensington, 3 each to Islington and Battersea, and 2 each to Shoreditch, Bethnal Green, and Stepney. Ten cases of cerebro-spinal meningitis were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the four weeks ending Feb. 26th the deaths of 5896 London residents were registered, equal to a corrected annual death-rate of 16·6 per 1000; in the three preceding months the corresponding rates were 14·5, 15·8, and 14·8 per 1000. The lowest rates last month were 12·4 in Stoke Newington and in Lewisham, 12·6 in Hampstead, 13·0 in Fulham, 13·1 in Wandsworth, and 13·2 in Battersea; the highest rates were 19·3 in Deptford, 19·5 in St. Marylebone, 21·2 in Shoreditch, 24·0 in Holborn and in Finsbury, and 25·9 in the City of London. The 5896 deaths from all causes included 406 which were referred to the principal infectious diseases; of these 68 resulted from measles, 23 from scarlet fever, 43 from diphtheria, 214 from whooping-cough, 11 from enteric fever, and 47 from diarrhœa. The lowest death-rates from these infectious diseases in the aggregate were recorded in Kensington, the City of Westminster, Hampstead, Stoke Newington, Camberwell, and Woolwich; and the highest rates in Paddington, Hammersmith, Fulham, Stepney, Poplar, and Greenwich.

The 68 fatal cases of measles were less than half the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Paddington, Hammersmith, Chelsea, Hampstead, Hackney, Battersea, and Greenwich. The 23 deaths from scarlet fever were 17 fewer than the corrected average number; of these 23 deaths, 7 belonged to Lambeth, 3 to St. Pancras, and 2 each to Paddington, Stepney, and Southwark. The 43 fatal cases of diphtheria showed a decline of 26 from the corrected average number; this disease was proportionally most fatal in Fulham, Shoreditch, Poplar, Bermondsey, and Greenwich. The 214 deaths from whooping-cough exceeded by 70 the corrected average number; the highest death-rates from this disease last month were recorded in Fulham, Islington, Bethnal Green, Stepney, Poplar, Deptford, and Greenwich. The 11 deaths referred to enteric fever were slightly below the corrected average number; 2 of these deaths belonged to Poplar and 2 to Southwark. The 47 fatal cases of diarrhœa were 14 below the corrected average number; this disease was proportionally most fatal in Hammersmith, Fulham, the City of Westminster, and Shoreditch. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 14·9 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet-Surgeon John Leslie Barrington has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Jan. 26th, 1910).

The following appointments have been notified:—Fleet-Surgeons: A. G. W. Bowen to the *Black Prince*, on recommissioning; J. C. Ferguson, J. F. Hall, A. Maclean, H. Clift, and G. Ley to the *President*, additional, for hospital course. Staff-Surgeons: W. H. O. Garde, J. W. Fergusson, S. H. Facey, J. P. H. Greenhalgh, J. Macdonald, A. J. Hewitt, J. Mowat, and J. W. Craig to the *President*, additional, for hospital course. Surgeons: C. A. G. Phipps, A. B. Marsh, J. McA. Holmes, E. Cameron, L. S. Whitwam to the *President*, additional, for hospital course; and W. G. Edwards to the *Black Prince*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Colonel T. J. R. Lucas, C.B., from Bangalore, has been appointed Principal Medical Officer, Abbottabad and Sialkot Brigades. Lieutenant-Colonel G. F. Gubbin, at Colaba, has been selected for increased rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel H. D. Rowan, from Rawal Pindi, has been appointed to Aldershot. Lieutenant-Colonel T. du B. Whaite has been transferred from the Eastern Command to Woolwich, and appointed Senior Medical Officer at the Royal Arsenal. Lieutenant-Colonel G. G. Adams has embarked for India. Lieutenant-Colonel A. R. Aldridge has been appointed Instructor at the School of Army Sanitation, Aldershot, vice Brevet-Colonel R. H. Firth, who has embarked for a tour of service in India. Lieutenant-Colonel G. Wilson, from Multan, has been appointed to the Eastern Command. Major S. G. Moores, Major T. B. Beach, Major C. W. R. Healy, and Major J. H. E. Austin have been selected for increased rate of pay from Feb. 1st, under Article 317 of the Royal Warrant. Major A. H. O. Young, on arrival from Bermuda, has been appointed to the Northern Command. Major A. E. Master has been transferred from the Eastern Command to Woolwich for duty at the Royal Arsenal. Major C. T. Samman, from Shorncliffe, has embarked for India. Major L. F. Smith, in charge of the Brigade Laboratory at Nowshera, has been appointed a specialist in the prevention of disease, with effect from Jan. 8th. Major B. Forde, from Bloemfontein, has been appointed for duty at Wynberg. Captain A. L. Otway from Mhow has been appointed for duty in the Dublin District. Captain E. M. Glanvill, from Harrismith, has been posted to the Southern Command, and Captain E. C. Whitehead, from Pretoria, has been posted to the Irish Command. Captain W. Tilbury-Brown, from Colchester, has been selected for the appointment of Sanitary Officer, Burma Division. Captain A. M. Rose, from Bermuda, has been posted for duty at Aldershot. Captain P. J. Dwyer, on arrival at Aden from India, has been appointed to the charge of the Brigade Laboratory. Lieutenant J. C. L. Kingston has been posted to the Southern Command. Lieutenant W. Mathieson is appointed for duty at Queen Alexandra's Military Hospital, Millbank. Lieutenant S. Field, on return from special service in Somaliland, has been posted for dnty in the Eastern Command. Lieutenant J. H. Gurley has arrived home on leave from Egypt. Lieutenant A. Shepherd, Lieutenant W. S. Dunn, Lieutenant F. B. Dalgliesh, Lieutenant S. G. Walker, and Lieutenant F. M. Hewson have embarked for India. Lieutenant A. C. Amy has been transferred from Ranikhet to Bareilly, and Lieutenant A. H. Heslop has been transferred from Sialkot to Rawal Pindi.

INDIAN MEDICAL SERVICE.

Colonel H. K. McKay, C.B., C.I.E., Bengal, Principal Medical Officer, Burma Division, has been permitted to retire from the service from Dec. 3rd last. Colonel H. StClare Carruthers, Madras, has been selected for the appointment of Principal Medical Officer, Secunderabad Brigade. Lieutenant-Colonel J. C. Marsden, Madras, has been permitted to retire with effect from Feb. 10th. Lieutenant-Colonel R. J. Marks has had his leave extended. Major Clemesha has been appointed to officiate as Sanitary Commissioner, Bengal Presidency, vice Lieutenant-Colonel Clarkson, proceeding on two years' combined leave and furlough out of India. Major C. M. Matthews has had his leave extended by six months Major Graves has been posted for temporary duty in the Madras Presidency. Major J. Davidson, in charge of the Dehra Dun Brigade Laboratory, has been appointed a specialist in the prevention of disease from Dec. 10th last. Major G. T. Birdwood, on completion of a course of special duty in the Bacteriological Laboratories of the Institute of Preventive Medicine at Kasauli, has been appointed Civil Surgeon of Mussooree. Captain W. T. McCown has been permitted an extension of his leave by six months on medical certificate. Captain Husband has been posted to Burma.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Northern General Hospital: Captain Archibald Young to be Major (dated April 18th, 1909). Major Archibald Young resigns his commission (dated Nov. 20th, 1909). Captain Arthur R. Hallam to be Major (dated Nov. 20th, 1909).

For attachment to Units other than Medical Units.—Lieutenant Albert Willis Warren Swettenham, from the South Wales Mounted Brigade Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Jan. 1st, 1910).

APPENDICITIS IN THE GERMAN NAVY.

The last statistical report of the German Navy contains an interesting account of the 272 cases of appendicitis which occurred in the service during 1906-07 by Marine Stabsarzt Dr. MacLean. The number of cases had increased from 185 in the preceding year. No cause could be assigned, but the disease was more frequent in China, where all intestinal diseases are prevalent, but where those ashore were attacked three times as frequently as those on ships. Operation, we learn from the report, is becoming more frequent in cases of appendicitis, and when the operation was performed immediately or at the onset of symptoms the mortality was least and the successful result more rapidly secured. 84 operations were done at the onset and 65 in a quiet interval. In 26 cases there was an abscess; in 9 general purulent peritonitis had supervened. Of these last, 6 cases died. Only 1 case died uncomplicated by peritonitis, and in this case death was due to œdema of the lungs and heart failure, confirming the view that the operation for appendicitis is chiefly dangerous if not done in time. Early operation was specially attempted at Kiaochau (Tsingtau) in China. There the patients were put on solid food the day after the operation and took it well and got up about the tenth day, being generally discharged in four weeks. The mortality was 2 per cent. These observations enforce the importance of early diagnosis and immediate operation.

THE SECOND INTERNATIONAL CONGRESS OF OCCUPATIONAL DISEASES.—The following programme of discussions has been arranged for this congress, which, as we announced last week, will be held at Brussels between Sept. 10th and 14th next under the patronage of the Belgian Government:—1. Can occupational diseases be distinguished from industrial accidents, and if so, what are their points of difference? 2. What medical organisation exists for the benefit of workers in factories, workshops, dockyards, and mines? 3. The present state of preventive measures against ankylostomiasis. 4. Disorders of the eye and of vision in their relation to occupational diseases. 5. Work in compressed air. 6. Occupational intoxications. Anyone interested in these subjects and desiring to attend the congress should apply to Mr. W. F. Dearden, D.P.H., 15, Salisbury Buildings, Trafford-road, Manchester, joint honorary secretary, with Dr. T. M. Legge, of the British National Committee for the Congress.

Correspondence.

"Audi alteram partem."

THE PREVALENCE OF TUBERCULOSIS AMONG SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—Dr. Philip's letter in the issue of March 12th shows how desirable it is to come to some general understanding as to what is to be taken to constitute evidence of tuberculosis in children for school purposes. If we are to take reaction to tuberculin, enlargement of cervical glands, bronchitic râles or fine crepitations in the chest, cough or poor nutrition—singly or together—as indicating tuberculosis, no doubt 30, or even 50, per cent. may be a fair estimate of the amount of tuberculosis in children of school age. We might even concede 85 to 90 per cent.—it is chiefly a question as to what you are searching for.

We are all, probably, harbouring pneumococci in our bodies, but we cannot be therefore said to have pneumonia, and in all densely crowded cities it is probable that most of us have some tubercle bacilli somewhere about us. Many of us have some glands hardened in protecting us from these or other bacteria which have got through the mucous membrane of the throat and upper air-passages or through decayed teeth; many of us would react to von Pirquet's test. Some, including children at school (or who ought to be at school), have even had active tuberculosis of the lungs which has left a scar.

Dr. Philip takes 12 palpable glands and certain signs (which he does not specify) on percussion and auscultation at the apices of the lungs as evidence of tuberculosis. Apparently he was not quite convinced as to the value of the evidence, since he "wrote off 15 per cent. of the whole" to arrive at his total of 30 per cent. of tuberculous children in the schools. I imagine that the percentage prevalence of tuberculosis amongst children attending school arrived at by this method will hardly be considered convincing; it is too much from one point of view and too little from another. Yet, supposing we allow that 30 per cent. of town children are, or have been, the subjects of tuberculous implantation—and I am quite prepared, as I have said, to accept even a higher estimate—is not the practical point after all to find out what children are, by reason of tuberculosis, unfit to attend school either on account of harm to themselves or because of possible danger to others?

There are unfortunately many children in the schools who should be sent to sanatoriums or to open-air schools; it is also unfortunately true that there are many children kept out of school for "tuberculosis" or "consumption" who would be very much better off at school. Once a child is excluded as consumptive neither parents nor teachers seem able to allow that he can ever have recovered; nor with such a test as Dr. Philip advocates would such a child ever be able to pass the school doctor. Thus the child goes on, missing all the educational advantages and being taught to look on himself as one who must not work. We cannot get physical perfection in the children of the poorer parts of our large towns, and it is, in my opinion, unwise to insist on too rigid a medical test in estimating the child's fitness for school attendance, provided we are careful to exclude those whose health may be prejudiced by attendance and those who may be prejudicial to others. Most of Dr. Philip's 30 per cent. would be better at school than at home, and very few, if any, would be a source of danger to others.

I agree entirely with Dr. Philip that the standard of clinical training in the physical examination of the chest needs raising; but we must, on the other hand, avoid such refinement that every chest is pronounced diseased which presents any sign differing from what belongs to the ideal healthy chest—often termed "normal" in error, for few children, and practically no adults, satisfy this ideal of healthy lungs entirely and always.

I am, Sir, yours faithfully,

London, March 18th, 1910. J. EDWARD SQUIRE.

To the Editor of THE LANCET.

SIR,—There appeared in THE LANCET of March 12th (p. 751) a most instructive letter from the pen of Dr. R. W. Philip of Edinburgh in which he brought forward interesting statistics regarding the prevalence of tuberculosis in school children. The evidence of one who is a pioneer in this branch of medicine merits close study. I should like to submit some general considerations regarding pulmonary tuberculosis among school children in relation to medical inspection.

Dr. Philip lays stress on a point I have elsewhere[1] referred to—namely, that the results obtained by medical inspectors are not at present comparable, because there is no uniform standard on which a diagnosis can be based. After making every allowance for variations in the incidence of tuberculosis in different districts it seems to me that the divergent statistics furnished by medical inspectors can only be explained by assuming that some adopt a more rigid standard than others. Then the figures given must not be taken as a true estimate of the prevalence of this disease among school children. I understand that in medical inspection no account is taken of those absent from school, and that the percentages given only refer to the children actually inspected in schools by the medical officers.

It may be taken as being generally true that pulmonary tuberculosis in school children is more prevalent than is imagined—witness the post-mortem records of children who have succumbed to other diseases but in whom there is evidence of healed tuberculous lesions. It is almost universally admitted that acute pulmonary tuberculosis is a very fatal disease in children, and therefore it is surely logical to conclude that these healed lesions represent in the majority of cases previous chronic or subacute tuberculous foci. If I might be allowed to indulge in a hypothetical statement, I venture to say that, were it possible to directly inspect the lungs during life, it is extremely likely that one would find early chronic lesions in many cases where such were never suspected.

One factor that tends to cause too low an estimate of pulmonary tuberculosis among those in this age group is difficulty of diagnosis. It is much less easy to diagnose pulmonary tuberculosis in the child than in the adult, owing to the greater difficulty of interpreting the physical signs met with. There is no single sign or symptom pathognomonic of this disease in the child, and I am not convinced that the association of dulness on percussion, bronchial breathing, and crepitations which may or may not be intermittent, in an emaciated anæmic child is absolutely diagnostic of pulmonary tuberculosis. To cite only one example, I have seen the above picture in children who suffered from enlarged tonsils and adenoids, but in whom after operation the physical signs disappeared within a few days and the symptoms rapidly improved. Under such circumstances I hardly think a diagnosis of tuberculosis is justified.

It may be that the tests adopted by Dr. Philip are sufficiently rigid. But let me point out that long practice doubtless affords Dr. Philip that delicacy of diagnostic acumen which permits of his making a positive diagnosis in cases where the uninitiated or those who have had less experience would be unable to arrive at a definite conclusion.

If the diagnosis of this disease is difficult under ordinary circumstances it is much more difficult when undertaken during school inspection. The medical inspector is hampered by the foolish attempt of the Education Department to rush the work. It cannot be expected that very early cases of this disease will be recognised if the inspector has to examine so many per diem, and it has also to be remembered that the examination is not merely to determine the presence or absence of lung disease. It may be argued that it was not intended in medical inspection to enter into refined diagnostic work, but if medical inspection is to be undertaken at all, surely it ought to be thoroughly and efficiently done. Dr. Philip very aptly remarks that many of these children appear in good health and thus the possibility of pulmonary affections is overlooked.

Apart altogether from the practical impossibility of diagnosing early tuberculous infection of the lungs during the course of one short examination, it should be noted that the conditions under which the inspector has to conduct the examinations are often not ideal. For instance, the child may be so alarmed at the very idea of being examined by a doctor that investigation is difficult and accurate observations may be impossible, or the room allotted to the school officer may be so situated that the quiet necessary for delicate percussion and auscultation may not be obtained.

I believe that the problem might be dealt with fairly satisfactorily if there were freer interchange and more coöperation between medical inspectors and family practitioners. I should suggest that any children in whom there was the slightest suspicion of pulmonary tuberculosis should be re-examined specially on another day, and if the signs and symptoms pointed to possible lung involvement then the child should be referred to the family medical attendant for further investigation and observation.

In a paper[2] in your columns last year I endeavoured to show how important it is to recognise early tuberculous mediastinal glands, and I referred to some of the aids that might be employed to substantiate or reject the provisional diagnosis. These additional diagnostic weapons—for example, X rays, tuberculin tests, &c.—cannot be used by the medical inspector. They can best be applied by the family doctor, or if necessary by a specialist. My contention is that the medical inspector with the ordinary means of diagnosis at his disposal, based on symptoms and physical signs, cannot with certainty diagnose early chronic tuberculosis of the lungs in every case in which it exists.

I should like to subscribe to the sentiments expressed by Dr. Philip in his concluding paragraph, in which he points out that the training of the medical student is faulty. There is not the slightest doubt that formerly the student was led to believe that chronic pulmonary tuberculosis was essentially a disease of adult life, and his attention was directed far more to the clinical picture of acute tuberculosis of the lungs than to the early phenomena of the insidious more chronic variety.

I am afraid, Sir, I have written at greater length than I had intended, but I crave your indulgence on the ground that the subject is of very great importance and has a direct bearing on the future physique of our race. In medical inspection cases of well-marked pulmonary tuberculosis will probably be readily recognised, but there remain a large number of border-line cases, children who are "physiologically delicate," "pretuberculous"—call them what you will. These children are prone to, and may under adverse circumstances develop, pulmonary tuberculosis. They are physically defective and are not able to compete on equal terms with their more fortunate companions who are in good health. They do not, as a rule, require to be kept from school, but they should be under medical supervision, and this supervision can best be carried out at the hands of the family doctor or, in necessary cases, by the medical staff of the local hospital. The problem of the future of the tuberculous child, or the child who is supposed to be phthisical, is of the utmost importance, and in conclusion I would urge that thorough and efficient medical inspection would undoubtedly assist us in our efforts to deal with this matter.

I am, Sirs, yours faithfully,
JOHN ALLAN, M.D. Edin., D.P.H.

Edinburgh, March 16th, 1910.

THE INFECTIVENESS OF SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—It is sad to see the lessons of the past constantly forgotten. Our fathers forgot influenza, and we have needed the serious epidemic of the last 20 years to make us study the records of the eighteenth century. Sydenham called scarlet fever "*hoc morbi nomen*," but Trousseau in his well-known lecture relates in a way that I have never forgotten how scarlet fever may run a mild course for years and then become virulent again. Dr. R. Milne has had a series of mild cases such as we have had in Birmingham, where the chairman of the health committee has boasted that there has not been a death among the last 800 cases treated at the City Fever Hospital. But what does this prove? Merely that at a certain time or in a certain place scarlet fever may be a very mild disease, but at another time or place it may again become virulent, and everyone who has seen malignant scarlet fever will agree that it is a most terrible disease. I shudder when I think of cases I have seen, and hope I may never meet with another.

I am, Sir, yours faithfully,
Birmingham, March 21st, 1910. ROBERT SAUNDBY.

---

[1] Brit. Med. Jour., Dec. 11th, 1909

[2] THE LANCET, Oct. 23rd, 1909, p. 1209.

LEGISLATION IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—To those interested in the question of legislation upon anæsthetics the report of the Anæsthetics Committee of the Royal College of Surgeons of England[1] contains one recommendation which is likely to cause disappointment. In general the committee finds itself in accord with the conclusions of the General Medical Council, for which we may be thankful, but in one important particular an alteration is suggested. This alteration affects the question of permitting dental practitioners to administer certain specified anæsthetics "for operations performed by duly qualified medical practitioners." That is to say, the dentist may not only give certain anæsthetics for the performance of dental operations, a position which I think all are now agreed to grant, but he may act as anæsthetist for the performance of any other operation provided he uses one of the specified anæsthetics. The main object of legislation in this matter was, I suppose, to protect the public. This was to be achieved by raising the general competency of the medical profession in the matter of anæsthetics and by debarring the medically unqualified from administering these agents. Having provided for these aims by concurring with the conclusions of the General Medical Council, the Anæsthetics Committee of the College adopt an exactly opposite attitude by the inclusion of the suggested alteration. Having provided for numerous competent anæsthetists among the rank and file of medical men they then say to the public in effect: "You can be anæsthetised also for your operation, whatever it is, by a man who has been taught to give anæsthetics for the extraction of teeth." Surely, Sir, it would be just as logical to extend in the same way the bounds which limit the operations of the qualified dental surgeon?

If being taught to give anæsthetics for dental operations qualifies him to give them under any and all conditions, then being taught to operate on the teeth should at least qualify him to perform any other operation within the mouth. His sphere should then include the removal of tonsils, excision of tongues, opening retropharyngeal abscesses, &c. The dangers of thus extending the scope of a man who is, medically and surgically speaking, only partially qualified, are at once apparent. Yet they are no greater than those, equally apparent to all familiar with anæsthetics, which arise in giving the same man a free hand with his anæsthetics in such conditions as are constantly met with in practice. How is such a man to recognise when he meets them the conditions in which his specified anæsthetics are dangerous? How is he to be qualified to meet dangers when they arise? What experience or training will there be behind him to enable him even to know which of his specified anæsthetics he should choose in a particular case?

Speaking, Sir, with all the great respect due to the members of the Anæsthetics Committee of the College, I would maintain that their suggested alteration is illogical because it is in opposition to the spirit of their other recommendations, and unwise because it would cripple their good effect. Yet another argument may be urged against this suggested alteration, derived from the respective numbers of medical and of dental practitioners. There are roughly speaking some 30,000 of the former to 5000 of the latter in the United Kingdom. It is probable, therefore, that the hands of the latter are already even more occupied than those of the former, and that any work, even if it could be done equally well by either body, should be delegated to the medical rather than to the dental profession. Still more is this the case when, as in the present instance, the work is such as can only be safely and properly entrusted to those who have had complete medical training. By dentists I refer, of course, in this letter to those dental surgeons, at present the great majority, who have only a dental qualification.

I am, Sir, yours faithfully,
March 19th, 1910. J. BLUMFELD.

IN GOOD CAUSE.

To the Editor of THE LANCET.

SIR,—Owing to the untimely death of Professor Alec Fraser his widow has been left in very straitened circumstances. To help her a subscription list has been opened, and the following have either promised or sent in the amounts opposite to their names. Those who have promised and those intending to subscribe should forward their subscriptions without delay to the honorary treasurer of the fund.—We are, Sir, yours faithfully,

JOHN LENTAIGNE,
President, Royal College of Surgeons in Ireland.
ROBERT H. WOODS,
Vice-President, Royal College of Surgeons in Ireland.
CHARLES A. CAMERON,
Secretary, Royal College of Surgeons in Ireland.
WILLIAM TAYLOR,
Honorary Treasurer of the Fund.
47, Fitzwilliam-square, West Dublin, March 9th, 1910.

The following subscriptions have already been promised:—

	£	s.	d.
Mr. John Lentaigne	10	10	0
Mr. Robert H. Woods	10	10	0
Sir Charles A. Cameron C.B.	10	10	0
Sir Thomas Myles	10	10	0
Sir Charles B. Ball	10	10	0
Mr. John B. Story	10	10	0
Mr. Henry G. Sherlock	10	10	0
Mr. William Taylor	10	10	0
Sir Henry R. Swanzy	10	10	0
Sir Arthur Chance	10	10	0
Mr. R. Charles B. Maunsell	10	10	0
Mr. T. E. Gordon	10	10	0
Mr. Edward H. Taylor	10	10	0
Sir W. Thornley Stoker	10	10	0
Dr. A. Francis Dixon	10	10	0
Mr. S. Horace Law	5	5	0
Mr. D. Kennedy	5	5	0
Professor B. C. A. Windle	5	5	0
His Honour Judge Shaw	5	5	0
Mr. R. Lane Joynt	5	5	0
Sir Lambert Ormsby	5	5	0
Professor Arthur H. White	4	4	0
Mr. Henry Stokes	4	4	0
Mr. R. Bolton M'Causland	3	3	0
Mr. W. I. Wheeler	3	3	0
Mr. D. Edgar Flinn	3	3	0
Mr. L. G. Gunn	3	3	0
Mr. G. Jameson Johnston	3	3	0
Mr. P. W. Maxwell	3	3	0
Mr. David Turner	3	3	0
Mr. C A. K. Ball	3	3	0
Mr. Trevor N. Smith	2	2	0
Mr. R. R. Leeper	2	2	0
Mr. Seton Pringle	2	2	0
Mr. A. W. W. Baker	2	2	0
Mr. Henry W. Oulton	2	2	0
Mr. A. J. Smith	2	2	0
Mr. George Sheppard	2	2	0
Mr. Arthur H. Benson	2	2	0
Mr. W. J. Hepburn	2	2	0
Mr. H. R. C. Rutherford	1	1	0
Mr. J. M. Redington	1	1	0
Mr. W. L. Murphy	1	1	0
Dr. G. C. Sneyd	1	1	0
Mr. D. N. Morgan	1	1	0
Mr. C. M. Benson	1	1	0
Dr. W. M. Courtenay	1	1	0
Mr. Charles Greer	1	1	0
Dr. C. B. Pasley	1	0	0
Mrs. Gleeson	1	0	0
Miss Gleeson	0	10	0
Students R.C.S.I., per Mr. T. M. Thomson	11	4	4
Total	£263	12	4

POST-GRADUATE LECTURES.

To the Editor of THE LANCET.

SIR,—It is absolutely impossible for the large majority of country practitioners to attend courses of lectures in London. It occurs to me that it might be possible to bring the lectures within our reach on the lines of the University Extension Lectures. Perhaps arrangements might be made to hold courses at the county hospitals where there would be material for clinical instruction. I feel sure that a great many of us would gladly avail ourselves of such an opportunity of bringing our knowledge more up to date.

I am, Sir, yours faithfully,
Uckfield, Sussex March 19th, 1910. E. H. SWEET.

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—Mr. Moullin still leaves my question unanswered. The question I have raised is, "Are specialists in gastric surgery in a position to make a *general* statement from the cases sent them for operation, as to the frequency with which clinical proof of the existence of gastric ulcer precedes the onset of gastric cancer?" I say emphatically they are not, because the material they are dealing with is highly specialised, consisting largely of cases of gastric ulcer, old and recent. To this question Mr. Moullin has not replied. He now states that he does "not attach the least importance" to the opinions of the authorities I quoted, because "facts with which they were not acquainted have come to light since those opinions were formed." I challenge him to produce any facts justifying so strong a statement.

Dr. Wilson and Dr. MacCarty's paper does not help him, because they are in the same position as himself. But it affords a good illustration of the sort of material with which specialists in gastric surgery deal. Of 210 gastric cases operated on about 80 per cent. were cases of gastric ulcer, old or recent, complicated or not with gastric cancer. How many of the ulcers followed by cancer were sent for operation in mistake for gastric ulcer, or as actual cases of "ulcus carcinomatosum," or simply in doubt as "if not cancer, at all events intractable or recurring ulcer needing operation," we are not told. Such a series simply proves nothing as regards the frequency with which ulcer precedes cancer in general, and it is amazing such capable men cannot see it.

---

[1] THE LANCET, Feb. 19th, p. 542.

Mr. Moullin is very strong on "facts," but he confuses "facts" with the "inferences from facts." His facts, no doubt, are right enough. It is his inferences that I dispute. I observe he has not withdrawn the pathological statement which I showed to be erroneous in my last letter.

I am, Sir, yours faithfully,
Exeter, March 21st, 1910. W. Gordon.

CONGENITAL DIAPHRAGMATIC HERNIA.

To the Editor of The Lancet.

Sir,—On March 5th I was requested by the coroner to examine the body of an infant, aged 11 months, who had died, no medical aid having been called in. On opening the thorax I found the left half to contain what appeared like, and proved to be, peritoneum, the division of which disclosed about two-thirds of the entire small intestine and a small lobule of liver. At the very apex was an extremely atrophied lung ending in three small tentacles of lung tissue. Underneath this "peritoneal cyst" I found the heart closely bound, by its pericardium, to the left of the spinal column.

Anteriorly, from the median line for about two inches to the left the diaphragm was free and presented a falciform arch with tendinous border, through which the hernia had found its way into the thorax, probably very early in life, judging by the very atrophied lung. There was no strangulation, and the intestines had apparently performed their functions until death. The right lung was in a state of red hepatisation, accounting for the cause of death.

Perhaps you will consider this brief record sufficiently interesting for publication. May I add that it would interest me, and I hope some others, to learn of similar cases which may have been recognised during life? I would imagine that auscultation and percussion would have presented more curious and puzzling features than merely dulness of the right, and hyper-resonance of the left, with its "borborygmic râles" (?)

I am, Sir, yours faithfully,
William A. Fox, L.R.C.S. Edin.
Grange-over-Sands, March 12th, 1910.

TO MEDICAL FREEMASONS.

To the Editor of The Lancet.

Sir,—May I appeal to my brother masons who have votes to spare to send them to Mrs. Knight, 10, Elma-road, West Green-road, Tottenham, or to,

Yours faithfully,
138, Harley-street, W., March 12th, 1910. Fred. J. Smith.

To the Editor of The Lancet.

Sir,—May I once again through the medium of your widely read columns appeal to medical men, and medical Freemasons in particular, for votes for the Masonic charities. At the forthcoming elections in April and May there are two medical candidates. Votes for any of the Masonic institutions are equally acceptable, as exchanges can be effected, and will be gratefully received and acknowledged by me.

I am, Sir, yours faithfully,
William Wilson,
Secretary, St. Luke's Medical Lodge of Instruction.
184, Goldhawk-road, W., March 18th, 1909.

HEMEL HEMPSTEAD INFIRMARY.

To the Editor of The Lancet.

Sir,—I venture to ask leave to state that the Workhouse Nursing Association sent upon Feb. 22nd a further letter to the Local Government Board in answer to our memorial, a copy of which was published presumably by the guardians. In this further letter we explained various facts in the case, which the Board seem to have ignored and again pressed for a full inquiry. On March 4th we received an absolute refusal from the assistant secretary for any further inquiry or investigation; no reasons were given. We think it only right that the public should be in possession of these facts regarding a case of wide interest and great public importance. The correspondence is open to the inspection of the press, and of all interested in the subject of union infirmary management.

I am, Sir, yours faithfully,
March 17th, 1910. R. V. Gill, Secretary.

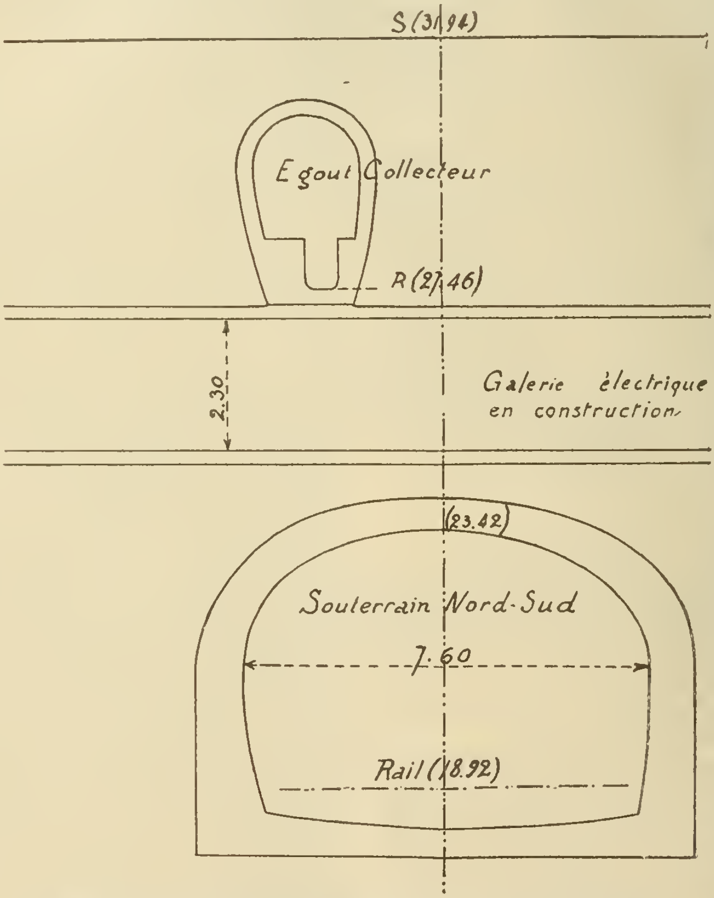
THE PUBLIC HEALTH AND THE PARIS FLOODS.

(From our Special Sanitary Commissioner.)

Paris, March 12th.

With the solitary exception of one sewer in the Rue Richepanse the sewers of Paris withstood successfully the enormous pressure put upon them during the recent floods. Now that the waters have subsided it is possible to see what has really happened. The Paris sewers measure in length about 700 miles. They cost £6,000,000 to build, and the quality of work done on so vast a scale has just been rudely tested. The sewers for the most part are made of masonry. A rough granulated and somewhat porous yet durable stone found in the neighbourhood of Paris has been generally used for this purpose. It is cemented, and the lower part of the sewers are or are supposed to be watertight, but the upper portions very often are not. Water oozes through the roofs and thus the sewers serve to drain the surrounding subsoil and keep it dry. But the culverts or lower channels of many of the sewers are now very much worn and in need of repairs. If some of these had burst it would scarcely have surprised anyone. As a matter of fact, even the one sewer known to have burst, that of the Rue Richepanse, did not do so in consequence of any inherent weakness. It appears that at the corner of the Rue St. Honoré and the Rue Richepanse there had until recently stood a house that was more than 300 years old. So dilapidated had it become that in the lease made out for the last tenant a clause was inserted by which the occupier undertook not to allow anyone to dance in the house for fear it should collapse. This old dwelling was pulled down and the construction of a new building was preceded by some deep digging in order to lay foundations and construct cellars. On each side of the Seine the soil is alluvial and porous, and as the water rises in the river so does it tend to rise in the subsoil of the low-lying quarters of Paris. During the recent floods all this porous soil was inundated and the level of the subsoil water rose and fell with the river, though it maintained a lower level. Thus when the water reached the level of 33·45 metres above the sea in the river at the Pont de la Concorde it was at 31·95 metres in the subsoil of the Place de la Concorde. The level of the adjoining Rue Richepanse is 31·94 metres above the sea. Consequently the subsoil waters in the Place de la Concorde rose above the level of the sewers in the Rue Richepanse and the Rue St. Honoré. The small amount of earth which separated these sewers from the pit caused by the deep digging necessitated by building the new house at this corner was soon saturated and disintegrated. Thereupon the whole side of the street fell into what will be the cellars and foundations of the house in course of construction. Thus laid bare and deprived of any sort of support, the walls of both sewers gave way and also fell into the cellar space. The accident may therefore be described rather as a land slide than as the bursting of sewers.

But there was another source of weakness at this particular spot. Passing along the Rue St. Honoré, immediately under the two sewers that meet at the angle of the Rue Richepanse and the Rue St. Honoré, is a gallery in course of construction. It measures 2·30 metres, or more than 7 feet in height, and is meant to prevent the overcrowding of the sewer with electric wires of all sorts. As this gallery is not intended to hold water or undergo any particular pressure, it is not as solidly built as the sewers, and therefore it readily gave way. The accompanying plan shows the arrangement. Still further down comes the Nord-Sud Underground Railway, which passes all along the Rue St. Florentin from the Place de la Concorde and the Rue Richepanse on to the Place de la Madeleine. The roof of this tube railway is 3·20 metres below the sewer, but in this space passes the electric gallery, which is 2·30 high, so that these three underground passages nearly touch each other. The roof of the railway tunnel is 23·42 metres and the rails 18·92 metres above the sea level. The water in the surrounding subsoil rose to close upon 32 metres above the sea level. No wonder, therefore, that the tube tunnelling was absolutely full of water and that the water surged up the steps of various stations, overflowing notably at the Place du Havre, in front of the St. Lazare station. What a picture this gives of the underground life of a great city and the new dangers such an existence has brought into being. Here are two thoroughfares crossing each other at right angles, each with a large sewer but a few feet under the level of the street. Below, at a greater distance, is the railway; but taking up nearly the whole of the space between the two passes a large lightly built gallery for electric wires. To dig deep down close to all this underground tunnelling must be more or less risky, and though probably nothing would have happened if the flood had not invaded the subsoil, the fact remains that the position must be a dangerous one. Even now at any unsuspected shock the sewer might open into the gallery below, and so into the railway still lower down. When the Rue Richepanse sewer burst the water mains had to be stopped at a considerable distance from the accident and all the houses in the intervening space found themselves suddenly deprived of drinking water. This was preferable to receiving water mixed with sewage, but was nevertheless inconvenient and even perilous. The authorities, recognising this, very promptly arrived with lead-piping which they laid down on the side walk close against the walls of the houses. Through cellar windows or doors smaller branch pipes were introduced, then the whole was connected with the nearest fire hydrant. Thus in a short time the houses had a water-supply again. These temporary lead-pipes are in the streets now, cause no inconvenience whatsoever, and show how water can quickly be brought to houses after the ordinary water mains have been broken. But if other sewers in the same neighbourhood had also come to grief, and other water mains had been destroyed, it would not have been so easy to promptly repair the mischief.



The above diagram represents a section of the underground arrangements where the Rue St. Honoré crosses at right angles the Rue Richepanse continued beyond the crossing as the Rue St. Florentin. The surface of the Rue Richepanse is 31·94 metres above sea level. Below is the main sewer showing the culvert, R.27·46 metres above sea level. Beneath is the gallery for electric mains in course of construction below the Rue St. Honoré. Below this gallery, and at right angles to it, following the Rue Richepanse and the Rue St. Florentin, runs the Nord-Sud underground railway.

To prevent accidents in streets or in houses there is a service which is more elaborate than that of the borough surveyors in England. This is the *Service de Voirie*, from the Latin *viarius*, that which concerns streets. The chief of this department in Paris is M. Bonnier, Architecte Voyer en Chef. Under his direction there is a large staff of architects. The 20 arrondissements into which Paris is divided have each in their employ several architects, who are held responsible for the district placed under their care. They constitute a sort of police of construction. They examine the plans of all new buildings for the department, and see that these are in keeping with the laws of the land and local regulations, and inspect and report constantly on the state of the streets and the buildings, every such "architect-inspector" being familiar with the problems of drainage, ventilation, heating, and so on. During the floods this department was naturally overwhelmed with work. Consequently all the *architectes voyers* were drawn off from the districts that had escaped from the floods so that they might assist their colleagues in the afflicted parts of Paris. They inspected all the houses, primarily to see if they were safe, to see if the walls or foundations were giving way under the influence of the water. Then they prescribed to the landlord what had to be done. They also distributed the circulars issued by the health authorities indicating how inundated premises should be cleansed and disinfected. Thus they powerfully seconded the efforts of Dr. Henry Thierry and the Technical Disinfecting Services of the Prefecture of the Seine.[1] The architects visited the cellars of the houses to see if the walls were giving way, but they also reported if they had been properly cleaned. If this had not been done satisfactorily, then the disinfecting department sent its men and they did the work themselves when there was any difficulty in getting it done by the landlord. But, as already stated, there was usually the greatest zeal displayed by all concerned, and every one was anxious to do whatever was said to be necessary. The architect inspectors also organised the plank bridging of the flooded streets so that the inhabitants were able to reach their houses and enter by the windows, if not by the doors. For these constructions the architects employed many of the men who had been thrown out of work by the flooding of the underground railway. If more accidents have not happened this immunity may in a measure be attributed to this excellent service. The peculiarities and history of every building in Paris are familiar to the *architecte voyer* of the district. Therefore, when the floods came there was at least one public functionary on the spot who knew which buildings were most likely to suffer and would be least able to resist the effects of the waters. These buildings were at once propped up and prevented from falling in the street. Thus no very serious accident has happened. In this manner has the security of the inhabitants of Paris been guarded, while the architects have also helped to preserve the health of the people by assisting the disinfecting department.

---

[1] See THE LANCET, March 12th, p. 754.

THE HARVEIAN LECTURE.—At a meeting of the Harveian Society on March 17th Dr. M. Handfield-Jones, the President, being in the chair, the Harveian lecture, "Remarks on Hydrocephalus," was given by Dr. Leonard Guthrie. The lecturer gave an interesting and exhaustive account of the subject, illustrated by slides and post-mortem specimens, and accompanied by numerous references and illustrative cases.

CHOLERA AND PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE following figures are in continuation of those published in my last letter (THE LANCET, Feb. 5th, p. 399):—

	Between Nov. 29th	and Dec. 5th	...	144 cases,	77 deaths.
	,, Dec. 6th	,, ,, 12th	...	100 ,,	38 ,,
	,, ,, 13th	,, ,, 19th	...	33 ,,	15 ,,
	,, ,, 20th	,, ,, 26th	...	24 ,,	5 ,,
	,, ,, 27th	,, Jan. 2nd	...	6 ,,	3 ,,
(	,, Jan. 3rd	,, ,, 9th	...	0 ,,	3 ,,)
(	,, ,, 10th	,, ,, 16th	...	1 ,,	2 ,,)
(	,, ,, 17th	,, ,, 23rd	...	0 ,,	0 ,,)

(All the above dates are according to the Old Style.)

The figures for the last three weeks in the above table are uncorrected and therefore appear in parentheses. It seems, however, certain that during the last three weeks the whole of Russia has, so far as is known, been quite free from cholera. It will be interesting to observe how long it remains so. Last year, it will be recalled, the epidemic did not die down until much later—in the spring, in fact; and the cholera-free interval was of very short duration, not more than a few weeks at the outside. Of the figures for the last three weeks in the above table, the three deaths in the week ending Jan. 9th occurred in Moscow; and the single case and two deaths in the following week in the Territory of the Don. The total number of cholera cases in the whole of Russia from the beginning of last year's epidemic down to Jan. 9th (22nd) is put at 20,646 and that of deaths at 9378.

The Serum Treatment of Cholera in Children.

Dr. Klibanskaia publishes in the *Vratch* (No. 1, Jan. 2–15th, 1910) an article on this subject. The conclusions that this lady doctor draws from her experiments in a children's hospital in St. Petersburg are the following: (1) the serum treatment of cholera in children markedly lowers the mortality, provided that the serum is injected into the veins, together with physiological salt solution, and that the treatment be begun not later than 12 hours after the appearance of symptoms; (2) hypodermic injection of the serum has no effect; and (3) in the "typhoid" state the serum is also useless. The intravenous injection of salt solution is essential in employing the serum treatment of cholera in children.

Plague in the Kirghiz Steppes.

These endemic centres of plague are still active. The following is a summary of the information recently published on the subject either in the Russian medical press or in communications made to the Board of Health in Constantinople by the Russian delegate. According to a telegram dated Dec. 14th (27th) there were then four centres of infection in the Uralsk province. In the first, situated at Tiumen, 90 *zemlianki* (half underground earth huts) were surrounded by a cordon; the disease there was lessening. In the second, near the Djambentin Bazâr, the cordon had been removed. In the third there had been no fresh cases. In the fourth the disease was limited to a place called Kankul, in the Abshtchensk *uyezd*. In the whole infected area there were registered on Dec. 11th (24th) 11 cases and 9 deaths; on the 12th (25th), 3 cases and 15 deaths. On the 13th (26th) 4 cases remained under treatment. A telegram dated Dec. 20th (Jan. 2nd) stated that pneumonic plague had appeared in the *urotchishtché* (Kirghiz settlement) of Akbalyk, in the Inner Kirghiz Horde, in the Astrakhan government, and that 8 cases with 3 deaths had been observed. A special correspondent of the *Russkoe Slovo* (quoted in the *Vratch*), who was sent to the infected area, reported on Dec. 23rd (Jan. 5th), that the beginning of the outbreak of plague in the Kirghiz steppes dates back to Nov. 12th (25th); that the Governor was only informed on Nov. 30th (Dec. 13th); that a medical officer was then sent to the infected districts; that he visited 21 *zemlianki;* that he found plague cases in 14; that in these huts he found 15 persons sick with plague, and 10 decomposing corpses, which had been lying there for about two weeks; that in all the plague centres in the Uralsk province down to Dec. 22nd (Jan. 4th) 189 cases of plague with 178 deaths had occurred. It is added that a third plague centre had developed at a point situated in the Astrakhan government, adjoining the Uralsk province; and that down to Dec. 22nd (Jan. 4th) 16 deaths had occurred at the above-named Akbalyk. A telegram from Astrakhan, dated Jan. 13th (26th), stated that suspected plague cases had been seen in another centre in the Kirghiz steppes, and that there had been 3 cases, all fatal. The telegram adds that the attacks only lasted a single day. The Government Gazette (*Official Messenger*) of Jan. 10th (23rd), however, stated that the government of Astrakhan and the Uralsk province had been officially declared free from plague. Finally, the same Gazette on Jan. 15th (28th) reported the discovery of a fresh centre of the disease in the camp of Naour-zali-Tchagil, situated in the Kirghiz steppes of the Astrakhan government, and stated that down to Jan. 12th (25th) 13 cases of plague had been observed here, with 11 deaths. On Jan. 24th (Feb. 6th) the same Gazette stated that in this new centre 13 fresh cases of the disease and 15 deaths had occurred between Jan. 13th (26th) and 20th (Feb. 2nd). Since the beginning of the outbreak 26 cases, all fatal, had been seen, and at the date of the telegram no cases remained under treatment. It may be noted that soon after the appearance of plague in these regions four medical men were sent from St. Petersburg to the Kirghiz steppes with a supply of plague serum, and with instructions to organise the measures needed to stamp out the infection. It is significantly added that "the conditions under which the doctors have to work in the Kirghiz steppes at this moment are exceptionally trying."

Plague in Jeddah.

It will be recalled that a case of plague was reported from Jeddah on Jan. 8th, and that the patient died on the 10th. On the 14th of the same month a second case was seen; the patient was already dead; he was an Indian, a native of Jeddah. On the 16th 1 death was reported, on the 19th 1 case, and finally on Feb. 3rd 1 death. Since then no further cases have been reported. It will be fortunate if this year's outbreak of plague in Jeddah should be limited to these 5 cases with 4 deaths. The suspected case landed in the lazaret of El Tor, of which mention was made in my last letter, proved not to be a case of plague.

The Returning Haj.

The pilgrimage season of 1909–10 (1327 of the Hegira) is now drawing to an end, and the bulk of the pilgrims have already left the Hedjaz. No case of cholera or plague has been seen among them. The Haj having been declared "infected" ("*brut*"), on account of the few cases of plague in Jeddah, severe measures have been applied to the pilgrims by whatever route they may have chosen to return. The question naturally arises, Is it really necessary or logical to apply these severe measures in the case of a pilgrimage such as the present, when a few sporadic cases of plague have been seen in the sole town of Jeddah, measures of just the same severity as would be applied if cholera were raging at Jeddah, Mecca, Medina, and throughout the Hedjaz? Yet such is the present practice as required by the International Conventions.

The Tebuk Lazaret on the Hedjaz Railway.

So far as may be judged at present the number of pilgrims returning from the Hedjaz by the new railway will prove to be this year about the same as in last year's pilgrimage. The completed figures for that year show that 14,126 pilgrims passed through the improvised lazaret at Tebuk. It is of interest to note the nationality of these pilgrims, as indicated by the following:—Indians, 136; Chinese, 55; Afghans, 53; Hedjazis, 434; Bokhariots, 2479; Bosniacs, 157; Herzegovinians, 5; Persians, 1202; from Tripoli (Africa), 345; Russians, 1335; Egyptians, 796; Algerians and Tunisians, 735; Moroccans, 309; from Irak Arabi (Mesopotamia), 321; Syrians, 3026; Anatoliotes (Asia Minor), 2101; Rumeliotes (Turkey in Europe), 492 Albanians, 37; Moroccan Dervishes, 37; (Italian labourers on the railway, 17); others, 21; total, 14,126. Though last year's lazaret at Tebuk was regarded as a provisional establishment it presented many of the characters of a permanent one. Ten "cordons" were provided for as many groups of pilgrims, and each was surrounded with an iron wire fencing of a substantial nature. A complete system of water pipes was laid down, bringing water from the station well and distributing it to each cordon. In the cordons the pilgrims were lodged in tents, and this will probably be the case until the question of constructing the permanent lazaret is taken in hand. A single disinfecting pavilion was in use, containing two large disinfecting stoves; it consists of a wooden building of the so-called "portable" type, furnished by a French firm, who make a specialty of such "pavillons démontables." A similar building served to lodge the principal members of the staff, and a second one for the same purpose has been put up for the present pilgrimage. The latrine arrangements are of necessity for the present of an improvised character; they consist of small wooden huts, covered with corrugated iron, each containing five latrines; the excreta are received in pits in the ground, and as soon as these are filled the hut is removed to another spot. The same system was until recently in use at the lazaret of El Tor. For the present Haj two additional "portable" buildings have been put up, besides those already referred to, one to serve as a store-room (depôt), the other as a hospital. Some £T.8000 have been spent in constructions and laying down the water-supply alone.

Constantinople, Feb. 24th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Vaccination in Bristol.

DURING 1908 8636 births were registered in Bristol. Of this number 4649 were successfully vaccinated, 40 were insusceptible, 1052 had conscientious exemption certificates, 820 died unvaccinated, 166 were medically postponed, 175 removed from the district, 770 removed to unknown places, and 964 were unaccounted for. During 1908, as above stated, 1052 "exemptions" were granted. In the first six months of 1909 620 were given. In 1909 the total number of certificates of successful primary vaccination received by the vaccination officers of the Bristol union amounted to 5377, and the certificates of conscientious objections, irrespective of the dates of birth of the children to which they relate, which were received by them during the year were 1331.

Bristol General Hospital.

The annual report of this institution was presented on March 14th at the half-yearly meeting of governors. The work of the hospital was greater last year than in any previous year; there were 2700 in-patients and 39,522 out-patients, with 5867 dental out-patients. The average daily percentage of occupied beds was 91·4, the average stay of each in-patient being 24·7 days. The maternity cases numbered 344. The total ordinary income (including refunded income-tax) amounted to £10,905; to this are added legacies amounting to £4482 and special donations of £2500 towards debt reduction. The total expenditure was £14,529, a reduction of £450 on 1908. The result is that the balance due to the treasurer, which was £4361 at the beginning of 1909, is now standing at £2937. The Lord Mayor, who presided, paid a tribute to the high standard of efficiency maintained in all departments of the hospital, and the sheriff also spoke. Mr. Herbert Baker, the chairman of the hospital committee, appealed to the public for an increase in the list of regular subscribers.

Bristol Royal Hospital for Sick Children and Women.

The annual meeting of the subscribers to this institution was held on March 1st under the presidency of the Lord Mayor. The medical report stated that during 1909 754 children and 60 women had been treated as in-patients, and 3512 children and 1491 women had been attended to in the out-patient department. 65 children had been sent to the convalescent home at Weston-super-Mare, which is in connexion with the charity. The financial statement showed that the income amounted to £4559 and the expenditure to £4719.

The Health of Taunton.

Dr. H. J. Alford, the medical officer of health of Taunton, in his annual report for 1909 states that the estimated population of the town is 22,245 and the area in statute acres 1438. The birth-rate per 1000 was 20·9. The death-rate was 15, but the corrected death-rate only 13·8 per 1000. The zymotic death-rate was 0·98 and the infantile mortality per 1000 births 111·5. The death-rate, zymotic death-rate, and infantile mortality were all below the average. Dr. Alford adds that the adoption of the Notification of Births Act had been of immense value in checking infantile mortality. He mentions that an outbreak of enteric fever occurred in October, which was traced to the milk-supply, and emphasises the danger from flies coming into contact with milk.

Cheltenham General Hospital and Dispensary.

The annual report of the Cheltenham General Hospital, which has just been issued, states that during 1909 the in-patients numbered 1016, a decrease of 24 compared with 1908. 4167 out-patients were treated, against 4123 in the previous year. At the branch dispensary in connexion with the institution 2293 patients were treated, a decrease of 473 compared with the preceding 12 months. The total income, exclusive of legacies £1422, was £4413. The expenditure amounted to £6952. The Hospital Sunday and Saturday collections showed a considerable falling off. Last month Lord St. Aldwyn formally opened the extension which has recently been made to the hospital. The enlargement provides accommodation for an additional 32 beds, bringing the number of beds in the institution up to 114. The cost of the undertaking has been £4800, of which £3750 have been subscribed in response to a public appeal for funds.

March 21st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Hospital for Sick Children, Edinburgh.

THIS admirable institution continues to do excellent work for the sick children of Edinburgh and yet the directors find it necessary to appeal for the funds required for its maintenance. The number of cases treated during the year was 2112. The ordinary income was £2431 less than the ordinary expenditure, but special donations and legacies saved the board from immediate financial anxiety. The sum obtained from church collections during the year only amounted to £24 8*s.* 10*d.* The convalescent home at Gullane was opened in June last, but it required from £800 to £1000 to run it. Lord MacKenzie, in speaking to the report at the annual meeting, referred to the influence on a child's mind of being in hospital—it was in many instances the opening up a new world and tended to bring out the good qualities of the child. He also spoke of the benefit that might be expected to follow upon the appointment by the directors of a lady visitor who would give the mothers help in regard to the treatment to be carried out in the child's own home. The chairman of the Chamber of Commerce also spoke of the need of wider interest being taken in the hospital. He referred to the reduction in the number of babies under one year that had been admitted and thought it was probably to be explained by the admirable system of lady health visitors that had been at work in the city for some time now.

Farm Colony for the Royal Victoria Hospital for Consumption, Edinburgh.

The authorities of the Royal Victoria Hospital for Consumption have acquired the mansion house of Springfield, near Polton, and 50 acres of ground for the purpose of a working farm colony in connexion with the hospital.

Partick Medical Society and Friendly Societies.

A resolution has been drawn up by the above medical society that "No new societies be taken by medical men in their district at a lower sum than 4*s.* per annum, and that all societies changing their medical officer be asked to conform to this scale." This does not involve a payment of 1*d.* a week per member, but the societies are unwilling to raise their contribution on the ground that it handicaps them in competition with those of neighbouring districts. Neighbouring medical societies have therefore been approached on the subject, and it is hoped that similar action will soon be taken throughout the Glasgow district.

Sidlaw Sanatorium: Transference Agreed to.

A meeting of the donors and annual subscribers to this sanatorium was held on March 17th, when it was decided to give the executive committee power to promote legislation to complete the transference. It was explained that only the income derived from the endowment fund, not the capital of the fund, would be drawn upon for expenses of transfer.

Aberdeen Dispensary: Annual Meeting.

The annual meeting of the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution was held recently in the Aberdeen town hall. The annual report showed that during the past year there had been treated at the dispensary nearly 14,000 cases, and 53,000 prescriptions had been dispensed. The financial statement showed a total deficit for the past year of £1161. This unfavourable condition of the finances led to considerable discussion. Various suggestions were offered with the view of bringing about an improved state of affairs. It was remitted to the committee of management to consider the advisability of promoting a bazaar at the end of the year in aid of the funds; also to consider the question of making a small charge towards the institution from all applicants for assistance.

March 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Diet in Diseases of the Kidneys.

AT a meeting of the Academy of Medicine held on March 1st a communication on the subject of diet in diseases of the kidneys was made by M. Linossier and M. Lemoine. Experiments carried out by them showed that all albuminoid substances of animal origin if injected under the skin gave rise to albuminuria and renal lesions. The explanation of the harmlessness of these substances when taken as ordinary articles of food was that their toxicity was destroyed when they were disintegrated by the gastric juice, but the toxic properties would become manifest if from any cause there was impairment of the digestive or renal functions. Patients suffering from diseases of the kidney should therefore avoid the use of albuminoid substances of animal origin unless well cooked. Meat ought never to be underdone; beef had a toxic action when insufficiently cooked; veal was preferable to beef, because it was always thoroughly cooked. In cooking eggs the white ought always to be coagulated. Uncooked milk might cause kidney trouble if it was imperfectly digested, and when patients suffering from albuminuria were placed on milk diet the milk ought to be boiled, especially if their stomachs were out of order.

Hospital Accommodation and Hygiene in the Navy.

The Under Secretary of State for the Navy has recently approved a recommendation which the Superior Commission of Naval Hygiene has made in reference to hospital accommodation on board ships of war. This new regulation, which will apply to vessels built in the year 1910 and subsequently, defines the number and position of the places to be appropriated for hospital purposes, and makes full provision for the the performance of major operations. Full directions are laid down for the accommodation and conveyance of the wounded. Systematic instruction in hygiene is also to be given. In particular, at the Naval School instruction will be given not only in hygiene but in such details of first-aid as might be useful to an officer of a submarine, a torpedo-boat, or other vessel manned by a small crew and therefore not carrying a surgeon. This instruction will have some influence on the examinations.

A Free Course of Surgical Anatomy at the Faculty of Medicine.

A free course of surgical anatomy is announced to be given in the large theatre of the Faculty of Medicine of Paris by M. Doyen, starting on April 18th. The lectures will be delivered daily for 15 days, Sundays excepted, between 6 and 7 o'clock in the evening. M. Doyen intends to demonstrate the advantage of the anatomical method which he has worked out to establish his principles of operative surgery.

A Centenarian Doctor.

The hundredth anniversary of the birthday of M. Jean Charles Boullé, described by some of the Paris journals as the *doyen* of French medical practitioners, has just been celebrated at Saint Valérien, near Sens. The proceedings consisted of the presentation of an address by the municipality, the mayor, accompanied by all the municipal bodies, waiting upon the venerable physician at his residence, the exterior of which was decorated in honour of the event. Afterwards all the school children of the district waited upon Dr. Boullé, who, after receiving them, entertained them at dinner at the *mairie*. A banquet was also given, at which the under Prefect, M. Blachon, presided, covers being laid for 150 guests. The Minister of Instruction was represented and the local Parliamentary representatives were present. The usual speeches followed, and it was announced that the Academy of Medicine had appointed Dr. Boullé an officer. The doctor, who has an *aspect chétif*, is still alert and erect, with a long white beard. Replying to the congratulations of the company, Dr. Boullé became reminiscent. "My father and my grandfather," he said, "were in practice in this district before me; in other words, the sick of the neighbourhood since 1750 have been under the care of my family. In my father's time we led the life of peasants, living more on potatoes than joints of meat. My father when he was not attending to the sick cultivated his land. In this modest way he reared six children, all of whom, I am proud to say, did well. My first preceptor in medicine was Dr. Retif of Sens. In the autumn of 1828 I went to Paris to complete my studies. I lived in the Latin quarter and paid 5 francs a month for a bedroom and study. I was in Paris during the troubles of 1830 but I took no side. After 1848 I was elected Republican mayor of Saint Valérien. In 1851 I protested against the *coup d'état*. I escaped arrest, for my adversaries interceded for me. I saw '70. Prussian soldiers occupied this place. It was a sad time." It was only two years ago that this veteran took an active part in saving his books and papers when his house was on fire. He attributes his health and longevity to eating and drinking with moderation, to the pure air of Burgundy, and to the active life which he has led. His youngest son, a doctor of medicine, 67 years of age, was present at the banquet. Dr. Boullé later presided at a ball given in his honour.

March 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Feeding of School Children.

Dr. Bernhardt, a medical officer to the Berlin municipal schools, has carried out an investigation into the feeding of children of some schools in the centre of Berlin. The investigation was continued for four years, and included 8451 children. He found that 6·8 per cent. of the children came to school without breakfast. In the majority of cases this was due to negligence or drunkenness of the mother. Many children received only black coffee or dry bread; in one case, that of a boy aged 7 years, the breakfast consisted of a mineral water. In the minority of cases only the parents were too poor to procure breakfast. This was the case in a girl, 12 years of age, who not only had to cook for her father and her brothers and sisters and to look after their dwelling, but also did the work of her sick mother as a charwoman. The girl worked from 5 o'clock in the morning till nearly midnight, and it was her uncontrollable sleepiness during lesson hours that drew the attention of the teacher to her domestic conditions. It was found also that some hundred children got their dinner between 6 and 8 o'clock in the evening, six of them between 8 and 9, and seven between 9 and 10. During the day the children received coffee and bread-and-butter. In a very few cases there was no dinner at all, but only coffee, bread, and potatoes were given. Dr. Bernhardt recommended that breakfast should be given on behalf of the school on a larger scale than had hitherto been the case, and that the school should begin at a later hour to allow the children longer time for sleep.

A Remedy for Sea-sickness.

Dr. Pauly, a medical officer to the Hamburg-America Line, has recommended veronal-sodium as a remedy for sea-sickness. Veronal alone has been used on a large scale by Dr. Schepelmann, of the same line, and the results were good, but the drawback is that it is not freely soluble in water, so that a great quantity of fluid has to be swallowed for an efficient dose. Moreover, the veronal is absorbed by the gastro-intestinal canal in alkaline form, only being converted into that form by the alkalising properties of the intestines. Practical experience shows that it is best to administer the compound in an alkaline form. Dr. Pauly has cured 50 cases, one being that of a lady who had travelled for the seventh time from America to Europe and had always suffered severely from sea-sickness. She began with a dose of 0·5 gramme, taking 0·25 gramme four hours later and repeating the latter dose twice for the next two days. She was quite well during the journey and was able to participate at the meals. Dr. Pauly recommended the prescribing of 0·25 to 0·5 gramme for an initial dose, which sometimes sufficed to produce the desired effect. In cases where the condition was already established 0·25 gramme was given three or four times a day and only in a few very severe cases six times a day. No undesirable symptoms ever appeared—the patients complained only of a certain amount of lassitude. Vomiting was prevented in all but two cases. The compound was administered in the form of tablets dissolved in water. The patients after a few doses were able to take and to retain food.

Nervous Emaciation.

At a meeting of this society Professor Holländer showed a girl who after a sudden fright underwent a progressive atrophy of the subcutaneous fat. The face, the neck, the trunk, and the arms were totally deprived of fat; the complexion was death-like; the action of the muscles was completely visible through the skin. In marked contrast there was a diffuse lipomatosis on the femur and on the nates. The patient felt quite well, but her appearance was so distressing that she declined to leave her home in daylight. Examination of the nervous system revealed nothing except a rotatory nystagmus. Notwithstanding a special diet for years no improvement was obtained, and Professor Holländer accordingly tried to improve the face by injections of human fat. The fat was liquefied at a temperature of 37° C. and then ten syringefuls were injected. The complexion became normal after the injection, but unfortunately after two months the fat was nearly totally absorbed. A mixture of human fat and mutton suet was accordingly injected, which proved to be more consistent, so that a fairly good result was obtained.

Congress of the German Surgical Society.

The thirty-ninth Congress of the German Surgical Society will be held in Berlin from March 30th to April 2nd. Several particulars of this were announced in THE LANCET of Feb. 12th, p. 469. A second circular relating to the congress has now been issued by Dr. Bier, the president, which gives the titles of the 129 papers which have been entered for the agenda, so that members may be advised of the subjects proposed to be brought forward and prepared for their discussion. According to the rules only 70 papers should be announced on the programme, but many will no doubt be withdrawn before the final programme is issued and used instead as bases for discussion in connexion with other leading papers. The chief papers to be laid before the congress will be: on the first day, "The Surgical Treatment of Epilepsy," by Dr. Krause and Dr. Tilmann; on the second day, "The Surgical Treatment of Stenosis and Rigid Dilatation of the Thorax," by Dr. Freund and Dr. Mohr; and on the third day, "The Surgical Treatment of Acute Appendicitis," by Dr. Kümmell and Dr. Sonnenburg.

March 21st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Baron Garofalo on the Latin and Teutonic Races.

NO one speaks with more authority in Italy, or even in Europe, on ethnological distinctions than the Senator Baron Raffaelle Garofalo, sometime professor of criminology in the University of Naples, now head of the Administration of Justice at Venice. Lecturing in Milan the other day to a distinguished audience—his theme "The Latin and the Anglo-Saxon Civilisation"—he read his compatriots a severe, if salutary, lesson on their defects, moral and intellectual, defects which are but feebly made good by the education which in Italy contrasts so unfavourably with that enjoyed by the British or North American youth. He dwelt on the emotional susceptibility of the Latin, particularly the Italian, subject, so easily swayed by appeals to the passions, so wanting in respect to legal authority, so deficient in that "sense of citizenship" which controls political, even municipal, movement in the British Isles. "What you want," said Garibaldi some 30 years ago to an audience of modern Romans, "is the English steadiness," the power of "thinking twice" before acting on a seductive theory and committing one's self to the "popularis aura," heedless of the direction in which it blows. "Ill-inspired enthusiasm," Baron Garofalo maintained, is responsible for the ineffectiveness of public life in the Italian, as in the cognate races, and in illustration of this he showed the evil consequences of recent legislation, conceding privileges and indulgences to a proletariat not educated enough to appreciate them or turn them to wholesome account. The "riposo festivo," for instance, or Italy's new equivalent to the "day of rest" traditional in the British Isles, he denounced as a premature concession to the masses, with whom it had come to mean only another opportunity for dissipation, to the advantage of the liquor trade and the purveyors of more than questionable forms of entertainment, issuing in the increase of that new curse of Italy, alcoholism, and of that old, old sin of the Latin races, premature sexual indulgence. The lecture, as reported in the daily press, has evoked from radical and moderate parties alike a cordial welcome, reinforcing, as it cannot fail to do, the educational reforms which, beginning with the family, will gradually leaven the municipal and civic life, and after this the nation as a whole.

"La Donna Fatale."

The twentieth century, not yet in its teens, has been strangely prolific in *causes célèbres* in the New World as in the Old, on the north as on the south side of the Alps. Italy especially has contributed to the catalogue of these, her Palizzolo, Musolino, and Murri trials having thrown into the shade even those in her sister France—the Humbert and the Steinheil "dramas" included. Even the three former, however, seem likely to be eclipsed by the "processo" now uncoiling itself at Venice, in which, it is fair to say, the protagonists are not Italian but Slav, the "heroine" indeed being of Irish extraction, though of continental upbringing. She is at present the "donna fatale" of Italian medico-psychologists, an unusually large number of whom have been retained by the prosecution and the defence alike, and whose evidence evoked and checked under cross-examination by forensic criminologists is awaited with the keenest interest by the public and particularly by the profession. Dr. Enrico Morselli, professor of psychiatry in the University of Genoa, is only one out of a long list of experts hardly less authoritative in this most fascinating, if debateable, department of medicine, and their intervention as witnesses will invest with a scientific value the unfolding of a trial exceptionally rich in dramatic situation and in what Carlyle called "diseased developments."

March 16th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Hygienic and Sanitary Measures.

THE council of the municipality of Constantinople has been considering certain necessary hygienic and sanitary measures to be adopted in order to improve the conditions of public health of the city. Thus it has been decided to submit to the Ministry of Evkaf (i.e., the body having charge of "pious foundations") the urgent advisability of forming a commission, whose office would be to elaborate rules and regulations for the satisfactory carrying out of the principles of sanitation in mosques, *medressés* (theological seminaries), and other religious establishments. The total neglect of the cemeteries scattered over the city has also received attention by the municipality, as well as the manner in which a proper census of the population should be taken. Another measure that will prove of great benefit to public health is one whereby pharmacists have been forbidden to sell any poisonous substance without a prescription from a medical practitioner.

A Proposed Greek Hospital for Pera.

The late Greek philanthropists Nicolas and Helene Zarifi left a legacy of 2,500,000 francs to be used for charitable purposes among the Greek elements of the population of the Ottoman metropolis. It seems that no definite stipulation was left as to how the money should be used. The other day a meeting consisting exclusively of Greek medical men was held in the *Syllogos* to discuss the possibility of building a Greek hospital in Pera. It has been decided, so I am informed, to submit to the Greek Patriarch, the Hellenic Government, and the heirs of the Zarifi family that there is a great need of a Greek hospital in Pera and that the sum in question could be very appropriately used for the erection of such a charitable establishment.

Professor Dr. Hikmet Bey.

In consequence of the considerable retrenchments in the Budget made by the former Minister of Public Instruction, Dr. Hikmet Bey, who was acting as professor of anatomy in the medical school of Haidar Pasha, was dismissed from his post, and being a military medical man was attached to the fifth battalion at Yildiz with a very inadequate salary. This case is remarkable as illustrating one of the many cases in which military physicians have to suffer under some dissatisfactory aspects of the new *régime*. Dr. Hickmet Bey's lot, however, turned out to be much happier than that of many others of his *confrères*. The students of the medical school submitted a petition to the present Minister of Public Instruction requesting that Hikmet Bey, an excellent as well as a popular teacher, should again be seated in the chair of anatomy, and the request of the students has now been granted, the necessary provision for stipend being made in the new Budget.

Leprosy among the Students of the Naval School.

The Turkish newspaper *Ikdam* states that several students of the Naval School at Halki (an island in the Ismid Gulf of Marmora) are suffering from leprosy. The attention of the responsible authorities is being drawn to the necessity of isolating the patients.

Cerebro-spinal Meningitis in Jerusalem.

A somewhat alarming epidemic of cerebro-spinal meningitis is reported from Jerusalem. Up to now as many as 75 cases have been recorded. It is thought that there must be many more cases which escape the notice of the medical authorities, as the population is ignorant of the disease and seldom thinks it necessary to apply strict measures. A peculiar characteristic of this epidemic is that its attacks, as reported, have been limited almost exclusively to the Jews. The reason is believed to be their poverty as well as their lack of knowledge of the most elementary principles of hygiene. They live with their usually big families in one small room, and the sanitary conditions of their houses and courts are deplorable. The streets are frequently encumbered by refuse that remains lying in them for days. The municipal authorities of Jerusalem are not enterprising and the water and drainage system of the city are stated to be extremely bad. The suggestion that only the Jewish population is ignorant and dirty is very one-sided.

March 12th.

UNITED STATES OF AMERICA.

(From our own Correspondents.)

Conference of the Hook-Worm Disease (Uncinariasis) Commission.

The commission created by the generosity of Mr. Rockefeller for the purpose of studying the "hook-worm disease" of the Southern States and reporting measures of prevention has met at its first session at Atlanta, Georgia, under the auspices of the Georgia State Board of Health in conference with delegates from 18 States. The number in attendance was 500, and the proceedings show that a deep interest was taken in the work of the commission. Papers were read on the "History and Zoologic Aspect of the Hook-Worm Disease"; "The Symptoms of Uncinariasis"; "The Pathology of Uncinariasis"; "The Treatment of Hook-Worm Disease"; "Educational Campaign Against Hook-Worm in Texas"; and "The Excessive Waste of American Life and How Life Insurance Companies could Assist in Checking It." The discussion on these and kindred subjects was earnest and practical in the highest degree and gave positive assurance that the remarkable act of private benevolence on the part of the donor in endowing the commission with $1,000,000 is to become of even more than national importance. Some of the facts relating to the disease which were established by this conference are of general interest. It appeared that the disease was more widely disseminated than was heretofore known. Cases were reported from extreme parts of the country, but they were always traceable to carriers of infection from the States populated by the negro, who originally brought the germ from Africa. The infection is heaviest and greatest along the sand area; the next heaviest infection occurs in the Appalachian region; in general the clay-land region is less infected. It was suggested that no known disease is more easily diagnosed, more easily cured, and more easily prevented.

Suits for Malpractice in the State of New York.

The New York State Medical Society has an organised scheme of defence of its members who may be brought into court for alleged malpractice. It employs an attorney who conducts every case without charge to the member who is defendant. At the late meeting of the society the attorney reported that no year in the history of organised malpractice defence has been so fruitful of results in the stamping out of blackmailing cases as the present one. More cases have been tried than in any other year, which he attributes to the fact that more physicians have become members of the society, largely for the protection which they derive from the support which the society gives them when threatened with an action for malpractice. Eighteen cases have been actually tried with but one failure to secure a verdict in favour of the defendant and in that case a new trial is sought. Since the society organised this service in 1900 a total of 250 cases have come before the attorney, and of that number 138 have been actually tried, and none finally lost, and one is now on appeal. Not one dollar of damages has ever been paid. During the past year a majority of cases begun are by women plaintiffs, which the attorney suggests may be due to the belief of their lawyers that such clients are more likely to enlist the sympathies of juries.

The Prevention of Crime by Treatment of Defectives.

The establishment of "Children's Courts" in the larger cities has led to a proposition to erect a hospital for defective children arrested for crime in New York. These courts make a very careful study of the history of each child and of its physical condition, and it appears that large numbers are susceptible of such treatment as, it is believed, will effectually change their vicious propensities. The question of undertaking the reformation of these children by hospital treatment has so appealed to the public that Mrs. W. K. Vanderbilt has offered to contribute nearly the entire sum of $1,000,000 deemed necessary to establish and equip the hospital. It is proposed to have every child brought before the court under the age of 16 years committed to this institution, where it will be thoroughly examined as to its history, habits, and physical condition, and a course of treatment will be adopted according to the results of such examination.

The Antivivisectionist Campaign.

For years the medical profession in this country has been watching with sympathetic interest the persistent persecution of its scientific *confrères* in Great Britain at the hands of the antivivisectionist zealots. We shall now have to reserve our sympathy for ourselves, for a vigorous campaign has been set in motion to impede all scientific research in this country also. It is marked from the outset by the methods with which you are so painfully familiar, and we may expect here a display of the tactics that have characterised the onslaught on your side of the Atlantic. The campaign opened by a series of sensational articles in the *New York Herald* regarding alleged horrors said to be constantly perpetrated in the Rockefeller Institute for Medical Research. A forcible reply by Dr. Simon Flexner, director of the Institute, appeared in the *New York Times*. Another mode of attack was an exhibition in New York of alleged vivisection horrors. Fortunately, the profession here awoke some little time ago to the threatening danger, and followed the admirable example set us in the old country by the establishment of the Council on Defence of Medical Research of the American Medical Association. This organisation recently began the publication in the association's journal of a series of admirable papers on the benefits in various fields directly resulting from animal experimentation. Of these one of the most interesting so far is that by

Dr. E. L. Trudeau on Animal Experimentation in Tuberculosis. It is probable that the wide public interest now taken in the fight against tuberculosis will bring this paper more directly under the public eye than could possibly be attained by any other phase of the subject. It is to be hoped that the anti-tuberculosis societies with which the country is permeated may see their way to make a wide distribution of it.

A Testimonial to Dr. Trudeau.

Speaking of Dr. Trudeau reminds one that this "great teacher of the Adirondacks" recently celebrated the twenty-fifth anniversary of the establishment of the Adirondack Cottage Sanatorium at Saranac Lake, which has been the model for so many other institutions of like kind, and in which so much excellent research work has been carried on hand in hand with beneficent clinical undertakings. All survivors who have been patients at the sanatorium during the 25 years were invited. Dr. Trudeau was presented with a handsome book containing tributes from patients both present and past.

Honour to an Octogenarian.

The fifteenth annual dinner of the Mount Sinai Hospital Alumni Association was remarkable in that it became also the celebration of the fiftieth year of continuous service at that hospital of Dr. Abraham Jacobi, who will reach his eightieth year next May. Felicitous speeches were made by Dr. Charles H. May, Professor W. H. Welch, Dr. John A. Wyeth, Dr. Joseph D. Bryant, Dr. Arpad G. Gerster, and Mr. Philip J. Goodhart, the last on behalf of the board of directors of the hospital. A gold medal suitably inscribed was presented to Dr. Jacobi. Dr. Jacobi's sterling qualities, profound learning, uncompromising aversion to all shams and to everything derogatory to the professional ideal of medicine, have contributed to make him one of the most revered physicians in the United States.

Death of Dr. Follen Cabot.

In the death of Dr. Follen Cabot at the early age of 40, New York loses a surgeon of past achievement and future promise. He was descended from John Cabot, brother of Sebastian Cabot the explorer. He had held the chair of genito-urinary diseases at the New York Post-graduate School since 1907.

Release of a Typhoid Carrier.

Some years ago a whole series of typhoid epidemics was traced to a woman cook who was found to be a bacillus carrier, and who received the sobriquet of "Typhoid Mary." She was quarantined on North Brothers' Island, New York, where she has remained for the past three years under supervision. She has recently been released by the Board of Health, subject to the conditions that she does not resume her occupation of cook and that she reports herself regularly to the Board.

Prison Reform in Missouri.

A reform measure of no little interest in regard to the treatment of criminals has been instituted in the State of Missouri. The warden of the State penitentiary has abolished the striped convict clothing hitherto worn and has substituted therefor a semi-military blue costume. This innovation is based on the view that the "prison stripes" tend to degrade a man in his own self-esteem and thereby to lessen the chances of his reform. Moreover, the diet has been improved by the substitution of prime meat for the cheaper joints that hitherto have been in vogue. Shower-baths also have been installed and each prisoner is given one twice a week. The prisoners seem to appreciate these efforts to re-humanise them and have passed resolutions pledging themselves to show their appreciation in their conduct; and I am authoritatively informed that breaches of discipline and insubordination have decreased 50 per cent. up to date. Of course, there are those who argue that the "parlour method" of treating convicts will tend to lessen the deterrent effect of a penitentiary sentence. But it may be replied that the public degrading of prisoners has not so far proved any too efficacious in preventing crime, and, further, that it is at least as important not to make a hardened criminal out of every offender who has once transgressed as it is to prevent others by terrorism from taking a first step in crime. This is only another instance of Missouri's forwardness in social economic matters, for it was a St. Louis judge who instituted the "Pollard pledge system" of dealing with habitual inebriates, which has been widely copied, not only in this country, but I believe in England also. Another reform in matters criminal was initiated in the same city by the establishment of a standing commission of neurologists of acknowledged reputation, who, on the request of the prison physician or authorities, examine and report before trial on all prisoners detained on a criminal charge, if there is the least ground for supposing that they are in any degree irresponsible. The commission being a voluntary one, without legal countenance other than the confidence of the court, its decisions are, of course, open to challenge, but it is a noteworthy fact that in the four years of the commission's existence its decision never has been challenged, and that the plea of irresponsibility has never been offered in defence at a trial after the commission had pronounced to the contrary. On the other hand, in the case of pauper criminals it performs a humane duty by reporting any cases of irresponsibility among those awaiting trial, whereon the judge at once issues a writ *de lunatico inquirendo* without waiting until the trial shall have involved the State in considerable expense, and the insane are thus spared criminal sentence. The success of the commission has been so far demonstrated that the St. Louis Medico-Legal Society is now endeavouring to have it constituted an official body by act of the Legislature.

What is Whisky?

Some time ago the question "What is whisky?" occupied public attention (and your columns) in England. We have just had a ruling here, approved by the Federal Departments of Agriculture, the Treasury, and Commerce and Labour, to the effect that "all unmixed distilled spirits from grain, coloured and flavoured with harmless colour and flavour, in the customary ways, either by the charred barrel process or by the addition of caramel and harmless flavour, of potable strength, and not less than 80 proof, are entitled to the name whisky without qualification. ...... Whiskies of the same or different kinds, i.e., straight whisky, rectified whisky, redistilled whisky, and neutral spirits whisky or like substances and mixtures of such whiskies, with or without harmless colour or flavour used for purposes of colouring and flavouring only, are blends under the law, and must be so labelled. ...... Since the term whisky is restricted to distillates of grain, and distillates from grain and distillates from other sources are unlike substances, such distillates from other sources without admixture with grain distillates are misbranded if labelled 'whisky' without qualification or as a blend of whiskies. However, mixtures of whisky with a potable alcoholic distillate from sources other than grain, such as cane, fruit, or vegetables, are not misbranded if labelled compound whisky," provided certain requirements of the law are complied with. It is more than probable that this ruling will knock out a good many so-called whiskies from the market, for much of the vitriolic stuff that has hitherto been sold as whisky in some parts of the country would find it impossible to trace even a strain of grain in its lineage.

The Dietary of Soldiers.

The experiments of Professor Chittenden of Yale made some years ago on a squad of soldiers, from which he arrived at the conclusion that both life and health can be adequately sustained on a much more meagre diet than had hitherto been supposed possible, have been challenged within the past few days by Major Woodruff of the Army Medical Corps. Major Woodruff's later investigations appear to show that although the men were reported in fine condition at the end of Professor Chittenden's experiments, most of those experimented on suffered severely, and he asserts that they would have suffered still more had they not surreptitiously taken other meals than those prescribed during the experiments.

March 7th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Feb. 5th show 14,144 deaths for all India and Burma, as compared with 12,364 in the week preceding. Of these, the Bombay Presidency reported 881; Bengal Presidency, 1601; the United Provinces, 6601; the Punjab, 2645; Burma, 256; the Central Provinces, 1288; Central India, 61; and Rajputana, 654. Ballia and Azamgarh districts continue to be the districts most affected in the United Provinces. For the week ending Feb. 12th similar returns show 15,286 deaths for all India and Burma. Bombay Presidency reported 1015; Bengal Presidency, 2120; the United Provinces, 6700; the Punjab, 2318; Burma, 265; the Central Provinces, 1706; Rajputana, 918; and Central India, 76.

The Health of Bombay City.

The more important feature of the health returns for the city and suburbs of Bombay for the past week is the continued rise in the prevalence of plague. As a general rule, the warm weather leads to a reduction in the incidence of plague, owing to the poorer classes of natives sleeping out of doors in the open air instead of in their houses, where they are more exposed to fleas. The increase of plague during the warmer weather of the last week is therefore rather peculiar. Last week there were 60 deaths from plague, as against 29 in the week before and 28 in the corresponding week of last year. Small-pox continues to be prevalent, the deaths being 24, against 21 in the previous week. There were 62 attacks from small-pox, and of these 16 cases occurred amongst the pilgrims returning from Jeddah. Small-pox occurring in Bombay city is of the utmost importance for European tourists to guard against, as many of these wanderers arrive at Bombay after a long sea voyage and have of necessity a quantity of soiled linen to be washed. The washing is carried out by native washermen on the outskirts of the city, and the clothing is mixed indiscriminately with native soiled linen, so that infection may very easily take place. The articles are next taken by the washermen to their hovels in the slums to be made up and are thus again exposed to a grave danger of infection. The mortality from all causes in Bombay City has risen in the last week to 734 as against 662 in the previous week and 700 last year, the increase being largely due to the increased prevalence of plague. It is still, however, well below the five year annual mean, which is 883. The corrected death-rate of the population is 37·59 per 1000, as against 32·14, which represents the ratio prior to the prevalence of plague.

Inspections by the Commander-in-Chief.

The new Commander-in-Chief, accompanied by a small staff, has been making a tour of inspection of some of the more important Indian military cantonment stations. Following the custom initiated by his predecessor Lord Kitchener, Sir O'Moore Creagh contents himself with a small retinue of his staff and does not travel about with the same *éclat* and large following that was wont to be the rule in former days when a commander-in-chief went his round of inspections. His Excellency has created a favourable impression amongst the native classes by being master of many Indian dialects, and he has also shown his sympathy in the question of prevention of disease as well as sanitation. On his way to Lucknow last week he broke his journey at Cawnpore, and after his inspections attended a garden party given in his honour by the officers of the Royal Army Medical Corps of the station, which was very largely attended and most successful.

A New Health Resort for Madras.

The unusual cold of the present winter in Madras, more especially in the Nilgiri Hills, has resulted in an epidemic of influenza occurring both at Ootacamund and Coonoor; this has caused sufferers to look about for some health resort, cheap and easy of access, where they might shake off their ailment and convalesce. It was found that the place that has proved of most benefit was Metapolliam, a village which is a terminus of the Madras broad-gauge railway. Metapolliam has recently developed in size, and several nice bungalows have been built which can be rented for short periods. The railway station may before long become a junction, as another line is in prospect and the survey is actually in progress. Visitors from the Madras Presidency, especially the north, will be glad to hear of Metapolliam and its advantages, as when the south-west monsoon rains make Ootacamund, and the north-east Coonoor, depressing they can take a change of air at little cost and live well at Metapolliam, for much less than it is possible to live on the plateau. Convalescents will return to their homes renovated in health after an exhilarating change of air. Metapolliam is open to both monsoon winds but to a minimum rainfall. Its elevation is from 1000 to 1200 feet above mean sea level. On both sides of its river, which rises in the hills, large indiarubber plantations are springing up and appear to be in a flourishing condition.

Feb. 19th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Epidemic among Poultry.

RECENTLY mention was made of a mysterious mortality among wild fowl in a certain district in Victoria. This epidemic disease has spread in various quarters, and caused great destruction of domestic poultry. Professor Gilruth of the University of Melbourne states that in one chicken submitted to him he has discovered the bacillus of chicken cholera. Dr. Brown, the Government inspector of export foodstuff, is of opinion that the disease is roup.

Insanity in Victoria.

The report of the Inspector-General states that the number of certified insane in Victoria has risen during 1908 from 5052 to 5111. The proportion of insane persons to the general population is now 1 in 248. This is the highest ratio of any Australian State, but it is the least fluctuating. Recent legislation has caused a number of new patients to come within the ken of the department, so that of late the increase is more apparent than real and there is actually a decrease of freshly-occurring cases of insanity. The cost of maintenance was 10*s.* 4½*d.* per week per patient, as against 9*s.* 8¾*d.* for the previous year. Dr. Jones considers that the provision for pathological work is not satisfactory, and that it is essential that a whole-time pathologist should be appointed, with general control over the work. The plans for a new asylum are nearly ready for Cabinet consideration. The site will be about eight miles from Melbourne, where the Government has an estate of 208 acres, which, however, Dr. Jones considers inadequate and recommends the purchase of an adjoining estate of 1000 acres in addition. When the new building is available the present asylum at Kew will be abandoned.

Tropical Diseases.

The Queensland Institute of Tropical Medicine was practically inaugurated at Townsville on Jan. 4th. The new director, Dr. A. Breinl, was entertained at dinner by Dr. Frodsham, Anglican Bishop of North Queensland, who was the originator of the scheme. Dr. Breinl, in the course of a speech, stated he had promises of aid from the Australian Universities and Commonwealth and States Governments. He dwelt on the necessity of solving the question of making tropical regions habitable both from humanitarian and commercial standpoints.

Public Health in Tasmania.

In his report on public health in Tasmania for the year ended June 30th, 1909, Dr. J. S. C. Elkington, the chief health officer, says that the position claimed by Tasmania as the sanatorium State of the Commonwealth demands for its justification a relatively high standard of sanitation, but the actual conditions nevertheless fall short of this. The incidence of communicable diseases in Tasmania is also somewhat high, for among a population of 185,824 persons living under exceptionally favourable natural conditions there were 391 cases of typhoid fever and 205 cases of diphtheria reported in 12 months, together with 180 deaths from tuberculous diseases. Apart, however, from these special causes of illness, the vital statistics of Tasmania for 1908 were satisfactory, the births being 30·5 per 1000, the total deaths 11·5 per 1000, and the marriages 7·7 per 1000. Dr. Elkington draws particular attention to the apathy of local authorities as regards the protection of sources of water-supply, photographs of six examples being shown. One of these was a view in the vicinity of a river about two miles above the in-take of the Longford water-supply, at a place where open gutters only 40 or 50 feet long and terminating in the river were habitually used for latrine purposes.

Remarkable Family Longevity.

A family of five brothers named Carpenter arrived in Australia in 1839 in the sailing ship *Orestes*. Recently they met, after 70 years, in Newcastle, N.S.W. Their present ages are 83, 81, 77, 74, and 70 years respectively, and all are hale and hearty.

Personal Items.

Mr. G. A. Syme, F.R.C.S. Eng., who has been absent on an extended European and American tour, has returned to Melbourne. He was present at the Empire Press Conference as a representative of the Melbourne *Age* newspaper, which was owned by an uncle and which is still retained by the family.—Dr. Elkington has taken over the position of chief health officer for Queensland, rendered vacant by the resignation of Dr. B. B. Ham.

Feb. 6th.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examinations have been admitted Fellows of the College:—

Miss E. R. Benjamin, O. St. J. Gogarty, W. E. Hopkins, J. T. Murphy, and C. B. Pasley.

The following candidates have passed the Primary part of the examination:—

L. L. Cassidy, H. English, M. J. Hillery, K. T. Nath, and C. G. Sherlock.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.—A course of 20 lectures on Organs of Embryonic and Fœtal Nutrition will be delivered by Mr. Richard Assheton, M.A., at the Imperial College of Science and Technology, Kensington, on Tuesdays and Thursdays, at 5 P.M., beginning on April 19th. A practical work class will be arranged in connexion with this course. Another important course will be given at the same college on Marine Biology and Fishery Investigations by Dr. J. E. Allen, director of the Laboratories of the Marine Biological Association of the United Kingdom, beginning on April 19th. Those wishing to attend either of these courses should send in their names to the secretary as soon as possible.

CONGRESS OF GERMAN SOCIETY FOR ORTHOPÆDIC SURGERY.—The President of the Ninth Congress of the Deutschen Gesellschaft für Orthopädische Chirurgie (to which reference was made in THE LANCET of Jan. 15th, p. 206) has issued a second circular with the agenda. The excursion to Hohenlychen will take place on March 28th, starting at 10.15 A.M. from the Stettiner Station, Berlin, and arriving back there at 5.21 P.M. The first session of the congress will take place on the same evening at 8 P.M., and the second session on the following day at 9 A.M. and 2 P.M. respectively. This latter meeting is also the general meeting at which alterations in the regulations may be considered, but after a short interval the meeting will be continued at 5 P.M., when a conference will be held on "The Treatment of Scoliosis in Schools," to which conference Government representatives of the German Federal States have been invited. The place of meeting is Langenbeckhaus, Ziegelstrasse, 10/11, Berlin. 47 papers are announced for discussion.

ROYAL LIVERPOOL COUNTRY HOSPITAL FOR CHILDREN.—There was a large attendance at the latest annual meeting of the Royal Liverpool Country Hospital for Children, held at the Town-hall, under the presidency of the Lord Mayor. It is now 11 years since the meeting at which the hospital was inaugurated was held, and since that time the scheme has proceeded uninterruptedly. The committee is now able to announce in its latest annual report that the new buildings at Heswall have been opened and 60 children, with the nursing and domestic staff, duly installed. The erection of further wards was made possible by donations of over £8000 being received during the year 1909, and two of these new wards are now nearly completed. The new wards are being constructed with only three sides, leaving the fourth completely open to the air. Here the children will sleep and live practically out of doors. His Majesty the King has shown his interest and appreciation of the work by signifying that the hospital shall be known henceforth as the "Royal Liverpool Country Hospital for Children," which has given great satisfaction to the committee. At present, having erected the buildings and opened them free from debt, the committee is faced with the question of maintenance. Children are not admitted free, but a small sum per week is exacted, varying with the means of the parents. This does not nearly meet the cost of maintaining the patients and staff, and as a result of the first year's working there is a deficiency of over £900. This hospital deals solely with children requiring prolonged medical or surgical treatment in the fresh air of the country, and as there are numbers of children chronically ill who are unable to get proper treatment in the city hospitals through the operation of the time limit, the value of such an institution as the Royal Liverpool Country Hospital should appeal strongly to the benevolence of the charitably disposed.

UNIVERSITY OF SHEFFIELD.—The Council has made the following appointments:—Mr. A. Garrick Wilson, F.R.C.S. Eng., to the post of tutor in surgery; and Mr. Albert E. Bennee, M.B., Ch.B. Edin., to the post of junior demonstrator in the department of pathology.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on March 17th, with Dr. F. H. Champneys in the chair. The Board considered the lists of approved institutions, teachers, and midwives, and agreed that a "List of Institutions in which Pupil Midwives may be trained under the Rules of the Central Midwives Board" be substituted for the "List of Institutions approved as Training Schools" hitherto in use. Also that the secretary be instructed to communicate with the secretary of the Royal Derby and Derbyshire Nursing Association as to complaints which have been received in connexion with the training of candidates at that institution. Also that pending a satisfactory explanation of the complaints alleged, the Board's renewal of approval, as from April 1st next, of the Royal Derby and Derbyshire Nursing Association as an institution in which pupil midwives may be trained be withheld. The Board, having had brought to its notice the undue length of period for which midwives are in some cases suspended by the local supervising authorities, directed that inquiry be made of the local supervising authority for the county of Norfolk as to the reason of the suspension of a certain midwife for a period of six weeks after a fatal case of puerperal fever. The following new rule was sanctioned by an Order of Council of March 14th enabling the Central Midwives Board to admit to the Roll a candidate who, though duly qualified under Section 2 of the Midwives Act, failed to claim the Board's certificate during the two years period of grace which ended on March 31st, 1905:—

Rule B. (2).—A candidate who has failed to claim to be certified under the Midwives Act within the time limited by Section 2 of the Act, and who satisfies the Central Midwives Board that, but for her failure so to claim, she would have been entitled to be certified under the Act, may be admitted by the Central Midwives Board to the Roll of Midwives upon such conditions as the Central Midwives Board shall think fit, and shall receive a certificate in the form set out in the Schedule and her name shall be entered by the Secretary on the Roll of Midwives (Schedule, Form II., B.). Provided always that no such candidate shall be admitted to the Roll of Midwives after Sept. 30th, 1910.

THE ST. MARYLEBONE HEALTH SOCIETY.—The annual meeting of the St. Marylebone Health Society was held at the Town Hall, St. Marylebone-lane, London, W., on March 18th under the presidency of the Mayor. The annual report, as was pointed out by Dr. Charles Porter, medical officer of health of the borough, is "a concise and undecorated record of hard and valuable work" in promoting healthier conditions in the home, preventing the spread of phthisis, and checking infantile mortality. One of the most useful features of the work of this society is the infant consultation department, through which advice is given to mothers, and by its means the infantile mortality rate has been decreased. Dr. Flora Murray made special reference to this department, which was started in 1906 by Dr. Eric Pritchard. Similar departments have been established in other parts of London, and wherever the system has been adopted the death-rate among infants has fallen. In Marylebone not only is advice given to the mother with regard to the proper care of infants, but endeavours are made to educate her in various small domestic matters which have a direct bearing upon the health and comfort of the home. The report also calls attention to the proposed inception of an "anti-tuberculosis dispensary," similar to those which have done such good work in Paddington and in Edinburgh. Dr. R. W. Philip at the annual meeting commended the dispensary scheme, and said that the excellence of the work which societies such as this could do in helping the sanitary departments of a municipality at the expenditure of only a few pounds was clearly shown in the report, while the society's strength depends upon the sympathy and help of ladies of the district in which it works. The St.

Marylebone Health Society, while appealing for small subscriptions, earnestly asks for further personal service, which need only involve two or three hours per week. Full information can be obtained from the secretary, Mrs. W. Dobell, 53A, Henry-street, London, N.W., and the report, which can be obtained at the same address, deserves the careful perusal of everyone interested in municipal matters of health.

THE Academy of Medicine of Paris has elected Dr. Balland of Saint Julien and Dr. Poncet of Lyons as Associates.

A DORSET CENTENARIAN.—Mrs. Sarah Bishop of Wareham celebrated the 100th anniversary of her birthday on March 12th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. William T. English, professor of physical diagnosis in the University of Pittsburg. Dr. José Maria Bandera, professor of physiology in the University of Mexico. Dr. Chénieux, professor of clinical surgery in the Limoges Medical School.

DUBLIN HOSPITALS TUBERCULOSIS COMMITTEE.—The second annual meeting of the Hospitals Tuberculosis Committee was held on March 11th, with Sir John Moore in the chair. Her Excellency the Countess of Aberdeen attended. Reports from Dr. J. D. Daniel and the committee's nurses were submitted and approved. The following resolution was unanimously adopted:—

> That in the opinion of the Dublin Hospitals Tuberculosis Committee that the Dublin corporation should appoint a bacteriologist, whose duties should extend to other diseases than tuberculosis, for example, diphtheria, is sound; and that an appointment can be legally made under the 11th Section of the Public Health (Ireland) Act, 1878. This committee therefore approve the said recommendation of the Public Health Committee.

The committee considered that the work accomplished by the nurses was most satisfactory, and that this experiment in the home treatment and nursing of consumptives has proved to be an effective way of reaching and helping in a practical manner a great number of poor consumptive patients.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The annual festival dinner of this association was held at the Hotel Cecil, Strand, on March 17th, under the chairmanship of its President, Sir Alfred Keogh. The event of the evening was the presentation to Dr. Alfred Sheridan of the Arnott Memorial Medal by the President. This medal is awarded each year to the medical graduate of an Irish university or a diplomate of an Irish corporation who during the previous three years has performed an act of heroism or distinguished service, or accomplished any achievement in medical surgery or medical research. Dr. Sheridan was introduced to the President by Mr. T. Hobbs Crampton, chairman of the council of the association, who stated that the medal was awarded to Dr. Sheridan for the following deed of heroism. On August 24th, 1909, a Mr. O'Neil was bathing in the sea near Westport, county Mayo, when he became exhausted and sank. Some children who were looking on became frightened and gave the alarm, bringing to the beach Dr. Sheridan. The children, however, could only vaguely indicate where Mr. O'Neil had sunk. Dr. Sheridan had to locate him by diving; he eventually found him floating away on the tide, midway between the surface of the water and the bottom. With considerable difficulty Dr. Sheridan brought him ashore and after about an hour's strenuous work he had him out of danger. The President, in replying to the toast of "The Association," proposed by Dr. Seymour Taylor, referred to the disability under which Irish medical men lay in regard to hospital appointments in England, and in the annual report of the council it was noted that the labours of the association, in conjunction with the Scottish Medical Association regarding the hospital disabilities last year, had yielded one very gratifying result. Mr. C. H. Hartt of Greenwich had written stating that he had obtained a concession from the board of management of the Miller Hospital, Greenwich, relative to the future appointment of surgeon. The by-law in future would read: "Shall be Fellows by examination of the Royal College of England, Ireland or Edinburgh." Amongst other speakers were Mr. R. Thompson, M.P., Sir Charles Cuffe, Dr. H. Macnaughton-Jones, Dr. W. E. St. Lawrence Finny, and Sir William S. Church.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 16TH.

Cow-pox and Workmen's Compensation.

Mr. C. DUNCAN (on behalf of Mr. BARNES) asked the Under Secretary of State for the Home Department whether his attention had been called to the recent outbreak of cow-pox at Vale Farm, Pinner-road, Sudbury, as a result of which four persons contracted the disease; and whether he would consider the advisability of extending the Workmen's Compensation Act to cover this and other diseases of a similar nature.—Mr. MASTERMAN replied: The Secretary of State's attention has not previously been called to this outbreak, but he has received the particulars which the honourable Member has been good enough to send him, and he will make inquiry into the subject and also consider the point raised in the last part of the question.

Indian Medical Service.

Mr. KELLY asked the Under Secretary of State for India whether he would inquire whether the resolution passed unanimously at the meeting of the medical profession, held under the auspices of the Bombay Medical Union on Sept. 8th, 1909, was sent to the proper authorities at Bombay to be forwarded to the Secretary of State; and whether he was aware of the belief among Indians that the main obstacle to a real reform of the medical service of their country was the desire to reserve the highly salaried posts to people of this country.—Mr. MONTAGU wrote in reply: The Secretary of State for India is not acquainted with the resolution referred to, but if, as stated, it has been sent to the proper authorities in Bombay for transmission to him it will doubtless reach him in due course. I am not aware of the existence among Indians of any such erroneous belief as that referred to in the concluding portion of the question. Answers given to similar questions in this Parliament and the last, and the papers laid before Parliament, to which I would refer the honourable Member, afford ample evidence of the efforts that are being made to widen the field in regard to medical appointments.

The General Hospital, Madras.

Mr. KELLY asked the Under Secretary of State for India whether the matron, the assistant matron, and the head nurse at the General Hospital, Madras, were paid by the Indian taxpayer; whether those posts were open to Indians; if so, how many Indians had hitherto been appointed to them; and whether, considering the importance of spreading a general knowledge of medical matters among Indian women, he would give greater facilities to such of them as desired to join the nursing staff and to rise to the highest posts at the General Hospital.—Mr. MONTAGU (in a written answer) replied: The General Hospital, Madras, is supported entirely from Indian revenues. As this is the principal State hospital in Madras and receives many European and Eurasian patients it seems advisable that the matron, assistant matron, and head nurse should be Europeans or Eurasians trained in European hospitals. Such training is hardly available for Indians. The diffusion of a knowledge of medical matters among Indian women, the importance of which is fully recognised, is promoted by schools for the training of nurses attached to this and to other large hospitals in India.

The Medical College, Madras.

Mr. KELLY asked the Under Secretary of State for India whether there were under the senior assistant professor at the Medical College, Madras, and the senior assistant surgeon, General Hospital, Madras, Indian civil doctors with University qualifications sufficient to enable them to be registered under the Medical Acts and to be recognised as medical practitioners in this country; whether the present holders of these posts were military assistant surgeons who had only four years' course of studies prior to qualification; whether he was aware that military assistant surgeons were not allowed according to the Army Regulations to use the knife, and were allowed to perform only the duties of dispensers and apothecaries as long as they were attached to military hospitals; and what was the number of natives of India who had so far filled these posts.—Mr. MONTAGU wrote in reply: There appear to be no Indian civil doctors, with the qualifications indicated, under the senior assistant professor at the Medical College, Madras. As regards the status of the latter officers I beg to refer the honourable Member to the answer given by my predecessor to the question by the honourable Member for Galway North on Oct. 21st last. It is not possible to state what number of natives of India have filled these posts. I am not aware of any rule forbidding military assistant surgeons to perform operations.

Colour-Blind Tests.

Mr. HENNIKER HEATON asked the President of the Board of Trade whether any steps had been taken to reform the methods of testing for colour blindness adopted by the Board of Trade.—Mr. BUXTON wrote in reply: The important question to which my honourable friend refers is engaging my attention.

THURSDAY, MARCH 17TH.

Typhoid Fever in Madeira.

Mr. STAVELEY-HILL asked the Secretary of State for Foreign Affairs whether he had received any communication from Madeira on the subject of the recent outbreak of typhoid fever at the principal hotel at Funchal; and whether he was in a position to say that the authorities at Lisbon had converted the mountain water in their possession for the amelioration of the distress caused amongst British visitors to Madeira by the neglect of the municipality to provide proper drinking water.—Sir EDWARD GREY replied: According to information which I have received from Madeira, the cases of typhoid fever have been practically confined to one hotel, there being only four or five other cases in the rest of Funchal. The question of approaching the Portuguese Government with a view to the improvement of the water-supply has been brought to my notice and to that of His Majesty's Minister at Lisbon, but it does not appear to be a matter in which I can properly intervene officially.

Deaths from Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether his attention had been called to the death of Miss Edith

Derbyshire, who recently contracted anthrax at the works of Messrs. Campbell and Harrison, woolcombers, of Shipley, a branch of the woolcombers' syndicate; whether he would examine the depositions of evidence given at the subsequent inquest; and whether he would say how many cases of anthrax had occurred among Messrs. Campbell and Harrison's employees during the last ten years, and the number of cases which had occurred at the whole of the combined firms of Woolcombers, Limited, during the same period, distinguishing between different years and fatal and non-fatal cases.—Mr. Churchill answered: A report of this case has been received in the department and I have also obtained the depositions taken at the inquest from the coroner. An exhaustive examination of the existing conditions at the works has been directed. I will circulate the figures which the honourable Member asks for, and which cannot conveniently be given in an oral reply, with the votes.

Imported Chinese Pork.

Mr. Fell asked the President of the Local Government Board whether the Chinese pork which was rejected in London and rejected again at Liverpool would be again inspected if it was attempted to be landed after it had been cured as bacon at some foreign port or in the Isle of Man; and why the pork was not ordered to be destroyed when it was first rejected at London.—Mr. Burns replied: The consignment in question will be liable to inspection if re-imported into England. As regards the second part of the question I may explain that the regulations do not require that the meat should be destroyed. The importer is allowed the option of re-exporting it.

BOOKS, ETC., RECEIVED.

Arnold, Edward, London.

Neighbours and Friends. By M. Loane. Price 6*s*.

Physiology of the Special Senses. By M. Greenwood, Jun., M.R.C.S., L.R.C.P., F.S.S. Price 8*s*. 6*d*. net.

Baillière, Tindall, and Cox, London.

The Optic Nerve and the Accessory Sinuses of the Nose. A Contribution to the Study of Canalicular Neuritis and Atrophy of the Optic Nerve of Nasal Origin. By Professor A. Onodi. Authorised Translation by J. Luckhoff, M.D. Edin., Ch.B. Price 10*s*. 6*d*. net.

Collingridge, W. H. and L., London.

Bees for Profit and Pleasure. By H. Geary. Edited by T. W. Sanders, F.L.S. Price 1*s*. net.

The City of London Year Book and Civic Directory for 1910. Price 5*s*. net.

Constable and Co., Limited, London.

International Sport. A Short History of the Olympic Movement from 1896 to the Present Day. By Theodore Andrea Cook. Price 3*s*. 6*d*.

Fischer, Gustav, Jena.

Mitteilungen aus der Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm. Herausgegeben von Dr. J. Widmark. Elftes Heft. Mit einem Bildnis des Herausgebers. Price M.7.

Frowde, Henry, and Hodder and Stoughton, London.

Oxford Medical Publications. Consumption, its Prevention and Home Treatment. A Guide for the Use of Patients. By H. Hyslop Thomson, M.D. Price 2*s*. net.

Practical Pathology. A Manual for Students and Practitioners. By G. Sims Woodhead, M.A. Cantab., M.D. Edin., Hon. LL.D. Toronto, F.R.S. Edin. Fourth edition. Price 31*s*. 6*d*. net.

The Expectation of Life of the Consumptive after Sanatorium Treatment. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. Edin. Price 3*s*. 6*d*. net.

Grafton Press, The, New York.

Transactions of the American Association of Genito-Urinary Surgeons. Volume III., 1908; Volume IV., 1909. Price not stated.

Griffin, Charles, and Company, Limited, London.

The Plant Cell: Its Modifications and Vital Processes. A Manual for Students. By Harold A. Haig, M.B., B.S. Lond. Price 6*s*. net.

Heinemann, William, London.

When No Man Pursueth. An Everyday Story. By Mrs. Belloc Lowndes. Price 6*s*.

Hirschwald, August, Berlin.

Anleitung zur mikroskopischen Untersuchung des Auges. Von Prof. Dr. R. Greeff. Dritte, vermehrte Auflage, unter Mitwirkung, von Prof. Stock (Freiburg) und Prof. Wintersteiner (Wien). Price M.4.

Kegan Paul, Trench, Trübner and Co., Limited, London.

Psychic Healing: An Account of the Work of the Church and Medical Union. Price 6*d*. net.

King, Sell, and Olding, Limited, London.

Marriage, Divorce, and Separation: Law and Morals in Relation to Church and State, the Divorce Court, Magisterial Orders, Proposed County Court Jurisdiction. By Douglas M. Ford, Solicitor (London) and Notary Public (Provincial). Price not stated.

Lewis, H. K., London.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. Aberd. Vol. II. Vascular System, Bones, and Joints, Amputations. Price not stated.

Melrose, Andrew, London.

The Laws of Life and Health. By Alexande Bryce, M.D. Glas., D.P.H. Camb. Price 7*s*. 6*d*. net.

Urban und Schwarzenberg, Berlin und Wien.

Beiträge zur Carcinomforschung. Aus der I. Med. Klinik (Prof. C. v. Noorden) in Wien. Herausgegeben von Priv.-Dozent Dr. H. Salamon. Heft II. Über einen Harnbefund bei Carcinomatösen. Zugleich ein Beitrag zur Kenntnis der Oxyproteinsäureausscheidung beim Menschen. Von Hugo Salomon und Paul Saxl. Die temperaturherabsetzende Wirkung von Gewebspressäften und Lipoiden und deren Bedeutung für die Pfeiffersche Reaktion. Von Herbert Elias. Price M.4.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Bennee, Albert E., M.B., Ch.B. Edin., has been appointed Junior Demonstrator in the Department of Pathology at the University of Sheffield.

Briscoe, James Rynd, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Chippenham (Wilts) Cottage Hospital.

Bulloch, O. S., M.B., Ch.B. Edin., has been appointed House Physician at the Bedford County Hospital.

Fortescue-Brickdale, J. M., M.D. Oxon., has been appointed Physician to Clifton College, Bristol.

Green, John Balch, M.B. Lond., L.R.C.P. Lond., M.R.C.S., D.P.H. Irel., has been appointed District Medical Officer, Medical Officer to Southmead Workhouse, and Public Vaccinator by the Bristol Board of Guardians.

Harries, D. J., M.B., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Obstetric Assistant to University College Hospital.

Hassard, William, M.D., B.Ch., B.A.O. Dub., has been appointed Honorary Medical Officer to the Chippenham (Wilts) Cottage Hospital.

Knaggs, R. L., M.D. Cantab., F.R.C.S. Eng., has been appointed Professor of Surgery in the University of Leeds.

Morris, C. W., L.R.C.P. Lond, M.R.C.S., has been appointed House Surgeon at University College Hospital.

Moynihan, B. G. A., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Professor of Clinical Surgery in the University of Leeds.

Steele-Perkins, Duncombe Steele, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Honiton (Devon) Board of Guardians.

Tasker, H. L., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at University College Hospital.

Wilson, A. Garrick, M.C., M.B. Cantab., F.R.C.S. Eng., has been appointed Tutor in Surgery at the University of Sheffield.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Bath, Royal Mineral Water Hospital.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and washing.

Blackburn and East Lancashire Infirmary.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

Bristol General Hospital.—House Physician, Casualty House Surgeon, and Assistant House Physician for six months. Salary £60 each, with board, residence, &c.

Bristol Royal Hospital for Sick Children and Women.—Assistant House Surgeon for six months. Salary £50 per annum, with board, rooms, and attendance.

Cancer Hospital, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

Capetown, Somerset Hospital.—Assistant Medical Officer. Salary £200 per annum, with rations and quarters.

Cheltenham General Hospital.—House Surgeon, unmarried. Salary £75 per annum, with board and lodging.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

Colchester, Essex County Hospital.—House Surgeon; also House Physician. Salary in each case £80 per annum, with board, washing, and residence.

Croydon Borough Hospital.—Senior Resident Medical Officer and Bacteriologist. Salary £160 per annum, with board, lodging, and washing.

Croydon General Hospital.—Honorary Radiographer.

Darlington Hospital and Dispensary.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, &c.

Devonport, Royal Albert Hospital.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

Ilkeston, Borough of.—School Medical Officer and Assistant Medical Officer of Health (female). Salary £250 per annum.

Kidderminster Infirmary and Children's Hospital.—House Surgeon, unmarried. Salary £100 per annum and board.

Leamington, Warneford, Leamington, and South Warwickshire General Hospital.—Honorary Physician. Also Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

Leicestershire and Rutland Asylum, Narborough.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

Leith Hospital.—Anæsthetist.

Liverpool, Royal Southern Hospital.—Honorary Surgeon.

London Fever Hospital, Islington, N.—Honorary Surgeon.

London Throat Hospital, 204, Great Portland-street, W.—Two Assistant Anæsthetists.

Manchester, Ancoats Hospital.—Assistant House Surgeon. Salary £70 per annum, with board, &c.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—Pathologist. Salary £10 per annum.

Middlesbrough, North Riding Infirmary.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

Newcastle-on-Tyne Hospital for Sick Children.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and laundry.

Rotherham Hospital and Dispensary.—Assistant House Surgeon. Salary £80 per annum, with board, lodgings, and washing.

Royal Ear Hospital, Soho.—House Surgeon. Salary £40 per annum.

Royal Institute of Public Health.—Harben Demonstrator of Bacteriology and Comparative Pathology. Salary £250 per annum.

Royal National Orthopædic Hospital.—Resident House Surgeon, unmarried. Salary £100, with rooms, board, and washing.

Royal Naval Medical Service.—Examination for Fifteen Commissions.

St. Marylebone General Dispensary, 77, Welbeck-street, W.—Honorary Anæsthetist.

Salford Royal Hospital.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Anæsthetist. Salary £15 per annum.

Seamen's Hospital Society, Dreadnought Hospital, Greenwich, S.E.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Pathologist. Salary £100 per annum. Also Assistant Physician.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing. Also Two Honorary Assistant Dental Surgeons.

Sheffield University.—Demonstrator in Anatomy. Salary £150 per annum.

Shrewsbury, Salop and Montgomery Asylum.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.

Southwark Union Infirmary, East Dulwich-grove, S.E.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

Stafford, Staffordshire General Infirmary.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

Stoke-on-Trent, North Staffordshire Infirmary and Eye Hospital, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing.

Stow-on-the-Wold Rural District Council.—Medical Officer of Health. Salary £50 per annum.

Throat Hospital, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board and laundry.

University College Hospital.—Mechanical Assistant in Electro-Radiographic Department. Salary £78 per annum, with dinner and tea.

Wakefield General Hospital.—House Physician, unmarried. Salary £100 per annum, with board and washing.

West Riding of Yorkshire.—Assistant County Medical Officer. Also Bacteriologist. Salary in each case £250 per annum.

York County Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

York Dispensary.—Two Resident Medical Officers, unmarried. Salary £130 per annum, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

Cunningham.—On Feb. 27th, at Boksburg North, Transvaal, the wife of Norman Rowsell Cunningham, M.R.C.S., L.R.C.P., of a daughter, who only survived her birth a few hours.

Hardcastle.—On March 15th, at Eldon-street, Newcastle-upon-Tyne, the wife of William Hardcastle, M.B. Lond., M.R.C.S., of a daughter.

Passmore.—On March 16th, at Canning House, Burbage, Leicestershire, the wife of Ernest Passmore, M.R.C.S., L.R.C.P. (*née* Mander), of a son.

MARRIAGES.

Marriage—Richardson.—On March 19th, 1910, at All Souls' Church, Langham-place, by the Rector, the Rev. F. S. Webster, M.A., Herbert James Marriage, M.B., B.S. Lond., F.R.C.S., son of James Marriage, of Kynard, Beckenham, to Amy Grace, only daughter of Edward W. Richardson, of The Firs, Romford.

Martin—Combes.—On March 19th, at Holy Trinity Church, Marylebone, Sidney Martin, M.D., to Constance Emily, daughter of the late T. Whitney Combes, Esq.

DEATHS.

Curgenven.—On March 18th, at Fareham, Hants, William Grafton Curgenven, M.D., lately of Derby, aged 68 years.

Roughton.—On March 19th, at Kettering, James John Roughton, J.P., M.R.C.S., in his 87th year.

Sandford.—On March 17th, at Iford Lodge, Market Drayton, Shropshire, Folliott James Sandford, M.D., V.D., in his 93rd year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

QUACKERY AND THE MUSIC-HALL STAGE.

In "Dr." Bodie's recent appeal against the verdict and judgment secured by Mr. C. H. Irving in the High Court of Justice his counsel endeavoured to put forward as a point in his client's favour that although his "degrees" were bogus and his "science" a sham, his advertising of them, including the use he had made of them in deceiving the respondent, was no more than might reasonably be expected in a "showman." In other words, he suggested that sham and deception are to be expected in performances upon the music-hall stage, and are considered justifiable when exhibited for the purpose of misleading a music-hall audience. Lord Justice Moulton is reported as saying on the occasion referred to, interrupting the argument of Bodie's counsel, "The appellant describes himself as a Doctor of Philosophy and Doctor of Science at a cheap institution, so that without having completed a regular course of instruction and passing a satisfactory examination he got his diploma." To this counsel replied: "I agree that it ought not to be done, but he is a showman"; and Lord Justice Moulton retorted, "He has got unrivalled publicity by that lie." The line of argument thus adopted is worth noting in a medical newspaper, not because the court which dismissed the appeal without ceremony acquiesced in it, but because it suggests as a general rule applicable to all music-hall performances that which does not apply generally at all, though it does apparently apply with regard to parodies of science and medicine. It may be said, speaking generally, that honesty and the honourable display of genuine skill are leading characteristics of the modern variety stage, and that shams and deceptions of the public do not attract and are not attempted or countenanced in shows which command any measure of success, either in important London houses or in humbler surroundings. The singer or dancer who aspires to rival Harry Lauder or Mlle. Genée seeks to do so by genuine hard work and by improving his or her powers. There is no room for sham in their performance. The juggler who desires to out-juggle Cinquevalli has to perform wonders with a billiard cue and balls of the ordinary kind, not to deceive with any skilfully substituted apparatus. The conjurer and the ventriloquist are what they pretend to be, and those who applaud the results which they achieve are not asked to believe them to be wizards. Almost the only exception we can recall to the general rule that the man who deceives acknowledges that he is doing so, and challenges the onlooker to detect how he does it, is in the case of those who pretend to some form of scientific skill, frequently connected with the curing of bodily ailments. The reputed hypnotist, mesmerist, bonesetter, or "bloodless surgeon," and the tooth drawer who in a booth hauls out the molars of his victims while a cornet and a drum drown their expressions of pain, all perform their dangerous functions while pretending to powers and qualifications which they do not possess, and all are liable to do incalculable mischief to those who submit their bodies to them. As such performances are frequently an insult to medical and surgical science as well as a source of danger to the public, is it too much to ask music-hall managers and performers alike to set their faces consistently against them, to have nothing to do with them, and to refuse to be associated with them in the public eye? We need hardly remind music-hall performers or the "profession" in general, of the friendly relations which have ever existed between them and the profession of medicine. The hospitals are ever open for the prompt reception of those among them who meet with injury in the exercise of their calling before the footlights. The expenses of those who succumb to illness and are treated privately are not, we believe, often increased by heavy accounts for medical attendance. We ask them to make a return for what they receive by dissociating themselves, as far as they are able to do so, from the mountebank who by the mimicry of medical science discredits the stage upon which he performs, and supplants the honest entertainers who should occupy it.

DISINFECTION OF THE CLINICAL THERMOMETER.

In a recent number of the *Ohio Sanitary Bulletin* attention is called to the danger of spreading disease by the use of an infected clinical thermometer, and mention is made of one case of syphilis resulting in this way. The ordinary straight clinical thermometer does not readily harbour micro-organisms, provided it is cleansed soon after its removal from the patient's mouth, particularly if this be done before the secretions have had time to dry. If this precaution be not taken and the thermometer be returned to the case, it is possible for both to become a dangerous source of infection and to harbour germs for a considerable time. The risk of spreading infection is greatly increased by using thermometers with the scale-markings etched upon the surface of the glass. Recently Denny has experimentally studied a method of sterilising thermometers by saturating the cotton wool at the bottom of the case with a few drops of formalin solution

He found the method to be efficient, the formalin being sufficiently strong to destroy pathogenic germs, even after three or four weeks. He advises the renewal of the disinfectant at frequent intervals, at least as often as once in two weeks. One advantage of this method lies in the fact that the odour of the disinfectant is a fair index of its its efficiency.

INFANT MORTALITY AND "THE SOOTHER."

"A GRANDMOTHER" writes: "Seeing a letter in this week's LANCET from Dr. Burnet condemning the use of the 'soother,' may I point out that until the monthly nurse (trained or untrained) is forbidden to use it, it is almost hopeless to expect to get it abolished. I feel very strongly about this matter, as after rearing a large family without a 'soother' my first grandchild was born unexpectedly at my home. Before the baby was 24 hours old the nurse (trained) had sent for a 'soother' and a *soothing mixture*. In spite of all I could say the nurse insisted on using both. Every time the child was restless, the soother, smeared with a preparation of glycerine and boric acid (to disinfect it!) was put into the child's mouth. I suppose that sucking to no purpose so much tired the child out, so that when given the breast every two hours, he failed to get enough food. Anyway, from being a fine baby at birth, at the end of a few weeks he had to be brought up by hand, and is still, in my opinion, fighting at 18 months against the effects of 'soother,' soothing mixture, and boric acid and glycerine. The young mother is quite helpless in the hands of a nurse (with her first baby), and I cannot be expected to know as well as a 'trained' nurse."

FIRST AID IN STRYCHNINE POISONING.

To the Editor of THE LANCET.

SIR,—In the Twelfth Edition of "First Aid to the Injured," issued by the St. John Ambulance Association, on p. 153, under the heading "Treatment" (for strychnine poisoning) is the following: "2. Apply artificial respiration." As slight peripheral impressions induce recurrence of the convulsions, it seems difficult for an instructor to know which method of artificial respiration he should recommend the pupils of a "first aid" class to adopt in such cases.

I am, Sir, yours faithfully,

March 19th, 1910. PUZZLED.

A DIRECTORY FOR WET-NURSES.

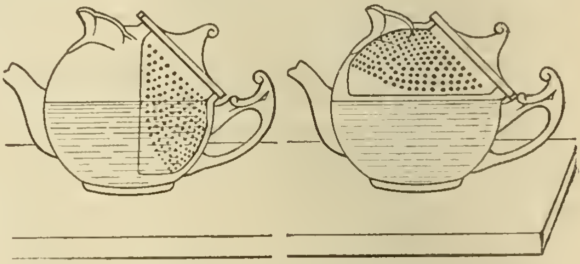
IN the *Boston Medical and Surgical Journal* of March 3rd a novel but very useful project is announced. Under the auspices of the Massachusetts Infant Asylum it is proposed to establish a directory for wet-nurses. The advantages of the project are so obvious that it seems strange that it has not been put into practice before. The value of a good wet-nurse when a mother cannot suckle her infant and her superiority over all methods of artificial feeding are undisputed. But great difficulty may be experienced in obtaining a wet-nurse when she is urgently required. On the other hand, there must always be scattered throughout the community a number of poor women, who may have lost their babies, who would only be too glad to earn money as wet-nurses. The scheme now proposed goes further than merely bringing the two parties to the transaction together. Not only is a list to be prepared of reliable wet-nurses ready at all times for emergencies, but women who wish to act in this capacity will be lodged in suitable surroundings and instructed in their duties. They will undergo thorough physical examination, and if they have babies these will be given all the advantages of the infant asylum. Those who have lost their babies will be given others to nurse, so that their supply of milk will be conserved until employment is offered. It seems to us a great merit of this scheme that if a woman with a baby undertakes wet-nursing the regrettable result of depriving it of breast-feeding may be avoided in an institution where a constant supply of wet-nurses is organised. The project is a most excellent one and worthy of imitation in this country. We look forward with interest to the report of its working.

A MICROSCOPE FOR SALE.

P. S., Tour de Belle Vue, Antibes, France, the widow of a member of the Royal Microscopical Society, is anxious to dispose of a microscope and accessories partly for her own benefit and partly for the benefit of a deserving society. We have been sent the following specification of the apparatus: Ross binocular microscope, complete with lenses and apparatus and case (cost £80); case of bottles for balsams, &c., with mounting table (cost £2); microscopic vice for holding unmounted crystals for examination (cost 15*s.*); Roberts's test plate of fine lines (cost £1 10*s.*); Smith's stage and holder forceps in cabinet-box, with 100 small discs for mounting opaque objects, with adjustment for every direction (cost £3); cabinet of test-bottles for reagents (cost £1 10*s.*); dissecting microscope, complete with compound body (cost £4 4*s.*); diatom finder: field hand microscope (cost £1 4*s.*); pocket microscope (Beale's) lenses from the large microscope, adaptable (cost £1 10*s.*); Smith's reflex illuminator for high powers only with opaque objects (cost 10*s.* 6*d.*); Wenham's reflex illuminator for transparent objects for the highest power (cost £1 10*s.*); Read's hemispherical condenser for the exhibition of diatoms (cost £4 0*s.* 6*d.*); 1/6 object-glass intermediate between 1/4 and 1/8 "Stanley" (cost £1 10*s.*); cabinet of mounted objects (1000), cost £5; about 800 special objects, to be sold together (cost £20); Valentine's knife for cutting thin slices of animal tissue (cost 13*s.* 6*d.*); case of dissecting instruments (cost £2); Smith's holder for mounting objects (cost 12*s.* 6*d.*). All those are in mahogany cases, and there are also three small cabinet boxes for holding 36 slides, a lamp in case, and following books: "Quekett on the Microscope"; "How to Work with the Microscope," Dr. Lionel Beale; "Evenings at the Microscope," Gosse; "On the Preparing and Mounting of Microscopic Objects," by Thomas Davis; "An Elementary Text-book of the Microscope," by T. W. Griffith, M.D., with 12 coloured plates; and "Objects for the Microscope," by L. Lane Clarke.

AN ANTI-TANNIN TEAPOT.

THE figure represents the principle of a new teapot which has been submitted to our inspection by the "Cheerup Teapot" Company, 20, York-street, Glasgow. It will be seen that the tea is received in a perforated chamber fitting into the upper part of the pot which is reversible in such a manner that by giving it a half turn the tea-leaves can be at once lifted above the infusion. The advantages of such a procedure will be apparent to all who have ever been "late for tea" and have had to assimilate a tannin-laden brew in consequence. The only objection which we have against the teapot submitted to us is that it is made of a highly glazed white porcelain that suggests more an appurtenance of the sick-room than of the tea-table. We are informed that the pot is made in other materials, and we think a brown glazed earthenware would be æsthetically preferable for table purposes.



THE OLDEST KNOWN MUMMY.

Professor G. Elliot Smith has made a minute examination of the mummy of Ra-Nefer in the Museum of the Royal College of Surgeons of England, and finds that it is at least 11 centuries older than any other embalmed body yet described. The mummy of Ra-Nefer was discovered by Dr. Flinders Petrie at Medum, Egypt, in 1892, and afterwards presented by him to the Museum of the Royal College of Surgeons. There can be no doubt that Ra-Nefer belongs to the IVth Dynasty and was a high official under Seneferis. It is not until about the XVIIIth Dynasty that mummies are found in an equally good state of preservation. Embalming was certainly practised in the interval between the IVth and XVIIIth Dynasties, but such specimens as have been found crumbled to dust at a touch, whereas Ra-Nefer is intact and likely to remain so for many more centuries, and exemplifies a phase in the history of embalming which would have been unknown but for the discovery of this specimen.

A PICTORIAL BANDAGE.

WE have received from Messrs. Cuxson, Gerrard, and Co., Limited, a large triangular bandage known as the "Sanoid" which constitutes a first-aid reference sheet as well as a bandage. Six representations of a human figure in various attitudes are printed upon it, showing the bandage applied to different regions of the body as a first-aid dressing for 30 different injuries, the nature of each being indicated by a reference number and table. The bandage should prove of value to all engaged in "Red Cross" work, as the figures are amply large enough to show how the various folds and turns are made. The bandage is about 52 inches broad and 25 inches high.

PRINCESS CHRISTIAN'S FARM COLONY.

Lady Margaret Brudenell Bruce and her fellow members of the committee of the National Association for the Feeble-minded have issued an urgent appeal on behalf of Princess Christian's Farm Colony, in the course of which they say: "Feeble-mindedness is largely hereditary, *and it is therefore one of the most preventable of diseases*, provided only that those afflicted, while being kindly treated and well cared for, can be kept apart from the world. For this reason, the association has founded a farm colony of 170 acres near Tonbridge, where, by the care and control of the feeble-minded, one of the most subtle evils which have ever attacked national life is being successfully combated. The colony is named after the Princess Christian and she will herself open it on June 3rd next. Already there is established a home for lads of 16 to 23 years; these lads, in some cases a source of danger to all around them, are now busily and happily employed in tending the livestock which kind sympathisers have already given and in other colony work. So far a sum of £4300 has been subscribed for the colony, but another £8000 is yet required:

(1) to clear off the debt for the land purchased; (2) to build more homes; and (3) to establish a school and homes for feeble-minded children of both sexes. An earnest appeal is made for the immediate foundation of a home for young girls, who are in greater danger than all others. For this about £1500 will be needed, and a great effort is being made to collect the sum by June 3rd in order that the Princess Christian may lay the foundation-stone. For every £100 we can add a named bed to the colony. Furniture, clothing, and farm stock will be gratefully accepted. Will those who read this show their interest by sending a subscription or donation, marked 'Colony' or 'General Fund,' to the secretary of the National Association for the Feeble-minded, at Denison House, 296, Vauxhall Bridge-road, S.W." The appeal is one which we can commend heartily, as its object is not only humanitarian but of national importance.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 23rd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 17	29·87	W.	0·05	96	52	37	47	48	Cloudy
,, 18	29·72	N.W.	0·03	76	42	40	39	41	Cloudy
,, 19	30·01	N.W.	0·03	75	45	35	38	40	Cloudy
,, 20	30·21	W.	...	67	49	35	36	38	Fine
,, 21	30·18	W.	...	72	54	37	39	40	Overcast
,, 22	30·37	N.	...	91	53	39	39	42	Fine
,, 23	30·50	W.	...	...	...	37	37	39	Hazy

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3.45 P.M., Lecture:—Mr. W. H. George: Anæsthetics.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. C. Wallis: Cancer (Treatment)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rate of pay, including allowances, is less than Rs. 50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Dr. John Allan, Edinburgh.

B.—Messrs. Blundell and Rigby, Lond.; Bristol General Hospital, Secretary of; Belladonnæ; Mr. F. A. Brockhaus, Lond.; Mr. F. J. F. Barrington, Lond.; Mr. W. N. Barlow, Egremont; Dr. J. L. Bunch, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. E. Cresswell Baber, Ramsgate.

C.—Mr. F. W. Clarke, Chorlton-cum-Hardy; Mr. Henry Curtis, Lond.; Mr. E. Carnall, Lond.; Messrs. Cassell and Co., Lond.; Messrs. Clarke, Son, and Platt, Lond.; Clayton Hospital, Wakefield, Secretary of; Dr. T. M. Carter, Westbury-on-Trym; Commercial Intelligence Bureau, Lond., Manager of; Mr. N. H. Cowdry, Waterford, Canada.

D.—Messrs. Dawson and Son, Lond.; Dr. Doyen, Paris; Dr. E. J. Doyle, Dublin; Darlington Hospital, Secretary of.

E.—Dr. K. Eckenstein, Bordeaux; Expanding Bedstead Co., Lond.

F.—Messrs. Fry and Sons, Bristol; Mr. A. G. R. Foulerton, Lond.; Messrs. J. Feenen and Co., Birmingham; Mr. H. Frowde, Lond.; Mr. M. Foulds, Lond.; Dr. Hingston Fox, Lond.; Dr. A. Dingwall Fordyce, Edinburgh; Dr. N. M. Falkiner, Dublin; Mr. G. G. Forster, Lond.

G.—Gloucestershire Education Committee, Gloucester, Medical Officer of Health of.

H.—Mr. F. A. Hyne, St. Mawes; Haydock Lodge, Newton-le-Willows, Medical Superintendent of; Mr. T. H. Hewitt, Lond.; Mr. W. S. J. Hancock, Lond.; Mr. J. Hart, Lond.; Dr. Patrick Haglund, Stockholm.

J.—Dr. J. K. Jamieson, Leeds; Japan-British Exhibition, Lond., Scientific and Surgical Instruments Section, Chairman of, Manager of, and Press Manager of; Dr. O. Jennings, Le Vésinet.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. Kutnow and Co., Lond.; Kidderminster Infirmary, Secretary of; Mr. G. A. Keeler, Lond.

L.—Messrs. Lee and Nightingale, Liverpool; Dr. A. P. Luff, Lond.; Dr. R. Bruce Low, Lond.; Leicester and Rutland Counties Asylum, Narborough, Clerk to the; L. L. M. C.; Lieutenant-Colonel John T. Leslie, I.M.S., Simla; Mr. C. Longbottom, Bradford; Local Government Board, Lond., Secretary of; Leith Hospital, Clerk to the; Dr. C. H. Leaf, Lond.; Mr. A. Lawson, Lond.; Messrs. Lea and Febiger, Philadelphia.

M.—Sir Shirley F. Murphy, Lond.; *Medical Officer*, Lond., Manager of; Mr. A. Maloine, Paris; Dr. F. S. Mackenzie, Sydney, New South Wales; Mr. A. Moxon, Ramsbury; Dr. A. Macdonald, Crewe; Dr. C. Muthu, Hillgrove.

N.—Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; Nottingham General Dispensary, Secretary of; Dr. J. W. Noble, Davos Platz; National Committee to Promote the Break Up of the Poor Law, Lond.; Newcastle-on-Tyne Hospital for Sick Children, Secretary of.

O.—Oxford Medical Publications, Lond., Editor of; Mr. P. B. O'Callaghan, Everton; Dr. C. Ormerod, Epsom; Mr. Robert Ollerenshaw, Berlin.

P.—Mr. Peter Paterson, Glasgow; Dr. A. Philip, Norwich; Mrs. R. Pope, Lond.: Protene Co., Lond.; Dr. S. Vere Pearson, Mundesley; Messrs. Paine and Co., St. Neots; Prestwich County Asylum, Medical Superintendent of; Professor Pepper, Lond.; Portsmouth, Medical Officer of Health of; Mr. P. Pohlenz, Carlsbad; Phœnix Sanitary Co., Preston, Manager of; *The Prescriber*, Edinburgh, Publisher of; Messrs. Pratt and Co., Lond.

R.—Captain T. C. Rutherfoord, I.M.S., Bilaspur; "Ronuk," Lond., Managing Director of; Mr. H. Repp, Lond.

S.—Scholastic, Clerical, &c., Association, Lond.; Messrs. J. Smith and Co., Lond.; Mr. W. Summerskill Westgate-on-Sea; Mr. B. Atkinson Stoney, Dublin; Mr. W. Stuart-Low, Lond.; Messrs. Spiers and Pond, Lond.; Mr. G. C. Steinicke, Munich; Stow-on-the-Wold Rural District Council, Clerk to the; Sheffield Royal Hospital, Secretary of; Mr. C. F. Scripps, Lond.; Mr. F. G. Shaw, Lond.; Mr. F. W. Sears, Lond.

T.—Sir W. J. Thompson, Dublin; Tyne Port Sanitary Authority, Medical Officer of Health of; Messrs. Thompson and Capper, Manchester; Messrs. Taraporevala, Sons, and Co., Bombay; Mr. J. S. Tyree, Washington, U.S.A.

W.—Mr. S. Wallace, Skegness; Messrs. F. Williams and Co., Lond.; West Riding County Council, Wakefield, Clerk to the; Mr. H. de C. Woodcock, Leeds; Mr. F. Parkes Weber, Lond.; Women's Social and Political Union, Lond.; Workhouse Nursing Association, Lond., Secretary of; The Wellcome Chemical Research Laboratories, Lond.; Messrs. Watkins and Osmond, Lond.; Messrs. Widenmann, Broicher, and Co., Lond.

Y.—*The Yorkshire Post*, Leeds, Manager of.

Z.—Dr. T. Zangger, Zürich.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. Andrew, Coatbridge; Ashwood House, Kingswinford, Medical Superintendent of.

B.—Bolingbroke Hospital, Lond.; Mr. W. F. C. Bennett, Sheffield; *Batley News*, Manager of; Mr. W. R. Boyd, Richmond, Victoria; Mr. S. N. Babington, Taichow-Fu; Mr. G. J. Benson, New Ross; Mr. R. W. Burkitt, Athenry; Mr. H. Brice, Exeter; Dr. W. E. Barton, Lond.

C.—Dr. J. P. Cahir, Ennis; C. W.; Cardiff Corporation, Treasurer to the; Mr. W. F. Cholmeley, Wolverhampton; Cornelia Hospital, Poole, Hon. Secretary of; Miss Coward, Eastbourne; Mr. A. L. M. Churchill, Mevagissey; Mr. G. H. Colt, Aberdeen.

D.—Dr. W. R. Dakin, Lond.; Dr. W. T. Dougal, Pittenweem; Messrs. De St. Dalmas and Co., Leicester; Mr. T. Dixon, Lond.; D. E. J.

F.—Mr. A. Fitzgerald, Waterford; F. B.

G.—Mr. T. A. Greene, Carlow.

H.—Mr J. T. Hyatt, Shepton Mallet; Huddersfield Corporation, Treasurer to the; Heigham Hall, Norwich, Medical Superintendent of; H. B.; Messrs. J. Haddon and Co., Lond.; Mr. J. Heywood, Manchester; Messrs. Hirschfeld Bros., Lond.; Dr. G. D. Henderson, Holyoke; Mr. K. Hirose, Okayama.

J.—Mr. J. Joule, Kidderminster; J. R.; J. M. B.

K.—Messrs. G. Keener and Co., Lond.

L.—Mr. E. Leavy, Geraldton, Australia; London School of Clinical Medicine, Secretary of; Mr. H. K. Lewis, Lond.; Mr. J. Lane, Lond.

M.—Mr. J. More. Rothwell; M. K.; Messrs. J. Menzies and Co., Glasgow; M. H.; Mental Nurses' Co-operation, Lond., Superintendent of; Mr. C. W. Measures, Manchester; M. C.

N.—Dr. N. S. Neill, Forfar; Northampton Education Committee, Clerk to the.

O.—Dr. J. M. O'Meara, Luton.

P.—Miss Peel, Saundersfoot; Messrs. Parke, Davis, and Co., Lond.

R.—Mr. W. Ramsay, Melbourne; Royal National Orthopædic Hospital, Lond., Secretary of.

S.—Dr. T. E. Smyth, Tavistock; Mr. J. H. Starkey, Braunston; Mr. H. H. Strutt, Andover; Dr. W. S. Sharpe, Lond.; Southport Infirmary, Secretary of; Dr. S.; Mr. J. Sampson, York; Mrs. Savill, Lond.

T.—T. S. B.

V.—Messrs. Van Alexander and Co., Lond.

W.—Mr. W. F. A. Walker, Dinas Mawddwy; W. A. S.; Messrs. W. Wood and Co., New York; Mr. F. G. S. Wilde, Cheltenham; Warrington Infirmary, Secretary of.

Z.—Messrs. C. Zimmermann and Co., Lond.

EVERY FRIDAY. THE LANCET. PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... Official and General Announcements Trade and Miscellaneous Advertisements and Situations Vacant ...	Five Lines and under £0 4 0 Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

Special Terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 35, Rue Franklin, Asnières, Paris.

THE LANCET.

No. 4517. Vol. CLXXVIII. LONDON, SATURDAY, MARCH 26, 1910. Pp. 144.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

THE LUMLEIAN LECTURES on Angina Pectoris. Delivered before the Royal College of Physicians of London by WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine in the University of Oxford.—Lect. II. (delivered on March 15th) ... 839

A LECTURE on the Treatment of the Surgical Forms of Tuberculosis by Tuberculin. Delivered at the Medical Graduates' College and Polyclinic, London, on Jan. 31st, 1910, by NATHAN RAW, M.D. Durh., M.R.C.P. Lond., F.R.S. Edin., D.P.H., Physician, Mill Road Infirmary, Liverpool; Member of the International Committee for the Prevention of Consumption ... 844

ORIGINAL ARTICLES.

The Abdominal Watersheds and their Influence on the Localisation of Intraperitoneal Infections. By CHARLES R. BOX, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng., Physician, with Charge of Outpatients, and Lecturer on Applied Anatomy, St. Thomas's Hospital; Assistant Physician to the London Fever Hospital.—(*Illustrated*) ... 848

The Treatment of Psoriasis. By E. G. GRAHAM LITTLE, B.A. Cape Univ., M.D. Lond., F.R.C.P. Lond., Physician, with Charge of the Skin Department, to St. Mary's Hospital, and to the East London Hospital for Children and Dispensary for Women; Lecturer on Dermatology, St. Mary's Hospital Medical School; Member of the Senate of the University of London.—(*Illustrated*) ... 852

On a Case of Heart-Block. By J. G. EMANUEL, B.Sc., M.D., B.S. Lond., M.R.C.P. Lond., Honorary Physician, Queen's Hospital, Birmingham. — (*Illustrated*) ... 856

The Anti-Tuberculosis Campaign in London. By D. J. WILLIAMSON, M.D., Ch.B. Edin., Medical Officer of the Paddington Dispensary for the Prevention of Consumption; formerly Resident Physician, Royal Victoria Hospital for Consumption, and Assistant Medical Officer, Victoria Dispensary for Consumption, Edinburgh.—(*Illustrated*) ... 876

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:
OBSTETRICAL AND GYNÆCOLOGICAL SECTION: — Ruptured Tubal Pregnancy.—Contact Carcinoma.—Myomectomy ... 859
CLINICAL SECTION:—Exhibition of Cases ... 859
SECTION OF BALNEOLOGY AND CLIMATOLOGY: — Arthritis Deformans ... 859

OPHTHALMOLOGICAL SOCIETY: Xerosis Conjunctivæ and Nyctalopia. — Panophthalmitis.—Exhibition of Cases ... 860

LIVERPOOL MEDICAL INSTITUTION: Ureteral Calculi and X Ray Diagnosis. — The Value of Serum- and Vaccine-therapy ... 861

EDINBURGH OBSTETRICAL SOCIETY: Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa.—Uterus Bicornis.—Antenatal Lobar Pneumonia ... 862

SOCIETY OF MEDICAL OFFICERS OF HEALTH: Disinfectants, their Scientific Uses, their Quack Uses, and their Dangers ... 862

WEST LONDON MEDICO-CHIRURGICAL SOCIETY: The Treatment of Brain Tumours ... 863

PATHOLOGICAL SOCIETY OF MANCHESTER: Demonstration on Cell Proliferation ... 863

OXFORD MEDICAL SOCIETY: Demonstration of the Gastroscope ... 863

REVIEWS AND NOTICES OF BOOKS.

Sprains and Allied Injuries of Joints. By R. H. Anglin Whitelocke, M.D., M.C.Edin., F.R.C.S.Eng. ... 864

Studies in Tuberculosis. By Henry Clarke, M.A., M.D. Cantab. ... 864

The Essentials of Chemical Physiology. By W. D. Halliburton, M.D. Lond., F.R.S. Seventh Edition ... 864

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 36. Observations on Rabies: With Special Reference to an Atrophic Form of the Disease occurring in Animals. By Major G. Lamb, M.D. Glasg., I.M.S.; and Captain A. G. McKendrick, M.B. Glasg., I.M.S. ... 865

Jahreskurse für Arztliche Fortbildung ... 865

The Fourteenth Bulletin of the Sleeping Sickness Bureau ... 866

LEADING ARTICLES.

THE PADDINGTON DISPENSARY FOR TUBERCULOSIS: SOME GENERAL REFLECTIONS ... 867

THE MEDICAL TREATMENT OF SCHOOL CHILDREN ... 868

VARICOCELE AND THE PUBLIC SERVICES ... 869

ANNOTATIONS.

Election of President of the Royal College of Physicians of London ... 871
The Exhibition of Hygiene, Dresden, 1911 ... 871
The West African Medical Staff ... 871
Dyed Easter Eggs ... 872
Irish Urban Mortality in 1909 ... 872
Spirit of Nitrous Ether in Mixtures ... 872
The Difficulties of Dispensing ... 873
Disinfection of the Skin by Means of Iodised Chloroform ... 873
The Scientific and Surgical Instruments Section of the Approaching Japan-British Exhibition ... 874
The Future of Voluntary Hospitals ... 874
Urgent Dyspnœa in Children due to Tuberculous Mediastinitis ... 874
The late Miss Isla Stewart ... 875
The Minority Report Bill ... 875
Instruction in Dental Surgery for Medical Students ... 875

LOOKING BACK.

(From THE LANCET, Saturday, March 24th, 1832.)

Address to the Medical Profession and to the Public generally ... 876

PUBLIC HEALTH.

Reports of Inspectors of the Medical Department of the Local Government Board ... 883

VITAL STATISTICS:
Vital Statistics of London during February, 1910 ... 883
Analysis of Sickness and Mortality Statistics in London during February, 1910 ... 884

SPECIAL ARTICLES.

Pellagra Investigation Committee ... 866
The Brewing of Beer containing a Minimum of Alcohol ... 881
Royal College of Surgeons of England ... 882
Royal College of Physicians of London: Election of President ... 882
The Services: Appendicitis in the German Navy ... 885
The Public Health and the Paris Floods.—(*Illustrated*) ... 889
Cholera and Plague in Russia and the Near East ... 891
Bristol and the Western Counties ... 892
Scotland ... 892
Paris ... 893
Berlin ... 893
Italy ... 894
Constantinople ... 894
United States of America ... 895
Notes from India ... 896
Australia ... 897

CORRESPONDENCE.

The Prevalence of Tuberculosis among School Children (Dr. J. Edward Squire, Dr. John Allan) ... 886
The Infectiveness of Scarlet Fever (Prof. Robert Saundby) ... 887
Legislation in Anæsthetics (Dr. J. Blumfeld) ... 888
In Good Cause (Mr. John Lentaigne and others) ... 888
Post-Graduate Lectures (Mr. E. H. Sweet) ... 888
The Early Diagnosis of Cancer of the Stomach (Dr. W. Gordon) ... 888
Congenital Diaphragmatic Hernia (Mr. William A. Fox) ... 889
To Medical Freemasons (Dr. Fred. J. Smith, Dr. William Wilson) ... 889
Hemel Hempstead Infirmary (Miss R. V. Gill) ... 889
First Aid in Strychnine Poisoning ... 902

MEDICAL NEWS.

University of Oxford ... 848
The Apothecaries' Hall of Ireland ... 852
The Manchester Consumption Hospital ... 855
Foreign University Intelligence ... 870
The Second International Congress of Occupational Diseases ... 886
The Harveian Lecture ... 890
Pass-list of the Royal College of Surgeons in Ireland (Fellowship Examination) ... 898
Imperial College of Science and Technology ... 898
Congress of German Society for Orthopædic Surgery ... 898
Royal Liverpool Country Hospital for Children ... 898
University of Sheffield ... 898
Central Midwives Board ... 898
The St. Marylebone Health Society ... 898
Deaths of Eminent Foreign Medical Men ... 899
Dublin Hospitals Tuberculosis Committee ... 899
Irish Medical Schools and Graduates' Association ... 899

PARLIAMENTARY INTELLIGENCE.

House of Commons: Cow-pox and Workmen's Compensation; Indian Medical Service; the General Hospital, Madras; the Medical College, Madras; Typhoid Fever in Madeira; Deaths from Anthrax; Imported Chinese Pork ... 899

Books, &c., received ... 900
Appointments ... 900
Vacancies ... 900
Births, Marriages, and Deaths ... 901
Notes, Short Comments, and Answers to Correspondents ... 901
Medical Diary ... 903
Acknowledgments of Communications received ... 904

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

COVER

PAGE

BAILLIERE, TINDALL & COX:—
- Gardner .... Surgical Anæsthesia i
- Jennings .... The Morphia Habit i
- Spicer ...... New Cardinal Principle in the Treatment of Disease i

BALE, SONS & DANIELSSON:—
- Moullin .... Inflammation of the Appendix i
- „ .... Treatment of Gastric Ulcer i

CASSELL & CO.:—
- Yarr .... Military Ophthalmology i

CELTIC PRESS:—
- White ...... Infected Ears i

CHURCHILL, J. & A.:—
- Fenwick, E. H. .... Clinical Cystoscopy i
- „ .... Operative, &c., Tumours of the Urinary Bladder i
- „ .... Ulceration of Bladder .. i
- „ .... Diagnosis, &c., of Urinary Stone i
- „ .... Obscure Diseases of the Kidney i

GLAISHER:—
- Herschell .. Indigestion i

LEWIS:—
- Lewis's Circulating Library i
- Moullin .... Enlargement of the Prostate i
- „ .... Inflammation of the Bladder i
- Roth .... Curvature of the Spine i
- Tilley ...... Diseases of the Nose, &c. i

PAGE

LONGMANS, GREEN & CO.:—
- Hare .... Food Factor in Disease i

MEDICAL PUBLISHING CO.:—
- Lane .... Cleft Palate & Hare Lip i
- „ .... Treatment of Fractures i
- Young ...... Exclusive Proteid Diet i

NISBET & CO.:—
- Lane .... Chronic Constipation .. i

SAUNDERS COMPANY:—
- Saunders' Books for the Practitioner on Diseases of Children i

MEDICAL LIBRARIES, &c.:—
- Norwood Sanatorium— Hare: Inebriety i

BAILLIERE, TINDALL & COX:—
- Andrew .... Age Incidence, &c. 5
- Ball .... Diseases of the Nose, &c. 5
- Bidwell .... Intestinal Surgery 10
- Blumfeld .... Anæsthetics 3
- Clarke ...... Congenital Dislocation of the Hip 5
- Giles .... Gynæcological Diagnosis 5
- Leedham-Green .... Gonorrhœa in the Male 5
- „ .... Sterilisation of Hands .. 5
- McKisack .. Dictionary of Medical Diagnosis 5
- Minett ...... Differential Diagnosis of Bacteria &c. 6
- Stuart-Low .. Mucous Membranes 5
- Thorne ...... Nauheim Treatment of Heart Disease 5
- Vincent .... Nutrition of the Infant 5
- Whiting .... Aids to Medical Diagnosis 5

PAGE

CASSELL & CO.:—
- Morris, Sir M. .... Diseases of the Skin .. 8

CHURCHILL, J. & A.:—
- Thorne, Bezly .... Schott Nauheim Treatment, &c., of the Heart 10

C. V. MOSBY MEDICAL BOOK & PUBLISHING CO.:—
- Ochsner & Thompson. Surgery and Pathology of Thyroid Glands 9

FROWDE AND HODDER & STOUGHTON:—
- Lockwood .. Aseptic Surgery 6
- „ .. Clinical Lectures and Addresses in Surgery .. 6

HODGETTS:—
- Public Health Service Directory and Year Book 8

LEWIS:—
- Lewers ...... Diseases of Women 6
- „ ...... Cancer of the Uterus .. 5
- Martindale & Westcott .. Extra Pharmacopœia .. 8

LONGMANS, GREEN & CO.:—
- Bennett, Sir W. .... Abdominal Hernia 10
- „ .... Varix 10
- „ .... Varicocele 10
- „ .... Varicose Veins 10

MACMILLAN & CO.:—
- Lockwood .. Appendicitis 5

MEDICAL PUBLISHING CO.:—
- Bennett, Sir W. .... Appendicitis 10

PAGE

MURRAY:—
- Boyce, Sir R. Health, Progress, &c. .. 8

REBMAN:—
- Barnett .... Accidental Injuries to Workmen 8
- Greene ...... Medical Diagnosis 8
- Moure ...... Disease of Pharynx, &c. 6
- The Maniac 6

SAUNDERS COMPANY:—
- Frühwald & Westcott .. Diseases of Children 3
- Griffith ...... Care of the Baby 3
- Hecker, Trumpp & Abt .... Atlas of Children 3
- Kerley ...... Treatment of Children's Diseases 5
- Kerr .... Diagnostics of Children's Diseases 3
- McCombs .... Diseases of Children for Nurses 3
- Rurah ...... Diseases of Children 3

SMITH, ELDER & CO.:—
- Tirard ...... Albuminuria, &c. 8

THE LANCET:—
- Territorial Medical Service 7

WRIGHT & SONS (BRISTOL):—
- Medical Annual, 1910 7

MEDICAL LIBRARIES, &c.:—
- Baker—Book Bargains 10
- Beasley & Ketley—Stammering 8
- Behnke—Stammering 8
- Hygienic Handbook 6
- Journal of the Royal Statistical Soc. 8
- Matthews Bros — Wood: Application of Trusses 6

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
- Ancoats Hospital, Manchester 68
- Blackburn and East Lancs. Infirmary 66
- Borough of Ilkeston 68
- Bristol General Hospital 67
- Bristol Royal Hos. for Sick Children 67
- Cancer Hospital, Fulham-road 66
- Cheltenham General Hospital 63
- City of London Hospital for Diseases of the Chest 66
- County Borough of Croydon 67
- Croydon General Hospital 68
- Darlington Hospital and Dispensary 67
- Dreadnought Hospital, Greenwich .. 67
- East London Hospital for Children, &c., Shadwell 66
- Essex County Hospital, Colchester .. 73
- Kidderminster Infirmary 67
- Leicestershire and Rutland Asylum .. 66
- Leith Hospital 67
- London Fever Hospital, Islington 66
- London Throat Hospital, Great Portland-street 57
- Manchester Northern Hos. for Women and Children 56
- Newcastle-on-Tyne Hospital for Sick Children 87
- North Riding Infirmary, Middlesbrough 68
- North Staffordshire Infirmary, &c., Stoke-on-Trent 68
- Rotherham Hospital and Dispensary 66
- Royal Albert Hospital, Devonport 58
- Royal Ear Hospital, Soho 67
- Royal Institute of Public Health 68
- Royal Mineral Water Hospital, Bath 68
- Royal National Orthopædic Hospital 67
- Royal Naval Medical Service 65
- Royal Southern Hospital, Liverpool 66
- Rural District Council of Stow-on-the-Wold 67
- St. Marylebone General Dispensary .. 66
- Salford Royal Hospital 68
- Salop, &c., Asylum, Shrewsbury 66
- Samaritan Free Hospital for Women 66
- Sheffield Royal Hospital 67
- Somerset Hospital, Capetown 68
- Southwark Union, London 73
- Staffordshire General Infirmary 88
- Throat Hospital, Golden-square 66
- University College Hospital 68
- University of Sheffield 66
- Wakefield General Hospital 66
- Warneford, Leamington, and South Warwickshire General Hospital 66
- West African Medical Staff 68
- West Riding of Yorkshire 67
- York County Asylum 68
- York Dispensary 66

ASSISTANCIES, MEDICAL 72

ASYLUMS, HOMES, &c.:—
- Applegarth Sanatorium, Northallerton 64
- Ashbrook Hall, St. Leonards-on-Sea .. 65
- Ashwood House, Kingswinford 69
- Barnsley Hall, Bromsgrove 60
- Barnwood House Hospital 50

ASYLUMS—(Continued).
- Bishopstone House, Bedford 59
- Brunton House, Lancaster 65
- Buntingford House Retreat, Buntingford 61
- Camberwell House, Peckham-road 59
- Cheadle Royal 59
- Churchill, Mevagissey 65
- Clarence Lodge, Clapham-park 59
- Coppice, The, Nottingham 60
- Court Hall, Kenton 60
- Crooksbury Sanatorium, Surrey 63
- Dalrymple House, Rickmansworth .. 53
- David Lewis Colony, Alderley Edge .. 58
- Ghyll Retreat, Cockermouth 62
- Grove House, Church Stretton 60
- Grove, The, Catton, Norwich 60
- Haslemere Nursing Home 65
- Haydock Lodge, Newton-le-Willows .. 61
- Heigham Hall, Norwich 59
- Home for Epileptics, Maghull 65
- Home Sanatorium, West Southbourne 63
- Hon. Sec., Chancery lane 65
- Invernith Lodge Retreat, Colinsburgh 62
- Kingsdown House, Box 59
- Lady Supt., Clapham Park 65
- Lady Superintendent, Streatham 66
- Leigh House, Warwick 65
- London Fever Hospital, Islington 65
- London Open-Air Sanatorium, Wokingham 62
- Malling Place, Kent 80
- Melbourne House, Leicester 58
- Middelburg Sanatorium, Transvaal .. 63
- Middleton Hall, Co. Durham 69
- Miss Goffe, Finchley 65
- Moat House, Tamworth 60
- Newlands House, Tooting 59
- Newmains Retreat, Lancashire 61
- Nordrach-on-Dee, Banchory 63
- Nordrach-upon-Mendip Sanatorium .. 83
- Northlands Retreat, Wandsworth 68
- Northumberland House, Finsbury-pk. 61
- Northwoods House, Winterbourne 61
- Norwood Sanatorium 61
- No. 116, L.O., Strand 65
- No. 379, L.O., Strand 65
- No. 578, L.O., Strand 65
- Osea Island, Heybridge 58
- Otto House, West Kensington 59
- Painswick Sanatorium 64
- Peckham House, Peckham-road 61
- Plas-yn-Dinas, Merionethshire 62
- Plympton House, South Devon 60
- Portsmouth Corporation Mental Hos. 60
- St. Andrew's Hospital, Northampton 60
- St. Luke's Hospital, E.C. 69
- Sanatorium Clavadel 65
- Sister, Bexhill-on-Sea 65
- Springfield House Private Asylum, Bedford 60
- Stocker, Craven-street 66
- Stretton House, Church Stretton 60
- Supt., Wanstead 65
- The Grange, Rotherham 59
- The Retreat, York 59
- Tower House, Leicester 68
- Vale of Clwyd Sanatorium 63
- Warneford Asylum, Oxford 59
- Whitmead Hill Sanatorium, Farnham 64
- Wonford House, Exeter 60

ASYLUMS—(Continued).
- Wyo House, Buxton 60
- Yarrow Convalescent Home, Broadstairs 62

FINANCIAL, &c.:—
- Birkbeck Bank 66
- Equitable Reversionary Interest Soc. 56

HEALTH RESORTS, BATHS, &c.:—
- Aberystwyth, the Biarritz of Wales .. 64
- Geneva Hydrotherapic Establishment 65
- Leysin, Switzerland 65
- Smedley's, Matlock 64
- The Harrogate Hydropathic 64
- Wiesbaden 64

HOTELS:—
- White Hart Hotel, Margate 64

HOUSE & ESTATE AGENTS:—
- Bedford & Co., Wigmore-street 71
- Coade & Son, Southampton-row 72
- Doyle, Bedford-row 72
- Jackson, Mitcham 72
- Ley Clark, Wimpole-street 71
- Lofts & Warner, Berkeley-square 72
- No. 121, L.O., Strand 72
- No. 378, L.O., Strand 72
- No. 380, L.O., Strand 72
- No. 387, L.O., Strand 72
- Wright, Parkfield 72

CONSULTING-ROOMS:—
- Ley Clark, Wimpole-street 72
- No. 381, L.O., Strand 72
- Physician, Belgrave-square 72
- Streat, Portman-street 72

LIFE & FIRE ASSURANCES:—
- General Life Assurance Co. 56
- National Provident Institution 53
- Prudential 56
- Royal Exchange Assurance 56

MASSAGE:—
- H. M. S., Regent's Park 57

MEDICAL ACCOUNTANTS, &c:—
- Turner 72

MEDICAL AGENTS:—
- Blundell & Rigby 71
- Fieldhall, Limited 70
- Manchester Medical Agency 71
- Manchester Medical Association 71
- Medical Agency 71
- Needes, Herbert 68
- Needes, J. C. 71
- Peacock & Hadley 71
- Reynolds & Branson 63
- Scholastic, Clerical, &c., Assoc. 69
- Turner 70

MEDICAL SCHOOLS:—

(LONDON.)
- Charing Cross Hos. Medical College .. 55
- St. Mary's Hospital Medical School .. 54
- West London Post-Graduate College 55

MEDICAL SCHOOLS—(Continued).
- Westminster Hospital Medical School 73

(PROVINCIAL, &c.)
- University of Durham College of Medicine, Newcastle-upon-Tyne 55

NURSING INSTITUTES:—
- Army and Navy Male Nurses' Co-operation 67
- General Nursing Association 57
- Hospital for Sick Children, Great Ormond-street 57
- Leeds Trained Nurses' Institution 57
- London Nurses' Association 67
- Male Nurses' Association 57
- Male Nurses' Co-operation 58
- Mental Nurses' Co-operation 57
- Metropolitan Temperance Association 58
- National Hos. Male Nurses' Assoc. 67
- Nurses' Co-operation, Portland-place 57
- St. John's House 67
- St. Luke's Hospital, E.C. 57
- Temperance Male and Female Nurses' Co-operation 58
- Temperance Male Nurses' Co-operation 58

OFFICIAL NOTICES:—
- City of London Lying-in Hospital 54
- Educational Institute of Scotland 58
- London School of Clinical Medicine .. 55
- Medical Graduates' College, &c. 65
- National University of Ireland 55, 56, 73
- North-East London Post-Graduate College 56
- Queen Charlotte's Lying-in Hospital .. 54
- Royal College of Physicians and Surgeons of Edinburgh, &c. 56
- Royal College of Physicians of London 54
- Royal Ear Hospital, Soho 54
- Royal Institute of Public Health 64
- Royal London Ophthalmic Hospital .. 55
- St. Mary's Hospital Medical School .. 54
- Society for Relief of Widows, &c., of Medical Men 55
- Surgical Aid Society 56
- University College 54
- University of Cambridge 55
- University of London 54
- University of Wales 55
- West-End Hospital for Diseases of the Nervous System 54

PARTNERSHIPS & PRACTICES 72

RAILWAY & STEAMSHIP CO.'S:—
- Elder, Dempster & Co.— Tours to Jamaica 67
- New Zealand Shipping Co. 67
- Orient Co.'s Cruises 56
- R.M.S.P.—Tours 67
- „ Special Yachting Cruises .. 57

TUTORS & LECTURERS:—
- Carlyon College 55
- Fellowship 56
- Knight 66
- No. 113, L.O. .. 73
- No. 125, L.O. .. 58
- Schnelle 56
- Weymouth 64
- Wilson 58

(For Index to Trade and Miscellaneous Advertisements see page 4.)

SAUNDERS' BOOKS ON
Diseases of Children

Kerley's Treatment of Children's Diseases

NEW (2nd) EDITION

Dr. Kerley has presented modern methods of management and treatment in greater detail than has ever before been attempted. The *British Medical Journal* says: "Dr. Kerley's book is one of the best on the subject that has come under our notice. All through it shows evidence of ripe experience and sound judgment, and many important points are dealt with that are scarcely noticed in most of the ordinary books." The work contains an excellent illustrated chapter on *Gymnastic Therapeutics*.

Send for Circular.

Octavo of 597 pages, illustrated. By CHARLES GILMORE KERLEY, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Cloth, 21s. net.

Kerr's Diagnostics of Children's Diseases

Dr. Kerr has *particularly emphasized the objective symptoms*, indicating the importance of their correct interpretation. *The Lancet* says: "As a work on diagnosis it is very complete, and it is well illustrated by a large number of original drawings." Just sufficient of etiology and pathology has been introduced to assist in arriving at right conclusions; and sequelæ have been considered only to the extent that they may be anticipated and thus early recognised. The physician will find the many original illustrations a source of much help. *Send for Circular.*

Octavo volume of 542 pages, illustrated. By LE GRAND KERR, M.D., Professor of Diseases of Children in the Brooklyn Post Graduate Medical School, Brooklyn. Cloth, 21s. net.

Ruhräh's Diseases of Children

Dr. Ruhräh has presented all the important facts concisely and explicitly, the therapeutics of infancy and childhood being outlined very carefully and clearly. *The Lancet* says: "It is accurate to an unusual degree and replete with all the latest information contained in the larger text-books and important monographs in the domain of pediatrics." There are definite directions for dosage and prescribing, and a number of useful prescriptions are included.

12mo of 423 pages, illustrated. By JOHN RUHRÄH, M.D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Flexible leather, 10s. net.

McCOMBS—Diseases of Children for Nurses

By ROBERT S. McCOMBS, M.D., Instructor of Nurses at the Children's Hospital of Philadelphia. 12mo of 431 pages, illustrated. Cloth 10s. net.

Send for Circular.

HECKER, TRUMPP, ABT—Atlas of Children

By Dr. R. HECKER and Dr. J. TRUMPP, of Munich. Edited, with additions, by ISAAC ABT, M.D., Associate Professor of Diseases of Children, Rush Medical College, Chicago. With 48 coloured plates, 144 text cuts, and 465 pages of text. Cloth, 21s. net.

GRIFFITH—Care of the Baby

By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children, Hospital of the University of Pennsylvania. *Fourth Revised Edition.* 12mo of 454 pages, illustrated. Cloth, 6s. 6d. net. *Send for Circular.*

FRÜHWALD AND WESTCOTT—Children

By Professor Dr. FERDINAND FRÜHWALD, of Vienna. Edited, with additions, by THOMPSON S. WESTCOTT, M.D., Associate in Diseases of Children, University of Pennsylvania. Octavo of 533 pages, with 175 illustrations. Cloth, 18s. net.

Books sent, Carriage Paid, on Receipt of Price.

W. B. SAUNDERS COMPANY, 9, Henrietta Street, London, W.C.

Australian Agency: 430, Bourke St., Melbourne, where our Books can be bought at London prices.

INDEX—(CONTINUED).

TRADE AND MISCELLANEOUS ADVERTISEMENTS

COVER

PAGE

CHEMISTS & DRUGGISTS:—

British Oxygen Co.—Oxygen iii
Jeyes' Sanitary Compounds Co.—
  Cyllin Pastilles ii
Merck—
  Perhydrol ii
  Magnesium-Perhydrol ii
  Zinc-Perhydrol ii

FOODS:—

Fairchild Bros. & Foster—
  Panopepton iv
Fry's Malted Cocoa iii
Valentine's Meat Juice Co.—
  Meat Juice iii

AMBULANCES:—

St. John Ambulance—
  Invalid Carriages 12

CARRIAGES, MOTORS, &c.:—

Argylls, Ltd.—Argyll Cars 12
Armstrong—
  Coachmen's, Grooms' & Chauffeurs' Liveries 12
Goodrich Co.—
  Goodrich Tyres 13
Harvey Frost & Co.—
  Challenge Reinforced Tubes 12
Morgan & Co.—Adler Car 13
No. 381, L.O., Strand—
  Argyll Car for sale 73
Perry Thornton's Ford Cars 13

CHEMISTS & DRUGGISTS:—

Allen & Hanburys—
  Byno-Hypophosphites 33
  Medical Izal 32
Antikamnia Chemical Co.—
  Antikamnia Tablets 40
  „ and Codeine Tablets 40
Armour & Co.—
  Extract of Red Bone Marrow 39
Bash & Co.—
  Emulsio Petrolei Phosph. Tipnee 19
Banger's Food, Ltd.—
  Essence of Rennet 23
  Pancreatised Lentil Flour 23
  Pepsine Pills 23
Bristol-Myers Co.—Sal Hepatica 49
British Diamalt Co.—
  Diamalt with Cod Liver Oil 38
British Drug Houses—Ficolax 46

PAGE

CHEMISTS—(Continued).

Bullock & Co.—
  Pepsina Porci 46
  Acid Glycerine of Pepsine 46
Burroughs, Wellcome & Co.—
  Tabloid Soamin 35
  „ Orsudan 35
  Compound Menthol Snuff 34
Carnrick (G. W.) Co.—Trypsogen 47
Christy & Co.—
  Glyco-Thymoline 24
  Ergoapiol 48
  Anasarcin 25
Comar & Son—
  Noury's Iodinated Wine 18
  Cacodylate of Sodium 18
  Enésol 18
Denver Chemical Co.—
  Antiphlogistine 30
Dinneford's Fluid Magnesia 50
Fairchild Bros. & Foster—
  Zymine Peptonising Tubes 27
Fellows' Syrup of Hypophosphites .. 20
Fletcher, Fletcher & Co.—Vibrona 31
Grillon—Tamar Indien Grillon 74
Hewlett & Son—
  Mist. Hepatica Conc. 74
Kutnow & Co.—Kutnow's Powder 22
Maltine Manufacturing Co.—
  Maltine with Cod Liver Oil 36
Meister Lucius & Bruning—
  Valyl-Hoechst 18
  Sabromin 18
  Pegnin 18
  Migrainine 18
  Diethylbarbituric Acid 18
  Sodium Diethylbarbiturate 18
Menley & James—
  Glidine 21
Miol Manufacturing Co.—Miol 21
Muller, Maclean & Co.—
  Waterbury Metabolized Cod Liver Oil Compound 46
Newbery & Sons—
  Pulvis Jacobi Ver. 50
Parke, Davis & Co.—
  Antidiphtheria Serum 26
  Antistreptococcus Serum 26
  Antitetanus Serum 26
Pierre's Eau Dentifrice 49
Raimes & Co.—
  Slinger's Nutrient Suppositories .. 49
Risiecol, Ltd.—Risiecol 49
Roberts & Co.—Lacteol 28
Saccharin Corporation, Ltd.—
  Novocain 48
Scott & Bowne—
  Scott's Emulsion 42
Society of Chemical Industry in Basle—Phytin 49
Tidman's Sea Salt 47
Tyree—Antiseptic Powder 47
Wander—Ovaltine 43
Wright, Layman & Umney—
  Liquor Carbonis Detergens 48, 50
  Coal Tar Soap 53
Wulfing & Co.—
  Sanatogen 29
  Formamint 29
Zimmermann, A. & M.—
  Sperminum 43
  Nastin 48
  Ketyn 48
  Schering's Urotropin 20

PAGE

CHEMISTS—(Continued).

Zimmermann & Co.—
  Acidol 41
  Acidol-Pepsin 41
  Lecithin Agfa 41
  Borovertin 41

FOODS:—

Allen & Hanburys—
  Allenburys' Diet 37
Aylesbury Dairy Co.—
  Lactor 40
  „ Bulgarie isis 40
  „ Buttermilk 40
  „ Cream Cheese 40
  Fermenlactyl Buttermilk 40
Blatchley's Diabetic Preparations 52
Bonthron & Co.—Diabetic Foods 50
Brand & Co.—Essence of Chicken 45
Branson & Co.—
  Branson's Spade Coffee 50
Callard & Co.—New Diabetic Foods .. 61
Gerth van Wyk & Co.—
  Hommel's Hæmatogen 41
Hardie & Co.—Gluten Flour 62
Nestlé & Anglo-Swiss Condensed Milk Co.—Milo Food 42
Plasmon, Ltd.—
  Plasmon Cocoa 74
Rowntree's Cocoa 60
Savory & Moore—Best Food 19
Tibbles' Vi-Cocoa, Ltd.—Vi-Cocoa 44
Van Abbott & Sons—Gluten Flour .. 52
Welford & Sons—
  Sauermilch 44
  „ Whey 44
  „ Cheesa 44
  Fermenlactyl Buttermilk 44
  Curdled Milk 44
  Buttermilk 44
Wilts United Dairies—
  Albiron 51
Wulfing & Co.—Albulactin 28

FURNITURE, &c.:—

Carter—
  Invalid and Comfort Furniture .. 17

MED. & SURG. APPLIANCES:—

Bailey & Son—
  Patent Belts 16
  Trusses 16
  Elastic Stockings 18
Burroughs, Wellcome & Co.—
  Vaporole Ammonium Chloride Inhaler 34
Cocking—
  Poro-Plastic Jacket and Splints .. 11
Dunlop Rubber Co.—
  Dunlop Hot Water Bottles 12
Hogg & Son—
  Improved Steam Vaporisers 10
Holland—Improved Instep Arch Sock 12
Krohne & Sesemann—Bandages 10
Millikin & Lawley—Osteology, &c. .. 62
Robinson & Sons—Gamgee Tissue 10
Sandow's Patent Health and Perfect Fitting Corset 15
Southall Bros. & Barclay—
  Accouchement Sheets 53
  Southalls' Towels 53
Spear-Marshall Co.—
  Leucodescent Therapeutic Lamp .. 16
Timpson & Co.—
  Zo Adhesive Plaster 10

PAGE

MED. APPLIANCES—(Continued).

Van Horn & Sawtell—
  Van Horn Catgut 47
Wright, Layman & Umney—
  Coal Tar Inhaler and Vaporiser .. 11
Zeal—Repello Thermometer 53

MINERAL WATERS:—

Contrexeville Pavillon 17
Davis—Tarasp Water 52
Ingram & Royle—
  Giesshübler Mineral Water 45
Royal Fachingen Natural Mineral Water 46

OPTICIANS:—

Angus & Co.—
  Microscopes and Scientific Apparatus 52
Bausch & Lomb Optical Co.—
  Microscopes 11

PRINTERS & ENGRAVERS:—

Cooke & Co.—
  Brass Name Plates and Lamps 10
Osborne & Co.—
  Brass Door Plates 53

SANITARY APPLIANCES, &c.:—

Aymard Patent Milk Sterilizer Co.—
  Milk Sterilizer 11
Chinosol Hygienic Co.—
  Chinosol 47
Condy's Fluid 53
Newton, Chambers & Co.—Izal 32

STATIONERY, &c.:—

Goodman & Sons—
  Goodman's Combined Visiting List and Ledger 10

TAILORS, BOOTMAKERS, &c.:—

Burberrys—Top Coats 14
Holland—Natural-Shaped Boots 12

VACCINE LYMPH:—

Allen & Hanburys—
  Calf Lymph 53
Jenner Institute for Calf Lymph 53
Roberts & Co.—
  Chaumier's Calf Lymph 53

WINES, BEER, SPIRITS, &c.:—

Back & Co.—
  "G.B." Diabetic Whisky 50
Distillers Co.—
  Cambus Whisky 51
Usher & Co.—Whisky 45

MISCELLANEOUS:—

Alfred, York-road—
  Motor Driver 73
M.D., No. 726, L.O., Strand—
  Sight-testing Taught 73
Telephone Instalment System Co. 73

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ... ... } Five Lines and under £0 4
Official and General Announcements }
Trade and Miscellaneous Advertisements and Situations Vacant ... } Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*
Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*
Special terms for Position Pages.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith & Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

OFFICES: 423 and 424, STRAND, LONDON, W.C.; and 1, 2, and 3, BEDFORD STREET, Adjoining.

Agent for the Advertisement Department in France—J. ASTIER 35 Rue Franklin, Asnieres, Paris.

BAILLIÈRE, TINDALL & COX'S PUBLICATIONS.

Pp. x. + 583. With 77 Illustrations. Price 10s. 6d. *net.*

MEDICAL DIAGNOSIS.

A TREATISE IN DICTIONARY FORM ON SIGNS AND SYMPTOMS OBSERVED IN DISEASED CONDITIONS.

By H. L. McKISACK, M.D., M.R.C.P.Lond.,
Physician to the Royal Victoria Hospital, Belfast.

"...... a guide to which one can turn for help. ...... Students will find it useful in clinical work, and practitioners will also be able to consult it with advantage."—THE LANCET.

THIRD EDITION. Pp. 92. With 28 Photographs of the Schott Exercises and 30 other Illustrations. Price 3s. 6d. *net.*

THE NAUHEIM TREATMENT OF DISEASES OF THE HEART AND CIRCULATION.

By LESLIE THORNE THORNE, M.D., B.S.

"It is the best and most practical work on this subject that we have had the opportunity of perusing."—WEST LONDON MED. JOUR.

Now Ready. Pp. xx. + 440. Price 10s. 6d. *net.*

AGE INCIDENCE, SEX, AND COMPARATIVE FREQUENCY IN DISEASE.

By JAMES GRANT ANDREW, M.B., C.M.,
F.F.P. & S. Glasg.,
Surgeon to the Victoria Infirmary, Glasgow.

This work should prove to be of value as an aid in diagnosis.

Now Ready. Demy 8vo, pp. viii. + 92. With 55 Illustrations. Price 3s. 6d. *net.*

CONGENITAL DISLOCATION OF THE HIP.

By J. JACKSON CLARKE, M.B.Lond., F.R.C.S.,
Senior Surgeon to the Hampstead and North-West London Hospital, and Surgeon to the Royal National Orthopædic Hospital.

Pp. 68. With 2 Plates, Coloured. Price 2s. 6d. *net.*

MUCOUS MEMBRANES,

Normal and Abnormal, including Mucin and Malignancy.

By W. STUART-LOW, F.R.C.S. Eng.,
Lecturer in Practical Rhinology and Otology, Medical Graduates' College.

Pp. viii. + 72. Price 2s. 6d. *net.*

DIFFERENTIAL DIAGNOSIS OF BACTERIA AND PRACTICAL BACTERIOLOGY.

By E. P. MINETT, M.D., D.P.H.,
Assistant Bacteriologist and Demonstrator in Bacteriology and Microscopical Pathology, Guy's Hospital.

Pp. x. + 212. With 39 Original Figures. Price 7s. 6d. *net.*

GYNÆCOLOGICAL DIAGNOSIS.

By ARTHUR E. GILES, M.D., B.Sc. Lond.,
M.R.C.P. Lond., F.R.C.S. Edin.,
Gynæcologist to the Prince of Wales' General Hospital, Tottenham; Surgeon to Out-Patients, Chelsea Hospital for Women.

"We strongly recommend the book to general practitioners and students who are desirous of obtaining a firm grasp of the principles of gynæcological diagnosis."—MEDICAL PRESS, &c.

FIFTH EDITION. Pp. xii. + 388. With 78 Illustrations. Price 7s. 6d. *net.*

HANDBOOK OF DISEASES OF THE NOSE AND PHARYNX.

By J. B. BALL, M.D., F.R.C.P.,
Consulting Physician to the Throat and Ear Department, West London Hospital; late Lecturer on Diseases of the Throat, Nose and Ear, West London Post-Graduate College.

"It is written in an elegant and lucid style."—HOSPITAL.

Now Ready. THIRD EDITION. With New Illustrations and Coloured Plate. Price 10s. 6d. *net.*

THE NUTRITION OF THE INFANT.

By RALPH VINCENT, M.D., B.S., M.R.C.P.Lond.,
Senior Physician, Infants Hospital, Westminster.

SECOND EDITION. Pp. 124. With 17 Figures. Price 2s. 6d. *net.*

ANÆSTHETICS.

By J. BLUMFELD, M.D. Cantab.,
Senior Anæsthetist to St. George's Hospital.

"The best handbook on Anæsthetics that has yet appeared."
—MEDICAL PRESS.

SECOND EDITION. Pp. xii.+160. With 47 Figures. Price 5s. *net.*

THE TREATMENT OF GONORRHŒA IN THE MALE.

By C. LEEDHAM-GREEN, M.B., F.R.C.S.,
Surgeon to the Queen's and the Children's Hospitals, Birmingham.

"The most accurate, concise, and, in its limited scope, weighty account of this subject we have met with in our own language."
—BIRMINGHAM MEDICAL REVIEW, June, 1906.

BY THE SAME AUTHOR.

THE STERILISATION OF THE HANDS.

Price 2s. 6d. *net.*

"We put a high value on the researches recorded in this book."
—THE LANCET.

With 8 Illustrations. Price, cloth, 2s. 6d.

AIDS TO MEDICAL DIAGNOSIS.

By A. J. WHITING, M.D.

BAILLIÈRE, TINDALL & COX, 8 Henrietta Street, Covent Garden, London.

NEW (THIRD) EDITION.
REVISED AND ENLARGED.

MEDICAL DIAGNOSIS:

A Manual for Students and Practitioners.

By **CHARLES LYMAN GREENE, M.D.,**
Author of "Greene's Medical Examination for Life Insurance"; Professor of Medicine and Chief of the Department in the College of Medicine, Minnesota.

Crown 8vo, 725 pp., 7 Coloured Plates and 248 Illustrations.
Cloth. Price 15s. net.

ACCIDENTAL INJURIES TO WORKMEN.

WITH REFERENCE to WORKMEN'S COMPENSATION ACT, 1906.

By **H. NORMAN BARNETT, F.R C.S.,**
Surgical Registrar, Royal Victoria Hospital, and Surgeon, Cripples' Home, Belfast; Author of "Legal Responsibility of the Drunkard," &c.

With Article on **Injuries to the Organs of Special Sense** by **CECIL E. SHAW, M.A., M.Ch., M.D.,** Lecturer on Ophthalmology and Otology, Queen's University of Belfast; Assistant Surgeon, Belfast Ophthalmic Hospital, &c.

And **Legal Introduction** by **THOMAS J. CAMPBELL, M.A., LL.B.,** Barrister-at-Law; Author of "Workmen's Compensation" and "Irish Land Purchase."

Demy 8vo, 384 pp. Cloth. Price 7s. 6d. net.

REBMAN

ELEMENTARY PRACTICAL TREATISE ON

DISEASES OF THE PHARYNX AND LARYNX.

By **Dr. E. J. MOURE** (Bordeaux).
Translated and adapted by J. MALCOLM FARQUHARSON, M.B., F.R.C.P.Ed., &c., Senior Surgeon, Ear and Throat Department, Edinburgh Eye and Ear Infirmary, &c.

The author has striven to furnish General Practitioners with useful information regarding the Affections of the Pharynx and Larynx with which they are not always conversant, and this work is the outcome of nearly thirty years' personal clinical and therapeutical observation.

Demy 8vo, 416 pages, with 210 Illustrations in the Text, many in Colours. Cloth. Price 12s. 6d. net.

THE MANIAC:

A Realistic Study of Madness from the Maniac's Point of View.

The Publishers are perfectly satisfied that this book is a genuine record of a case of madness from the patient's point of view, and therefore have no hesitation in recommending it as a most valuable psychological study to all interested in such subjects and ESPECIALLY TO THE MEDICAL PROFESSION.

The British Medical Journal says:—"'The Maniac' has been very diversely received by the medical men who have read it. Her tale is told in a very graphic and realistic fashion by the patient, a woman journalist .... It very well illustrates by concrete individual experiences, the underlying mechanism of many of the phenomena of mental disorder. ......The anonymous writer's own explanations of her illness are strangely exotic, and throw some strange light on her case. Her central idea is that during her madness her 'ego' was actually extruded from her body......."

Crown 8vo. Cloth Price 6s.

LTD.,
129, SHAFTESBURY AVENUE, LONDON, W.C.

Now Ready. Price 1s.

APPLICATION OF TRUSSES

to HERNIÆ. Clinical Lecture delivered at King's College Hospital. By the late JOHN WOOD, F.R.S., Senior Surgeon to King's College Hospital. Reprinted from "Medical Examiner."
With Illustrations.
London: Matthews Brothers, 10, New Oxford-street, W.C.

THE

HYGIENIC HANDBOOK

(220 pages) giving full details, in catalogue form, of the Foods, Wines, Waters, Medical Preparations, and Surgical Appliances passed by the Examining Board of the Institute of Hygiene, will be forwarded to any member of the medical profession post free on receipt of a postcard addressed to The Secretary,
INCORPORATED INSTITUTE OF HYGIENE,
Devonshire Street, Harley Street, W.

LEWERS'S

DISEASES OF WOMEN.

SIXTH EDITION. 12th Thousand. Crown 8vo, 10s. 6d.

By **ARTHUR H. N. LEWERS,** M.D. (Lond.), F.R.C.P. (Lond.), Senior Obstetric Physician to the London Hospital, Examiner in Midwifery and Diseases of Women to the Conjoint Board, &c. *By the Same Author.*

CANCER OF THE UTERUS.

Its Diagnosis and Treatment. With the After-Results in a Series of Cases treated by Radical Operation. With Original Illustrations. 10s. 6d. net.

"The book is a treatise, pathologically, surgically, and clinically of standard value, and deserves to be widely known and studied."—BRITISH MEDICAL JOURNAL.

London: H. K. Lewis, 136, Gower-street, W.C.

Journal of the Royal Statistical SOCIETY.

New Series, Vol. LXXIII., Part 3. March, 1910. Price 2s. 6d.

CONTENTS.

Urban Vital Statistics in England and Germany. By A. W. Flux, M.A. (With Discussion.)
Obituary—Emile Cheysson.
Miscellanea—Methods of Crop Reporting in Different Countries. By Ernest H. Godfrey.—The Statistics of Wages in the United Kingdom during the Nineteenth Century (Part XVII.). The Cotton Industry, Section III. By George Henry Wood, F.S.S.—Prices of Commoditie in 1909. By A. Sauerbeck.
Book Reviews, Current Notes, and other Articles.

Third Edition, crown 8vo, cloth, pp. xii.-275, price 5s. net.

ASEPTIC SURGERY

By **CHARLES BARRETT LOCKWOOD, F.R.C.S.**
Surgeon, St. Bartholomew's Hospital; late Hunterian Professor, Royal College of Surgeons of England; late Surgeon, Great Northern Central Hospital, &c., &c.

HENRY FROWDE, HODDER & STOUGHTON, London.

"The most simple yet exact treatise on the subject."—THE LANCET.

"No safer and better guide to the principles and practice of aseptic surgery can be recommended."—EDINBURGH MEDICAL JOURNAL.

"Invaluable ...... to the practical surgeon."—PRACTITIONER.

By the same Author.

THE SURGERY AND PATHOLOGY OF APPENDICITIS

Second Edition, with 62 Figs. and Microphotos. Demy 8vo, 10s. net.
MACMILLAN & Co., Ltd., London.

"Quite the best work on the vermiform appendix which has yet appeared from the London School."—EDINBURGH MEDICAL JOURNAL.

"The pathological descriptions are the fullest, the most accurate, and complete that have yet been published."—BRITISH MEDICAL JOURNAL.

"We strongly recommend every practitioner and surgeon to read, re-read, and study it."—DUBLIN JOURNAL OF MEDICAL SCIENCE.

"Probably the most able exposition on appendicitis published in the English language."—MEDICAL REVIEW.

By the same Author.

CLINICAL LECTURES AND ADDRESSES IN SURGERY

HENRY FROWDE, HODDER & STOUGHTON.
Second Edition. P. 274. Price 5s. net.

"No one can fail to be interested, instructed, and stimulated by a perusal of these lectures."—PRACTITIONER.

Now Ready. Twenty-eighth Year. Over 1000 pages for **8/6** *net.*
Enriched with 52 Full-page Plates, plain, coloured, and stereoscopic, and 108 Illustrations in the Text.

MEDICAL ANNUAL, 1910

BY MANY CONTRIBUTORS.

The New Volume, besides the usual Dictionaries of Modern Therapeutics and Treatment, contains several Special Papers of great practical interest. The Publishers believe it will merit the same cordial approval that has been accorded to the preceding issues.

Brief Synopsis of Contents.

Materia Medica and Therapeutics.
FRANK J. CHARTERIS, M.D., B.Ch.

Treatment by Bacterial Vaccines: *Illustrated.*
A. BUTLER HARRIS, M.A., M.B., B.Ch.

Radio-Activity and Electro-Therapeutics: *Illustrated.*
E. REGINALD MORTON, M.D., C.M., F.R.C.S.E.

Hormones.
DR. EMIL NOVAK, Baltimore

Sea-Water Treatment: *Illustrated with many Plates.*
S. ROBERT-SIMON, M.D., University of Paris.

Rectal Surgery
SIR CHAS. BENT BALL, M.D., F.R.C.S.

Gynæcology and Obstetrics
VICTOR BONNEY, M.S., M.D., F.R.C.S., B.Sc.

Renal and Urinary Diseases: *with 5 Coloured Plates of Urinary Deposits.*
FRANCIS D. BOYD, C.M.G., M.D.

Diseases of the Heart and Blood-Vessels.
CAREY F. COOMBS, M.D.

Urinary Surgery: *with several Illustrations*
E. HURRY FENWICK, F.R.C.S.

Acute Infectious Diseases
EDWD. W. GOODALL, M.D., B.S.

Diseases of the Blood
GEORGE LOVELL GULLAND, M.A., M.D.

Cancer. *Illustrated, and with Coloured Plate*
W. SAMPSON HANDLEY, M.S., M.D., F.R.C.S.

General Medicine and Digestive Disorders
ROBT. HUTCHISON, M.D., F.R.C.P.

General Surgery: *with Illustrations and Plates*
PRIESTLEY LEECH, M.D., F.R.C.S.

Skin Diseases: *with Stereograms and Coloured Plates*
E. GRAHAM LITTLE, M.D., F.R.C.P.

Venereal Diseases: *with Plate*
CHAS. FRED. MARSHALL, M.D., F.R.C.S.

Diseases of Ear, Throat, and Nose: *with numerous Illustrations*
WILLIAM MILLIGAN, M.D., M.Ch.
D. LINDLEY SEWELL, M.B., B.S.

Surgery of the Brain and Spine
KEITH W. MONSARRAT, M.B., C.M., F.R.C.S.

Abdominal Surgery: *Illustrated*
PROF. JAS. RUTHERFORD MORISON, F.R.C.S.
JOHN B. DEAVER, M.D. } Philadelphia
ASTLEY P. C. ASHHURST, M.D. }

Pulmonary Diseases
JOSEPH J. PERKINS, M.A., M.B., F.R.C.P.

Mental Diseases
BEDFORD PIERCE, M.D., F.R.C.P.
NORAH KEMP, M.B., C.M.

Tropical Diseases: *Illustrated*
J. W. W. STEPHENS, M.D., Cantab.

Nervous Diseases: *Illustrated*
PURVES STEWART, M.A., M.D., F.R.C.P.

Medical Diseases of Children
PROF. G. F. STILL, M.A., M.D., F.R.C.P.

Eye Diseases: *Illustrated*
A HUGH THOMPSON, M.A., M.D.
J. HERBERT YEARSLEY, M.A., F.R.C.S., M.R.C.P.

Sanitation and Law, affecting Medical Practitioners and the Public Health
JOSEPH PRIESTLEY, B.A., M.D., D.P.H.

New Inventions and Improvements in Pharmacy

The Life Assurance Directory

The Chief Medical Works published during the Year

Medical, Official, and Trade Directory

Bristol: JOHN WRIGHT & SONS Ltd. London: SIMPKIN & CO. Ltd.

Price 6d.; by post 7d.

THE TERRITORIAL MEDICAL SERVICE

By a Special Correspondent of THE LANCET.

With Preface by Sir ALFRED H. KEOGH, K.C.B., Director-General, Army Medical Service.

The Subjects dealt with include: Organization Duties in Camp—Selection of Sites for Camps—Selection of Water Supplies for Camps: Filters—Sanitary Upkeep of Camps: Latrines, Urinals; Cooking-places; Refuse Disposal—Medical Examination of Recruits: Diseases of the Heart; Teeth; Varicocele; Flat Feet; Syphilis—Selection of Men for Active Service: Age; Previous Medical History and its Bearing; Physical Examination—Some Medical Aspects of Marching—Medical Aspect of the Food Supply of the Soldier.

THE LANCET Offices, 423 & 424, Strand, W.C.; and 1 & 2, Bedford-street, adjoining.

NOW READY.

THE

Public Health Service Directory

AND YEAR BOOK, 1910.

Compiled by the Editor of "THE MEDICAL OFFICER."

The Directory includes a Calendar of Public Health Fixtures from April, 1910—March, 1911, and the following sections:

- I. Health Authorities
- II. Education Authorities
- III. Medical Officers
- IV. Public Analysts
- V. Dental Officers
- VI. Veterinary Officers
- VII. Sanitary Inspectors
- VIII. Health Visitors and School Nurses
- IX. List of Isolation Hospitals
- X. Matrons of Isolation Hospitals.

320 pp. Royal Octavo, Bound Cloth, 6/- nett, post free.

HODGETTS, Ltd., 36-38, Whitefriars Street, E.C.

THE EXTRA PHARMACOPŒIA

XIIIth EDITION.

1164 pages.

10/6 net.

By post 3d. extra.

More than a quarter of the book absolutely new.

THE HANDY VOLUME

"Maintains its reputation for accuracy and completeness."—THE BRITISH MEDICAL JOURNAL.

"A valuable and trustworthy source of reference."—THE LANCET.

"There is no medical book of the kind which is a more universal companion — a necessity for all busy practitioners."—MED. PRESS.

LONDON:
H. K. LEWIS, 136, Gower Street, W.C.

STAMMERING: Its Treatment AND REMINISCENCES OF A STAMMERER.

Post Free on application.

"TARRANGOWER," 178, Willesden Lane, Brondesbury, N.W.
Mr. B. BEASLEY. Mr. W. J. KETLEY.

STAMMERING, CLEFT-PALATE SPEECH, and LISPING.

By Mrs. EMIL BEHNKE.

Price 1s. net (postage 1½d.), of Mrs. Emil Behnke, 18, Earl's Court-square, S.W., who receives Stammerers for Treatment. REFERENCES to Doctors whose stammer Mrs. Behnke has cured, and to others.

DISEASES OF THE SKIN.

By Sir MALCOLM MORRIS, K.C.V.O.

New Edition, with many New Coloured and Black-and White Plates.

13th Thousand. 10s. 6d.

"The book fully deserves the favour it has met with in the past."—BRITISH MEDICAL JOURNAL.

"Fully representative of the best dermatological teaching of the present day."—THE LANCET.

CASSELL AND CO., LTD., LA BELLE SAUVAGE, LONDON, E.C.

HEALTH, PROGRESS AND ADMINISTRATION IN THE WEST INDIES.

By Sir RUBERT BOYCE, F.R.S.,

Author of "Mosquito or Man?" Medium 8vo, 10s. 6d. net. [Just Out.

JOHN MURRAY. ALBEMARLE STREET, W.

With Illustrations. Demy 8vo, 12s. 6d.

ALBUMINURIA AND BRIGHT'S DISEASE.

By N. TIRARD, M.D., F.R.C.P.,

Professor of the Principles and Practice of Medicine in King's College, and Senior Physician to King's College Hospital.

"Thoroughly sound and well considered, and written in a pleasing and graceful style............The descriptions of the symptoms and treatment of the various forms of Bright's Disease are clear and essentially practical."—THE LANCET.

"This is a welcome contribution to the literature of renal disease. Written mainly from the clinical standpoint and based upon the author's own experience, its practical value is enhanced by the ease and simplicity of its style and the clearness of its illustrations......... We can confidently recommend it alike as a text-book for those commencing to study the subject and as a work of reference for practitioners wishing to refresh their knowledge."—BRITISH MEDICAL JOURNAL.

London: SMITH, ELDER, & CO., 15, Waterloo Place, S.W.

READY SHORTLY.

Surgery and Pathology of the Thyroid and Parathyroid Glands

BY

ALBERT J. OCHSNER, B.S., F.R.M.S., M.D., LL.D.,

Professor of Clinical Surgery, Medical Department, University of Illinois;
Surgeon-in-Chief, Augustana Hospital and St. Mary's Hospital, Chicago,

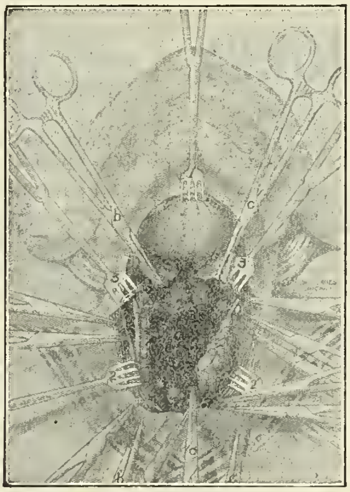
AND

RALPH L. THOMPSON, A.M., M.D.,

Professor of Pathology, Medical Department, St. Louis University, St. Louis.

500 Pages, Octavo,
100 Original Illustrations,
including 7 Coloured Plates

Send your order at once to the publishers direct or your medical book seller.



ONE-HALF ACTUAL SIZE

One of a series of thirty-one illustrations showing the successive steps in the Removal of the Thyroid Gland.

PRICE, CLOTH,
$6.00 or £1 : 5 : 0
NET.

Sent prepaid anywhere in the world.

THE Surgery of the Thyroid Gland has always been of special interest. The location of the gland, its close proximity to the principal arteries, its connection with the nervous system, its pathology, and the effect of its removal on the general system have made operations on this organ of the greatest importance.

No other organ in the body has attracted so much attention in recent years as the Parathyroid Glands. For the first time the surgeon, the internist, the physiologist and the neurologist are given an opportunity to find a summary of what has been discovered concerning the pathology of these important organs.

The C. V. MOSBY MEDICAL BOOK & PUBLISHING COMPANY
Metropolitan Building, Grand Avenue and Olive Street ST. LOUIS, MO., U.S.A.

London Agency: GEORGE KEENER & COMPANY, 16A, Red Lion Square, London, W.C., England.
Australian Agency: STIRLING & COMPANY, 117, Spring Street, Melbourne, Australia.
Canadian Agency: THE J. F. HARTZ COMPANY, Toronto, Canada.

FIFTH EDITION. With 50 Illustrations. 5s. net.

THE SCHOTT METHODS OF THE TREATMENT OF CHRONIC DISEASES OF THE HEART.

With an Account of the Nauheim Baths and of their Therapeutic Exercise

By W. BEZLY THORNE, M.D., M.R.C.P.

London: J. & A. CHURCHILL, 7, Great Marlborough Street.

By Sir WILLIAM BENNETT, K.C.V.O., F.R.C.S.

8vo, price 8s. 6d.

CLINICAL LECTURES on ABDOMINAL HERNIA, including the RADICAL CURE.

With 12 Illustrations. 8vo, price 3s. 6d.

VARIX: Its Causes and Treatment, with especial reference to THROMBOSIS.

8vo. **VARICOCELE.** Price 5s.

With 3 Plates. 8vo, price 6s.

CLINICAL LECTURES on VARICOSE VEINS of the LOWER EXTREMITIES.

LONDON: LONGMANS, GREEN & CO.

Also, price 2s., cloth.

ON APPENDICITIS. Two Clinical Lectures reprinted from THE CLINICAL JOURNAL.

LONDON: THE MEDICAL PUBLISHING COMPANY, LTD.,
22½, Bartholomew Close, E.C.

Pp. xii. + 168, with 91 Illustrations. Price 6s. net.

HANDBOOK OF
INTESTINAL SURGERY.

By L. A. BIDWELL, F.R.C.S.Eng.,

Surgeon, West London Hospital; Lecturer on Intestinal Surgery and Dean of the Post-Graduate College, &c.

London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

Book Bargains.—Singleton's Dutch and Flemish Furniture, numerous illustrations (42s.), for 11s.; Calvert's Moorish Remains in Spain (42s.) for 15s.; Fox Davies Heraldic Badges (5s.) for 2s.; Journal Mental Science, 34 Nos., £4 4s.; Scott's Autograph Collecting (5s.) for 2s. 6d.; Solon's Old English Porcelain (52s. 6d.) for 35s.; Calvert's The Alhambra and Mohammedan Architecture and Decoration (42s.) for 15s.; Rhead's Staffordshire Pots and Potters (21s.) for 10s. 6d.; Anthony Trollope's Novels, illustrated, 6 vols, 21s.; Birds of Gloucestershire, 3s.; Harmsworth Atlas (63s.) for 35s.—**Baker's Great Bookshop, 14 and 16, John Bright-street, Birmingham.**

Dr. Martin's Pure Rubber Bandages (Registered Trade Mark) for the Radical Cure of Varicose Veins, Ulcers, Eczema, and other Diseases of the Leg **(GENUINE)** are by far superior to any of the numerous imitations.

No. 3 A,	6 feet by 2¼ inches, thin, for ankle,	price 3s. 6d.
,, 3	do. by do. stout, do.	,, 4s. 6d
,, 1 B,	10½ feet by 3 inches, thin, for leg,	,, 5s. 6d
,, 1 A,	do. by do. stout, do.	,, 7s. 6d.
,, 8	14 feet by 3 inches, thin, for leg to above knee,	,, 7s. 6d.
,, 7	do. by do. stout, do.	,, 9s. 6d.
,, 9 B,	21 feet by 3 inches, thin, for leg and thigh,	,, 10s. 6d.
,, 9 A,	do. by do. stout, do.	,, 13s. 6d.

CAUTION.—Please order the *Genuine* Martin's Bandages, each being stamped with Dr. Henry A. Martin's signature.

Henry A. Martin

All others are spurious imitations.

Complete Price List, also Dr. H. A. Martin's Pamphlet describing Methods of Treatment, post free on application to the Sole Agents—

KROHNE & SESEMANN, Surgical Instrument Makers.
37, DUKE STREET, MANCHESTER SQUARE, W.

BRASS NAME PLATES
AND LAMPS

Specially adapted for **THE PROFESSION.**

The Name Plates manufactured in Stout Metal, Deeply Engraved, Mounted on Polished Mahogany Blocks with Fastenings ready for fixing, from 10/6 each.

J. W. COOKE & CO.,

PRACTICAL BRASS PLATE ENGRAVERS. MEMORIAL BRASSES

75, FINSBURY PAVEMENT, LONDON, E.C.

SEND FOR NEW ILLUSTRATED LIST.

Telephone 578 London Wall.

Your calls at a glance

That is the object aimed at and achieved in the design of

GOODMAN'S
COMBINED VISITING LIST & LEDGER.

This is a book specially prepared for the Medical Profession—at every opening it reveals a month's complete record of your calls, and the task of entry is made so simple as to necessitate a minimum of time and trouble on its fulfilment.

Let us send you specimen page.

J. GOODMAN & SONS, Account Book Specialists,
7, Castle Street, BIRMINGHAM.

"ZO" ADHESIVE PLASTER

represents the greatest progressive step in the Art of Plaster making. In its preparation only the finest Para rubber is used, and all foreign substances are removed in process of manufacture. These factors determine not only the adhesiveness and efficiency of the plaster as a Surgical Appliance, but its quality as an article of trade.

In modern surgery "ZO" ADHESIVE PLASTER finds many uses, and on account of its cleanliness, convenience, and freedom from irritating qualities, has been pronounced by all who have tried it to be the most suitable of all Adhesive Plasters for General Surgical Purposes.

TRADE "ZO" MARK.

"ZO" ADHESIVE PLASTER is packed in—

Cylinders, 7″ × 1 yard.
,, 7″ × 5 yards.
,, 12″ × 5 ,,

On Spools ½″, 1″, and 1½″ × 2½ yards.
,, ½″, 1″, 1½″, 2″, 2½″, 3″ × 5 yards.
,, ¼″, ½″, ¾″, 1″, 1½″, 2″, 2½″, 3″, 4″ × 10 yards.

On Moleskin, 6″ × 1 yard and 5 yards.

Prepared only by JOHNSON & JOHNSON.

FREE SAMPLES and particulars will be sent on application to—

JOHN TIMPSON & CO., Ltd. *(Sole Agents),*
104 & 106, Golden Lane, London, E.C.

Telegrams—"POROUS," LONDON.
Telephone—LONDON WALL 8815.

ZYMOTIC DISEASES.

HOGG'S IMPROVED STEAM VAPORISERS (Registered).

The most simple and Effectual Apparatus for the Diffusion of Antiseptics. Price 2/6, post free 2/9.

R. HOGG & SON, 1, Southwick Street, Hyde Park, W.

"GAMGEE TISSUE"

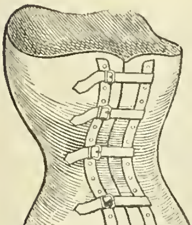
(Absorbent Gauze and Cotton Tissue).

Sole Proprietors and Manufacturers,

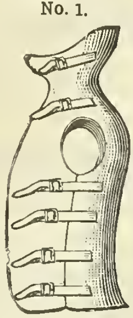
ROBINSON & SONS, Limited.
Chesterfield.

COCKING'S ADAPTABLE PORO-PLASTIC JACKETS AND SPLINTS.

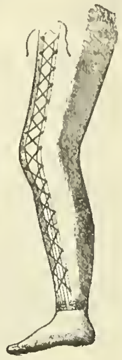
JACKET.



CERVICAL JACKET. No. 1.



LEG SPLINT.



For all Diseases of the Knee or Fracture.

Made with soft front, or with hinge at back, as required.

INSTRUCTIONS FOR MEASUREMENT.

JACKET.
Circumference at axilla.
,, waist.
Circumference at hips. Length from axilla to great trochanter.
In severe angular cases, circumference over apex of curve, position of same, and contour should be given; in lateral cases, a description of the case. In all cases it should be stated if for male or female.

CERVICAL JACKETS. Same measurements required, and circumference at neck, and length from neck to axilla.
Any part of the jacket can in the process of manufacture be made soft.

LEG SPLINT.
Circumference at top of thigh.
,, above knee.
,, at knee.
,, below knee.
Circumference at calf.
,, ankle.
Length splint is required.

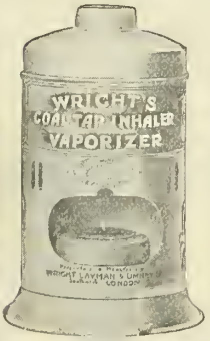
State if for right or left leg. When the foot part is required, also circumference at heel and instep, and length from centre of knee to ground. If the limb is contracted the contour should be given.

JACKETS, SPLINTS (in various forms) and PORO-PLASTIC in SHEETS may be had of our Agents.

PATENTEE & SOLE MANUFACTURER— **J. T. COCKING, PLYMOUTH.**

WRIGHT'S
COAL TAR
INHALER & VAPORIZER

For Whooping Cough, Croup, Bronchitis, Influenza, and all complaints of the Respiratory Tract.



The "Lancet" says:

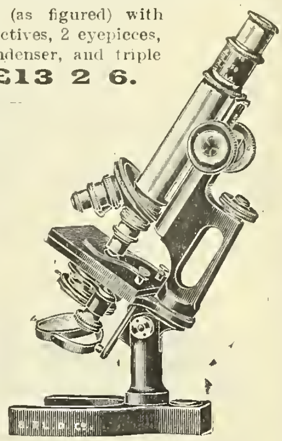
"This is a simple and effective device for obtaining the steady vaporization of antiseptic tar vapour or eucalyptus or pine oils for inhalation purposes. The source of heat is an ordinary night light. Above this light is placed a hollow absorbent block which is saturated with the antiseptic oil before the night-light is lighted. The method is satisfactory; the apparatus occupies a conveniently small space and gives off a stream of antiseptic vapour, the output of which can be readily regulated."

WRIGHT, LAYMAN & UMNEY, LTD.,
Proprietors of Wright's Coal Tar Soap,
48, SOUTHWARK ST., LONDON S.E.

Retail Price, complete with supply of vaporizing Liquid and 2 Absorbent Blocks, **3s. 6d.** each. The Vaporizing Liquid, **9d.** per bottle. Absorbent Blocks (one block lasts about 12 months) in tin box, **4d.** each.

BAUSCH & LOMB'S
CELEBRATED MICROSCOPES

NEW and IMPROVED MODELS for MEDICAL SCHOOL, HOSPITAL and LABORATORY WORK.



B H 8 LABORATORY MODEL (as figured) with $\frac{2}{3}''$, $\frac{1}{6}''$, and $\frac{1}{12}''$ oil immersion objectives, 2 eyepieces, screw-out substage, with Abbe condenser, and triple dust-proof nosepiece, in cabinet, **£13 2 6.**

B B H 8, LARGER LABORATORY MODEL, as above, but with screw-out *and* swing-down substage, **£18 4 6.**

B H 2 MODEL, with $\frac{2}{3}''$ and $\frac{1}{6}''$ objectives, 1 eyepiece, and circular dust-proof nosepiece, **£5 6 9**

— Also —

Microtomes, Centrifuges, Photo-micrographic and Projection Apparatus, Precision Laboratory Glassware, &c.

TRADE MARK.

THE BAUSCH & LOMB OPTICAL CO.,
Contractors to British and Foreign Governments,
19, Thavies Inn, Holborn Circus,
London, E.C.

The "AYMARD"
Patent Milk Sterilizer

Household Pattern.

SOME OF ITS ADVANTAGES:—

1. The product is in the strict sense of the words a sterilized milk, both pathogenic and non-pathogenic organisms being destroyed at the temperature employed.
2. There is no separation of fat, sterilization being accomplished by the action of moist steam passing over the surface of the milk and round the milk chamber; evaporation is therefore reduced to a minimum and the product is not "condensed" but ready for instant use.
3. Milk sterilized by the AYMARD process is easily digested, requiring two hours; although the lactalbumin is coagulated by the temperature employed its digestibility is unaffected and an important change is produced in the Caseinogen, which results in the formation of a very fine Casein clot on the addition of Rennet, very readily acted on by gastric juice. When sterilized milk is used in infant and invalid feeding there is therefore an absence of any gastric irritation such as is produced by uncooked milk.

Institution Pattern.

IS THE BEST AND MOST SIMPLE.

Prices and particulars of all Wholesale Surgical Instrument Makers, Chemists, and Ironmongers Wholesale Houses.

THE "AYMARD" PATENT MILK STERILIZER CO.,
IPSWICH.

DUNLOP

HOT WATER BOTTLES.

HOSPITAL SHEETING, JACONETTES, BED SHEETING, G.P. TISSUES, &c., and

GENERAL RUBBER GOODS

Supplied to HOSPITALS, INFIRMARIES, and ASYLUMS all over the United Kingdom.

DUNLOP RUBBER CO., LTD., Manor Mills, Aston, Birmingham.

The fashion of paying extravagant prices has gone, and to-day it is not pounds that make the perfect car.

ARGYLL CARS

are subjected to the most stringent tests before leaving the Argyll Works. The user has only one profit to pay, and that ARGYLL products are *cheap* in the true sense of the word is borne out by the fact that they consistently give the best of service at minimum cost.

10, 12/14, 15, 14/16, 20 & 30 H.P. Models. 2, 4 & 6 Cylinders. From **£250** to **£525.**

CATALOGUE NO. 19 POST FREE.

ARGYLLS, Ltd. **Works: ALEXANDRIA-by-Glasgow.**

GLASGOW DEPOT—92-94, Mitchell Street. LONDON—6, Great Marlborough Street, W.

THE REAL FACTS

about Challenge Reinforced Tubes are contained in an illustrated leaflet which may be had post free on application.

HARVEY FROST & CO., Ltd.,
27, Charing Cross Road, W.C.

Coachmen's, Grooms', & Chauffeurs' LIVERIES.—Large stock, top coats, summer coats, waistcoats, all colours; white doeskin cloth breeches, leather breeches, cloth and leather gaiters and leggings, top boots, hats and gloves in first-class condition. Lot of new liveries never worn. Macintoshes, carriage aprons. Best cloths; best West End of London make. Cheap. On approval. Send for Price List.—ARMSTRONG, 33, Connaught-street, Marble Arch, Hyde Park, W. Telephone: 1999 Paddington.

ST. JOHN AMBULANCE ASSOCIATION.

INVALID TRANSPORT SERVICE.

(under the patronage of many leading physicians and surgeons), for the conveyance of sick and injured patients (infectious cases excepted) to and from all parts. The Association has a fully-trained Staff and all necessary appliances.—For particulars apply to the Transport Manager, St. John's Gate, Clerkenwell, E.C. Telegrams: First-aid, London. Telephone: 861 Holborn.

"MOST VALUABLE FOR FLAT-FOOT."

IMPROVED INSTEP ARCH SOCK

(HOLLAND'S PATENT).

The Sock is worn inside the Boot. A tracing of the foot is the best guide for size

Gents., **7/6** per pair. Ladies, **6/6** per pair. **4/-** single. Small size Children's, **5/6** and **4/6.**

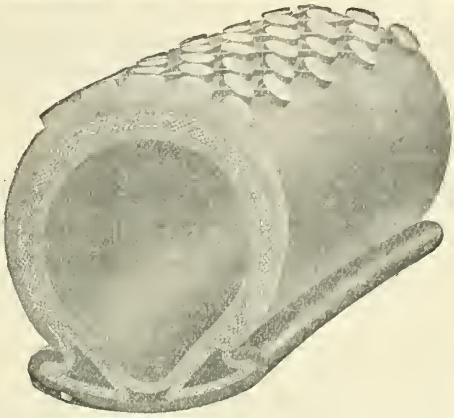
NATURAL-SHAPED BOOTS. English hand-made.

Oak-bark tanned leather. Neat-looking, strong, light in weight. Will wear well. For Gentlemen, Ladies, and Children.

INEXPENSIVE AND NOT UGLY.

HOLLAND, 46, South Audley Street, London, W. Telephone: Mayfair 1687. *Nearest Tube, Down Street.*

—ABOUT "GOODRICH" RUBBER—



This is different from that used on other tyre treads.

A little softer, a little tougher, a little finer and closer in the grain.

Consequently it cuts less readily and wears more evenly than most.

It is also a little faster and less susceptible to punctures.

Probably this is due to the fact that it is moulded into its "working" shape. All these little differences contribute their share to a higher average mileage and a lower average cost.

For confirmation—ask the road about

GOODRICH TYRES

MANUFACTURED BY THE B. F. GOODRICH CO., LD., 7, SNOW HILL, LONDON, E.C.

FORD CARS

A RELIABLE & ECONOMICAL CAR FOR DOCTORS

2-seaters, 15 h.p. 4-cylinder, including Dunlop tyres and lamps - - - - - £135

(A FEW ONLY NOW READY FOR DELIVERY.)

Also

20 h.p. 4-seaters and 15 h.p. 4-seaters.

DEFERRED PAYMENTS IF REQUIRED.

PERRY THORNTON'S,
Westminster Bridge Garage,
S.E.

The Medical Man's

is indeed the Strenuous Life and its attendant worries can be considerably alleviated if the Motor Car used for the daily rounds saves time, expense and anxiety.

¶ The Car which eminently fulfils these requirements is the 8 h.p. 2 cyl. or the 12 h.p. 4 cyl. Adler, pronounced to be the most Reliable and Durable ¶ Car extant, delightfully smooth and silent in running, extremely light on tyres and economical, easy to handle.

¶ Fitted with the celebrated "Morgan" Coachwork—noted for Comfort, Compactness and thoroughness of construction, the Adler is the Perfect Car for ¶ the Professional Man. Price from £210.

Sole Agents for the Adler Cars:

MORGAN & CO., LTD.,
Motor Body Specialists
and Carriage Builders,
127, LONG ACRE, W.C. and
10, OLD BOND STREET, W.

Adler Cars

Wet—Fine—Warm—or Cold Days

make no difference when the Topcoat is

WOVEN AND PROOFED BY BURBERRYS

and therefore reliable against every vicissitude of weather and variation of temperature.

BURBERRY possesses distinct advantages that make it of ineffable value for those whose profession or pleasure takes them out of doors.

PROOF AGAINST RAIN

Rendered antipathetic to all forms of moisture and immune from even surface absorption by Burberry treatment.

VENTILATES NATURALLY

The textural interstices are unobstructed and as free as in unproofed attire.

BARRIER TO WIND

Close weaving prevents cold winds from finding entrance, and utilises the natural warmth of the body without confining it.

LIGHT-WEIGHT

Fine threads make light cloths, and from these are made

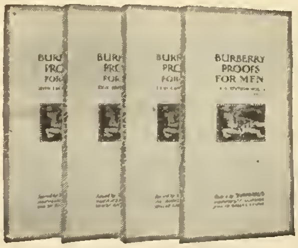
AIRYLIGHT BURBERRYS.

THE URBITOR BURBERRY

A warm, practically weightless, weatherproof top-coat; smart and dignified for Town and Professional wear.

BURBERRY-PROOFS

XVIII. Edition.



- Vol. I. Tweeds and coatings for men.
- Vol. II. Gabardine for men.
- Vol. III. Tweeds and coatings for ladies.
- Vol. IV. Gabardine for ladies.

Illustrated, priced and patterned; sent on request.

URBITOR BURBERRY

BURBERRYS, BASINGSTOKE, treat all Doctors' Commissions as "approval," i.e., replace with their own cheque returned non-approved garment.

PLEASE NOTE.—These terms of approval do not apply to our agents or London Businesses, but only to BASINGSTOKE.

BURBERRYS, BASINGSTOKE

And 30 to 33, Haymarket, LONDON.

A New Corset Combining Hygienic Conditions with a Fashionable Appearance.

THE attention of Members of the Medical Profession is particularly directed to the New Corset, produced by Mr. EUGEN SANDOW, and known as SANDOW'S PATENT HEALTH and PERFECT FIGURE CORSET, and their inspection of the same is cordially invited. It is a garment which eliminates all the objectionable features embodied in the ordinary corset, which are so harmful to the wearer's health, and at the same time ensures absolute freedom of the internal organs, so that they perform their functions in a perfectly natural manner. It is the acme of comfort to wear, while allowing of a perfect figure as established by the dictates of fashion.

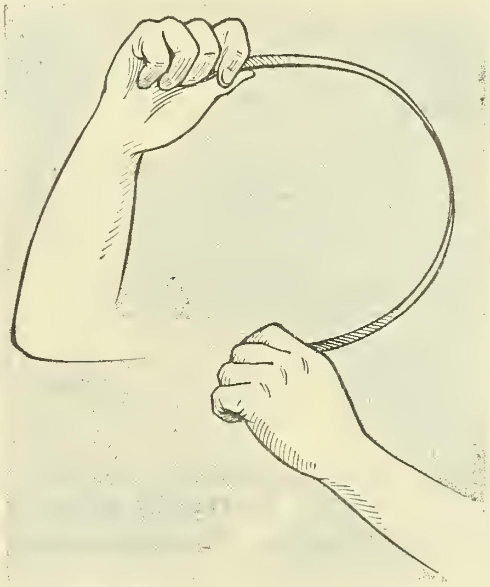
For this reason it cannot fail to arouse the greatest interest amongst Medical Men who, in criticising a Corset, will undoubtedly ask themselves the following questions:—

1. Does it compress the thoracic alæ and cause improper pressures on the liver, the heart, the spleen, and the bases of the lungs?
2. Does it drive in the epigastrium, and prevent the expansion and proper working of the stomach, during the act of eating and processes of digestion?
3. Does it unduly constrict the flanks and abdomen, and injuriously affect the kidneys and intestines?
4. Does the wearing of the Corset cause a *downward* pressure to be exerted upon the pelvic organs, thus assisting a tendency to Uterine displacement or prolapse?
5. Does it prevent freedom of movement?
6. During stooping or lateral contortions of the body, do the bones directly impinge upon the abdominal viscera?

To all these questions, when relating to Sandow's Corset, the answer is emphatically "No." In designing Sandow's Corset every effort was made to overcome all these medical objections. The chief and practically the only "grip" is upon the pelvis, just below the level of the iliac crest, the upper part of the Corset merely having the effect of "gloving" the figure below the waist, without undue constriction. The cut of the garment above the waist tends to lift it from the body rather than towards it, thus guarding the epigastrium and lower ribs from weight or pressure, and relieving the abdominal contents from the usual downward pressure exerted by the ordinary corset, and preventing the aggravation of uterine displacement or prolapse, when there is a weakness in this direction. In short, the Corset supports and lifts up the abdomen, a matter of great consideration when this part is at all pendulous.

The above important results are largely obtained by the remarkable and unique patented method adopted in "boning" the Corset.

THE PATENT BONING OF SANDOW'S CORSET.



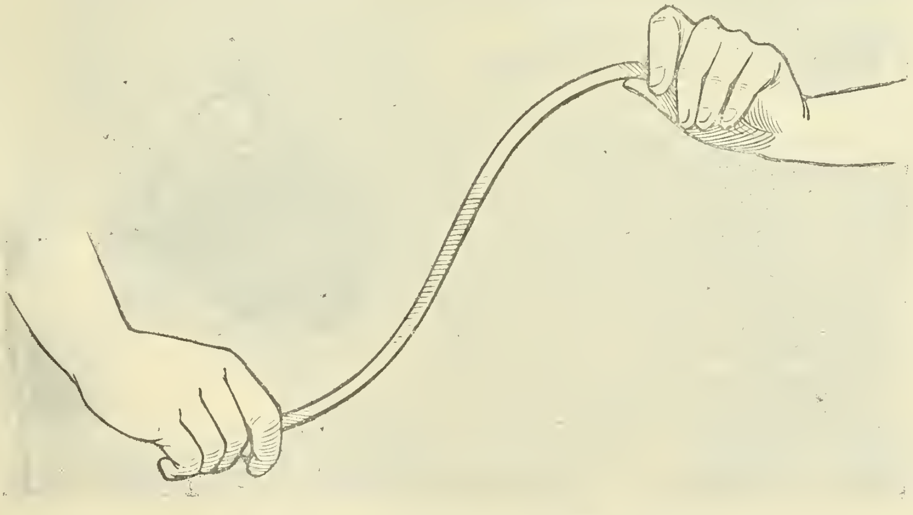
HOW THE BONE BENDS IN AN ORDINARY CORSET.

A glance at the illustrations on this page will disclose the principle to the reader. The bones are placed obliquely, radiating downwards and outwards from the centre on each side. This method secures two important objects—viz., (1) It prevents the bones easily breaking, as so often happens under the ordinary method of boning when the body assumes an extremely bent posture; and (2) it obviates a directly inward pressure when the wearer stoops or bends her body in any other way.

The reader can illustrate both these points if he will take a flat flexible rib of metal or bone, holding it at each end firmly with his fingers in a perpendicular position, and bending it sharply towards him. He will note that the curve of the rib is directly towards him and if it had been close against his body the convexity would have pressed sharply against his flesh. That is what happens in the corset boned in the ordinary way.

Now let him hold the rib obliquely as shown in the cut and repeat the movement, taking care to grip the top and bottom ends firmly, so that the rib does not twist in the fingers. The result is a screw-like torsion of the rib, with very little convexity presented directly backwards.

This method of boning will then be recognised by the experimenter to be a great advancement upon the old method, giving great suppleness to the figure without exerting undue pressure upon the soft parts and minimising the risk of fracture of the bones of the Corset.



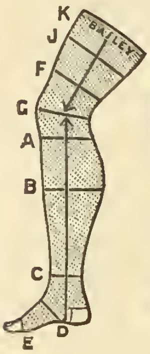
THE CURVE OF THE BONE IN SANDOW'S PATENT CORSET.

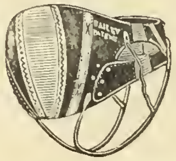
SANDOW'S CORSET COMPANY, 32, ST. JAMES' STREET, LONDON, S.W., will have great pleasure in supplying a pair of corsets to measurement for the wife of any medical man at cost price, so that the Corset may be tried at a small cost and a practical demonstration afforded of the unique advantages of this Corset from a physiological standpoint, combined with all the beauty of line and general elegance that it is possible to impart to the female figure.

Medical men or the ladies of their family are invited to call at the Salons of Sandow's Corset Co. and personally inspect the various models, while those unable to pay a visit can secure an elegantly illustrated booklet of particulars and measurement form by writing for it to the above address, mentioning this announcement in THE LANCET.

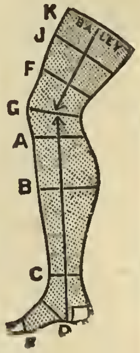
W. H. BAILEY & SON'S

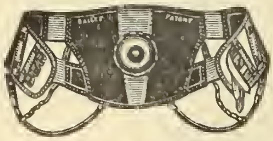
PATENT BELTS, TRUSSES, & ELASTIC STOCKINGS.



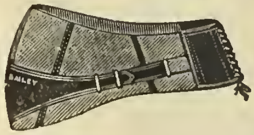


Bailey's Patent Belts for General Support, Obesity, Umbilical Hernia, Prolapsus Uteri, Appendicectomy, Colotomy, &c., &c.





CHEAP BELTS FOR HOSPITALS AT CONTRACT PRICES.



☞ IMPORTANT NOTICE.

MESSRS. W. H. BAILEY & SON are prepared to send (immediately on receipt of letter or telegram) thoroughly Competent Assistants, Male or Female, to attend patients at their homes, and to take Doctor's instructions. They personally superintend the making and fitting of the Appliance throughout, thus ensuring the best possible results.

Price Lists and Forms for Measurement free.

TRUSSES.
INGUINAL,
SCROTAL,
FEMORAL,
INDIARUBBER.

TRUSSES.
UMBILICAL,
PROLAPSUS,
MOC-MAIN,
"XYLONITE."

"NO GOOD RESULTS CAN BE OBTAINED FROM ANY TRUSS WHILE THE DAILY BATH IS TAKEN WITHOUT ONE."

38, OXFORD STREET, 2, RATHBONE PLACE, W.
52, FORE STREET, E.C.

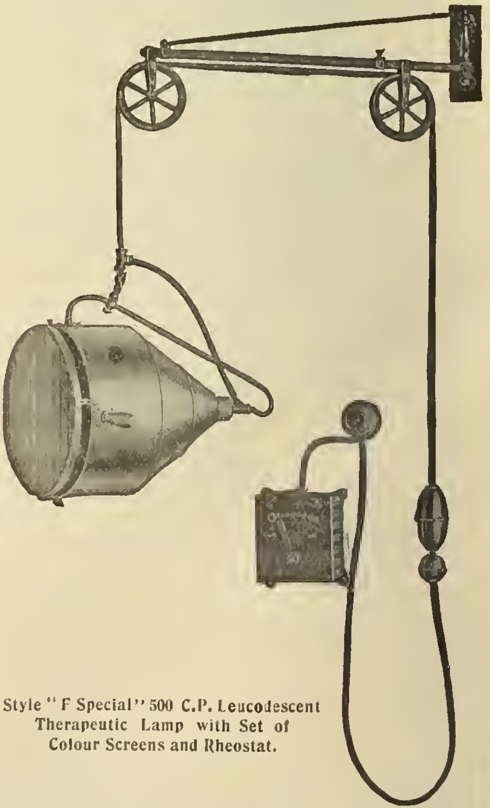
The Sun Never Sets on the

LEUCODESCENT

Therapeutic Lamp

¶ Its positive therapeutic value has carried it to every civilised country on the globe.

¶ Would you like two volumes of clinical reports on the Leucodescent? A postal will bring them. Also reprints, etc., which will prove a valuable addition to your literature on light therapy.



Style "F Special" 500 C.P. Leucodescent Therapeutic Lamp with Set of Colour Screens and Rheostat.

SPEAR-MARSHALL COMPANY,
Republic Building, Chicago, U.S.A.
London Representative—
A. E. DEAN, 82, Hatton Garden, London, E.C.

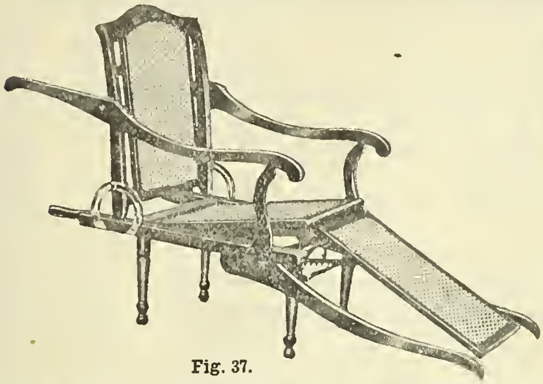


Fig. 37.

Carters

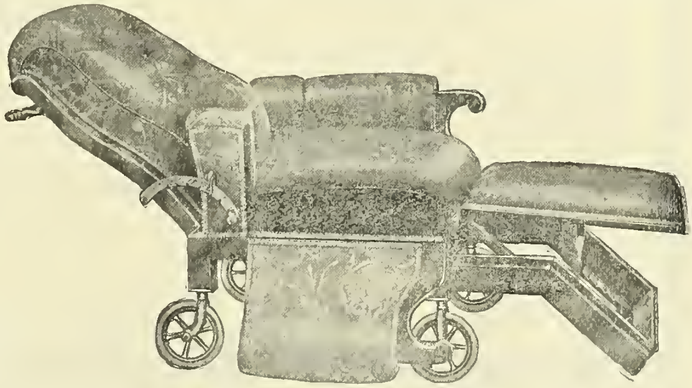
"The Alleviation of Human Pain."

Invalid and "Comfort" Furniture

of every Description.

Fig. 37, New Patent Carrying Chair, is fitted with adjustable back, seat, and leg rest, enabling patient to be carried in any position, even at full length. The advantages of this chair will be obvious to the Medical and Nursing Professions.

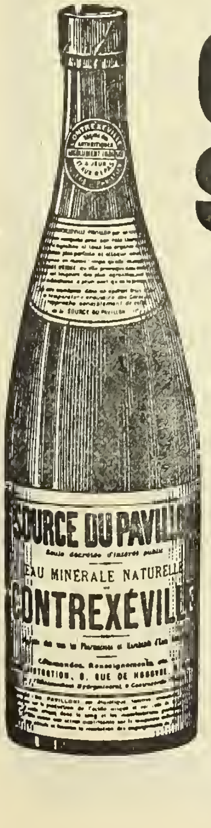
The "**Clevedon**" is a new form of Adjustable Reclining Chair, very softly upholstered, suitable for Ward use, and can be wheeled outdoors, the leg rest being clear of the ground. Converts at once into a couch or lounge chair. Arms drop down, leaving seat free of access.



The "Clevedon." (Regd. and Protected.)

Write for post free Catalogue
(600 Illustrations).

J. & A. CARTER,
2, 4 & 6, New Cavendish Street, and
125, 127, 129, Great Portland Street,
LONDON, W.



Regeneration by the Natural Mineral Water of

CONTREXÉVILLE (France)

SOURCE DU PAVILLON

FRANCO BRITISH EXHIBITION LONDON 1908

GRAND PRIZE

THE HIGHEST DISTINCTION

to any mineral water in the Vosges (France)

BEFORE AND AT MEALS

MOST EFFECTIVE in :

GOUT, GRAVEL, ARTHRITIS RHEUMATISM

Samples free to Members of the Medical Profession on application to INGRAM & ROYLE, East Paul's Wharf, 26 Upper Thames St., LONDON E.C.

MODERN THERAPEUTICAL AGENTS

VALYL-"HŒCHST"

VALUABLE **NERVE-TONIC** ACTING UPON THE VASOMOTORIC SYSTEM.

For Nervous Troubles of all kinds. Useful in TINNITUS. Antidysmenorrhoic and Sedative.

SABROMIN

Absolutely tasteless substitute for Bromine-Alkalies. Well tolerated. Antispasmodic and Sedative.

PEGNIN

Makes cow's milk easily digestible.

MIGRAININE

ANTINEURALGIC, ANALEPTIC, ANTIPYRETIC. Has proved an excellent remedy in severest cases of Migraine.

DIETHYL-BARBITURIC ACID "HOECHST"

SAFE and RELIABLE SOPORIFIC and HYPNOTIC.

THE MORE READILY SOLUBLE

SODIUM DIETHYLBARBITURATE

("Hoechst")

May also be administered per rectum or subcutaneously.

YOU CAN SAVE MONEY ON THE DRUGS A/C BY PRESCRIBING THESE PREPARATIONS.

For Samples, Literature, and copy of the "Compendium of Modern Therapeutical Agents"

APPLY TO

MEISTER, LUCIUS & BRÜNING LTD., 51, St. Mary Axe, London, E.C.

Nourry's Wine

(Iodinated.)

0.77 gr. of Iodine and 1.54 gr. of Tannin per tablespoonful.

THIS THOROUGHLY RELIABLE

and uniform preparation is prescribed by the most eminent British and Continental Physicians in cases of

LYMPHÆMIA. ANÆMIA. DYSMENORRHŒA. PULMONARY AFFECTIONS.

Children – One to two teaspoonfuls. Adults—One tablespoonful. To be taken at meals twice a day

Free from Alkaline Iodides. Palatable. Easily assimilated.
A perfect substitute for Cod Liver Oil and Iodides.

For Reports see "BRITISH MEDICAL JOURNAL," January 12th, 1895; August 29th, 1896; "LANCET," January 6th, 1894; March 30th, 1901, and various other medical publications.

NOURRY'S WINE is *NOT* advertised to the public.

Sample and literature sent free to Medical Men on application.

CACODYLATE OF SODIUM (CLIN)

(Organic Arsenic).

Emphatically recommended by Professors GAUTIER, RENAUT, LETULLE, &c., in the treatment of

TUBERCULOSIS (either incipient or declared), IMPALUDISM, DIABETES, DERMATOSES and CANCER.

DROPS.—5 drops contain ¼ grain of Pure Cacodylate of Sodium.

GLOBULES. — This special form consists of little Globules, easy to swallow, with a shell of gluten. Each Globule contains ¼ grain of Pure Cacodylate of Sodium.

TUBES (Sterilised for Hypodermic Injection).—Each Tube contains a sterilised solution dosed at 1 grain of Pure Cacodylate of Sodium per injection of 16 minims.

ENÉSOL

(Salicylarsinate of Mercury).

ITS GREAT ADVANTAGES.

(1) Excessively weak toxicity, so that elevated doses of mercury and arsenic can be administered without general phenomena of intolerance.

(2) **ENÉSOL is *NOT*** painful in injections, is well supported even in large doses, and it never causes nodes.

(3) The therapeutic activity of **ENÉSOL** is comparable to that of the best soluble mercurial salts.

1 gr. of ENÉSOL per Tube of 2 c.c.
Sold only in boxes of 10 Tubes.

F. COMAR and Son, 64, Holborn Viaduct, London. E. C.

M. I. 36

Emulsio Petrolei Phosph. "TIPPEE"

(BASH & CO., 35 & 36, Foley Street, London, W.)

[Telephone 9335 GERRARD.

Petroleum as a Therapeutic Agent is not generally understood. But where it is thoroughly tested, it will give universal satisfaction to the most ardent advocates of Cod Liver Oil, being an efficient substitute, and having the advantage of increasing bodily weight without destroying the appetite. It is not claimed that petroleum is a food. It is not claimed that it is absorbed or assimilated. It is probably not a tonic nor yet a stimulant. It is not analgesic. It is not affected by the secretions of the intestinal organs. Neither acid nor alkali can act upon it chemically or destroy its identity. It passes through the entire length of the digestive tract unchanged. The ingested oil may all be collected from the fæces. Neither bacteria nor bacilli of whatever species can propagate or exist in pernicious activity in its presence.

It is therefore a complete intestinal antiseptic, disinfectant, and antiferment, while it is as harmless as water. In cases of intestinal tuberculosis, and in some forms of digestive disorder, so common in consumptives, the use of petroleum will be found of great service. It is as acceptable to the human stomach as would be so much milk or pure water to the stomach of a healthy child. And in combination with malt, iron, lime salts, glycerophosphates, and free iodine, it is of undoubted Therapeutic value.

The preparation **Emulsio Petrolei Phosph. "TIPPEE"** is so compounded as to make a homogeneous and compatible, pleasant and effective Emulsion, which children will take as readily as they would a delicious confection. The use of this Emulsion very materially assists assimilation. Gynecologists will find the Emulsion most useful in their practice.

Literary matter supplied to Physicians on application.

Can be obtained from all Chemists or direct from BASH & CO.

Price 2s. 6d. per Bottle.

Infant Feeding

Some Opinions of Medical Men

Many Medical Men are bringing up their own children on Savory & Moore's Food, which is sufficient indication of their confidence in its merits. Their views on the subject may be gathered from the letters printed below.

"Having found it necessary to use 'mixed feeding' for my daughter, I at first tried another well-known food, which did not suit at all. I then tried your sample and found it suited the little one admirably. She has gained in weight on an average nearly ½lb. per week since its use.

"I also found it excellent for the mother, her milk being greatly improved in quantity and quality since taking the Food.

"I shall have great pleasure in ordering your Food in future to my patients.

"——, M.R.C.S., L.R.C P."

"I have much pleasure in informing you that we have used your Food for our little daughter since she was a week old. She is now eight weeks old, and is the picture of a healthy, well-nourished, and thriving child.

"I may say that for years I have extensively recommended your Infant's Food in my practice with every satisfaction.

"——, M.D."

"I am pleased to say that I formed a very favourable opinion of the usefulness of your Infant's Food, and am heartily recommending it.

"I think there is no food that I advise with more confidence, though my acquaintance with it has not been so prolonged as in the case of some other foods.

"——, M.R.C.S."

SAMPLE ON APPLICATION

A Sample Tin of Savory & Moore's Food, sufficient for a thorough trial, will gladly be sent to Members of the Medical Profession on request. Address: Savory & Moore, Ltd., Chemists to The King, 143, New Bond Street, London.

SAVORY & MOORE'S BEST FOOD

FOR INFANTS

FOR UPWARDS OF FORTY YEARS THE USE OF

Fellows' Syrup of Hypophosphites

HAS BEEN RECOMMENDED BY

The Leading Medical Specialists in all Countries

Reject < Worthless Substitutes
Preparations "Just as Good"

Schering's

UROTROPIN

The most Efficient Urinary Antiseptic.

Highly recommended in **PYELONEPHRITIS, PYELITIS, URETHRITIS,** Acute and Chronic **CYSTITIS,** and in all diseases of the Urinary Tract, also as a prophylactic in **SCARLATINA NEPHRITIS,** and in diseases commonly attended by **Kidney Complications.** Of great value as a Preventive against the spread of Typhoid Fever.

For Sample and Full Literature, apply to

A & M. Zimmermann, 3, Lloyd's Avenue,
London, E.C.

GLIDINE.

4.—In Medical Practice.

From the three previous articles which have appeared it will be known that GLIDINE is a pure wheat proteid, in no sense inferior to proteins of animal origin but in all essential particulars greatly superior. We now give its full analysis:—

Albumen	95.69 %
Lecithin	.87 %
Carbohydrates	2.72 %
Ash	.72 %
	100 00

Risking the charge of reiteration, we will again point out the important salient features of Glidine. It is purely vegetable proteid from which nearly all native carbohydrates have been removed; free from purin and nuclein bodies; rich in stable Lecithin which carries living organic phosphorus. Glidine is not analogous to the poly-pharmacal product, as are many so called "tonic" and nutrient foods; these being invariably artificially loaded with added phosphoric and other matter. Glidine is natural and simple.

Glidine is indicated in all cases where a reliable source of nutrition is of primary importance. It enables the physician to administer the highest food value in the smallest bulk and so to build up the patient's strength without fatiguing the stomach. In connection with this, the absence of coagulated albumen in protein substance is important—and we have already pointed out that the albumen in Glidine is uncoagulated.

When we consider that in all pathological conditions substances absolutely indispensable to the body are lost, and that a normal diet often becomes useless or impossible, then the use of some absorbable proteid becomes imperative.

The question naturally arises as to which is the most suitable form of protein to constitute a food-base—one which may be administered for any length of time without causing any secondary ill-effects. Abundant clinical trial places Glidine at the head of all food-bases, and has proved its great and peculiar value in materially aiding the absorption of large quantities of fat.

Glidine should be given in small quantities over an extended period, rather than in large quantities for a short time. The nutritive effects are more marked when Glidine is taken in this way. Owing to its compatibility with all ordinary edible and potable substances, Glidine may be administered with any food or drink best adapted to the taste and stomach of the patient. A matter pleasing to physician and patient alike is the absence of both odour and taste in Glidine: much difficulty being thus avoided.

It is the testimony of very many eminent practitioners, both English and Continental, that Glidine has proved of signal service and value in the treatment of Tuberculosis, Mal-nutrition, Diabetes, Neurasthenia, Anæmia, Gastric Ulcer, Gout, Arthritis, Arterio-Sclerosis, and Insomnia.

To the investigating mind nothing equals in value experiment, carried out under personal observation. The testimony of others is, rightly, not regarded as convincing; but sometimes a remark emanating from a satisfactory source is of peculiar significance—such as, "Glidine is by far the finest preparation I have ever tried," and "I consider Glidine a most scientific preparation as well as a valuable and sustaining addition to most ordinary forms of diet"; again, "Glidine possesses all the properties you claim for it." These expressions are the result of deliberate and definite clinical tests, and refer—*inter alia*—to cases of Typhoid Fever, Phthisis, Tubercular Peritonitis, Diabetes Mellitus, and Atony of the Stomach.

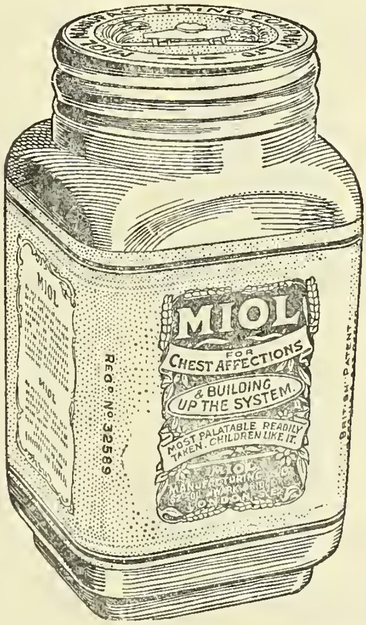
The proprietors of Glidine will welcome any enquiry from members of the Medical Profession, and will gladly place at their disposal samples for trial, also interesting clinical evidence respecting Glidine and its non-toxic combinations with Iodine, Bromine, Mercury, Arsenic, and Iron, which are named respectively IODOGLIDINE, BROMOGLIDINE, LUESAN, ARSAN, and FERRO-GLIDINE.

MENLEY & JAMES, Limited,
Menley House, Farringdon Road, London, E.C.

MIOL

and its effect on GASTRIC SECRETIONS.

The part played by the gastric mucus is that of protecting the walls of the stomach against the attack of Gastric Juice, and when the secretions are arrested the physician will find MIOL most beneficial, as it contains Cream Olive Oil, the best France can send us, in its most assimilable form.


MIOL
FOR CHEST AFFECTIONS & BUILDING UP THE SYSTEM.
MOST PALATABLE READILY TAKEN. CHILDREN LIKE IT.
REGD No 32589

MIOL treatment has the additional advantage of decreasing the acidity of the contents of the stomach.

M. CARRINGTON SYKES, Esq., M.D., F.R.C.S.E., D.P.H., &c., says in his report on MIOL:—

> **I know of no preparation which contains so many of the best heat, force, and plastic forming bodies. Having all these one can safely say that MIOL is an ideal preparation for so many of the diseases met with in large towns.**

Clinical reports and other interesting literature, with a one pound Free Sample, will be sent to any member of the profession applying to us,

THE MIOL MANUFACTURING CO., LTD.,
82, Southwark Bridge Road, S.E.

KUTNOW'S POWDER
FOR
LIVER TROUBLES
AND
CONSTIPATION

FREE!

TEST IT!

THERE ARE TIMES when even robust persons are subject to irregularities. Constipation is the worst form of the common ailments of life, and it is in this condition that blood-poisoning by absorption takes place. It gives rise to innumerable troubles, and is frequently the cause of diarrhœa, colic, dyspepsia, and appendicitis. It is not in the least remarkable that those who have formed the habit of taking Kutnow's Powder seem to be immune against these attacks, and the reason is not far to seek. The bowels are kept clear and regular, the liver acts with energy, the bile lubricates the intestines, and the kidneys are kept flushed. Its action is painless and always efficient. It is palatable and at the same time free from sugar. It cleanses the bowels and leaves no distressing after-effects. It has a salutary action on the liver, and is excellent in kidney trouble.

SAMPLES SENT

FREE AND POST-PAID

TO THE

MEDICAL PROFESSION

Fill in your Name and Address,
And send it to S. Kutnow & Co., Ltd.,
41, Farringdon Road, London, E.C.,
For Free Sample

Dr. ....
Address..
LANCET, 26/3/'10 ....

Props.: **S. KUTNOW & CO., LTD.,** 41, Farringdon Road, London, E.C.

Proprietors in U.S.A.: KUTNOW BROS., Ltd., 853, Broadway, New York City.

BENGER'S Preparations

OF THE NATURAL DIGESTIVE PRINCIPLES

Benger's Essence of Rennet

(CURDLING FLUID)

This is most strongly recommended for making delicious and wholesome Junket or Curds and Whey. The process is very simple. A pint of milk is warmed and a teaspoonful of the Essence added. In five minutes the dish is ready for use. A shilling bottle is sufficient to make 32 pints.

Dr. HENRY ASHBY, Physician to the Manchester General Hospital for Children, says in the "British Medical Journal" :—" Mr. BENGER has recently prepared an exceedingly active and reliable curdling fluid, which I have put to some crucial tests, and I believe it will be found very useful in preparing whey, and will supersede the use of Rennet, or any of the essences."

Benger's Pancreatised Lentil Flour

This flour is specially prepared for the use of children and invalids. It can be used in the same way as the well-known "Benger's Food" for which it may be substituted when a change of diet is thought desirable. Lentils form a highly nutritious food, being especially rich in nitrogenous material, and the method of preparation of this flour makes it easy of digestion.

Benger's Pepsine Pills

This represents the active principle of the Liquor Pepticus in the form of tasteless coated pills, and for those who prefer this form in place of the fluid, will be found equally convenient and effectual.

The "MEDICAL TIMES AND GAZETTE" says:—"The 'Liquor Pepticus (Benger)' is singularly free from all disagreeable smell or taste; is clear and bright; and is a remarkably active Fluid Pepsine. It is worthy of all praise as a skilled preparation, and its high value as a digestive agent has been well proved by large experience.'

TO BE OBTAINED FROM ALL LEADING CHEMISTS, ETC., OR OF

BENGER'S FOOD Ltd., Otter Works, Manchester

II

K.&O. DOUCHE FOR THE APPLICATION OF
GLYCO-THYMOLINE TO THE NASAL CAVITIES

GLYCO-THYMOLINE

IS USED FOR CATARRHAL CONDITIONS OF
MUCOUS MEMBRANE IN ANY PART OF THE BODY

**Nasal, Throat, Stomach, Intestinal
Rectal and Utero-Vaginal Catarrh**

KRESS & OWEN COMPANY - 210 Fulton Street, New York

SOLE AGENTS FOR GREAT BRITAIN, THOS. CHRISTY & CO., 4-10 & 12 OLD SWAN LANE, LONDON, E. C.

The *personal claims* of a manufacturer may be regarded as *partisan,* but when a manufacturer makes no claims for his product, contenting himself with presenting the consensus of opinion of thousands of physicians, his statements merit consideration and his product deserves investigation from those members of the profession who have not used it.

Clinical Results Prove Therapeutics

and clinical results, reported by thousands of successful practitioners, demonstrate that

ANASARCIN

(Oxydendron Arboreum, Sambucus Canadensis and Urginea Scilla)

Gives Relief in

VALVULAR HEART TROUBLE
ASCITES AND ANASARCA
EXOPHTHALMIC GOITRE
BRIGHT'S DISEASE
CIRRHOSIS OF THE LIVER

Use Anasarcin in any obstinate case and note results.

Trial quantity and literature on request, to physicians only.

THE ANASARCIN CHEMICAL CO., Winchester, Tenn.

SOLE BRITISH AGENTS:

THOMAS CHRISTY & CO.,

4, 10 & 12, Old Swan Lane, LONDON, E.C.

Trustworthy Serums

"P., D. & Co."

ANTIDIPHTHERIA SERUM

in bulbs containing from

1000 to 6000 Antitoxin Units

independently certified as to Purity, Asepticity and Potency by the Pathological Laboratory of the University of Cambridge.

"Standard" and "Special" Grades are supplied, differing only in the volume in which a given number of antitoxin units is presented.

For report of admirable results with "P., D. & Co." Antidiphtheria Serum, see *Lancet*, 29th Dec., 1902, p. 1685:—

"In some cases as much as 35,000 units were administered *intravenously* without untoward effect."

"P., D. & Co."

ANTISTREPTOCOCCUS SERUM (Polyvalent)

is obtained from the blood of horses immunised against

Puerperal Fever, Erysipelas, Scarlet Fever, Endocarditis, Pseudo-Diphtheria and other forms of Streptococcus Septicæmia.

In bulbs containing 10 c.c.

For report on the great value of "P., D. & Co." Antistreptococcus Serum (Polyvalent), see *British Medical Journal*, 15th December, 1906, p. 1710:—

"I am convinced that without the Serum both patients would have died."

This serum is tested in the Pathological Laboratory of the University of Cambridge and certified to be sterile and free from excess of antiseptic.

"P., D. & Co."

ANTITETANUS SERUM

in bulbs containing

1500 Antitetanus Units

of the standard adopted by the

U.S. Dept. of Public Health.

This amount constitutes one dose, the volume of which is about 10 c.c.

Each unit is capable of neutralising 1000 times the minimum lethal dose of tetanus toxin for a guinea-pig of 300 to 350 grammes weight.

See report on the effects of "P., D. & Co." Antitetanus Serum, *Lancet*, 8th April, 1905, p. 929:—

"Convulsions were well established before the Serum was injected. . . The man was working within a few weeks."

This serum is tested in the Pathological Laboratory of the University of Cambridge and certified to be sterile and free from excess of antiseptic.

These serums are prepared under the most rigid precautions by highly qualified bacteriologists in our own laboratories which are officially inspected and licensed.

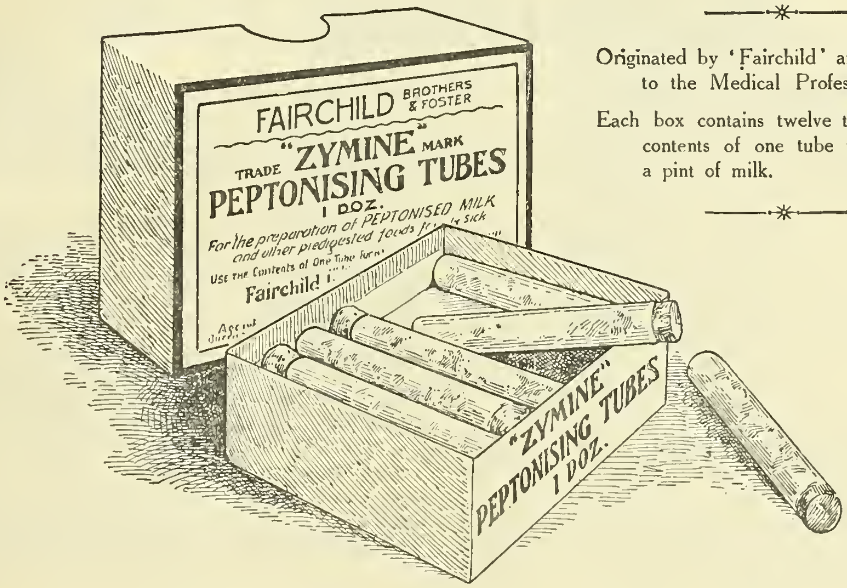
A Pamphlet entitled "Serum Therapeutics," containing an account of the preparation of these agents and references to their literature, will be sent on request.

PARKE, DAVIS & CO., LONDON, W.

Telegraphic and Cable Address: "Cascara, London." **Telephones: 8636 Gerrard: 9201 Central.**

'ZYMINE' PEPTONISING TUBES

For the Preparation of Peptonised Milk and other Predigested Food for the Sick.


FAIRCHILD BROTHERS & FOSTER
TRADE "ZYMINE" MARK
PEPTONISING TUBES
1 DOZ.
For the preparation of PEPTONISED MILK and other predigested foods for the Sick
Use the Contents of One Tube for
Fairchild
"ZYMINE" PEPTONISING TUBES 1 DOZ.

Originated by 'Fairchild' and introduced to the Medical Profession in 1882.

Each box contains twelve tubes, and the contents of one tube will peptonise a pint of milk.

The nutritive mainstay in all fevers is Peptonised Milk, prepared with 'Zymine' Peptonising Tubes. In typhoid fever especially, Peptonised Milk promises and proves to be the "ideal food."

Peptonised Milk prepared with 'Zymine' Peptonising Tubes is a perfectly digestible and absorbable food. Its use precludes all accumulation of unassimilable matter in the intestinal tract.

Practical recipes for preparing Peptonised Milk and other Peptonised Food will be sent upon application.

Supplied in boxes containing 1 dozen tubes, at 1s. 3d. per box.

Originated and Manufactured by

Fairchild Bros. & Foster,

NEW YORK.

Agents for Europe, Asia, Africa, and Australasia:

Burroughs Wellcome & Co.,

LONDON, SYDNEY, CAPE TOWN.

The Exact

Equivalent of Human Milk

is formed by adding to diluted & sweetened Cow's Milk

Albulactin

(Pure Soluble Lactalbumin).

The aim of every physician confronted with the problem of the artificial feeding of infants has been to secure a food as nearly identical as possible with human milk.

"Recent researches on milk albumin," writes Professor Dr. P. Bergell of Berlin University, "have yielded some new facts which have an important bearing on the practical feeding of infants.

"It used to be thought that the proteid in milk was one uniform chemical substance, but we now know that both human milk and cow's milk contain two different proteids: viz., Casein and an Albumin. Human milk contains a large amount of this Albumin, cow's milk contains but little."

This is vividly shown in Bergell's analysis :—

	Casein.	Lactalbumin.
Human milk	.8%	.6%
Cow's milk	2.7 to 3.0%	.2 to .3%

In diluting the cow's milk to make the casein contents correct this deficiency of Lactalbumin is made still worse.

Its practical bearing is strikingly shown by Schlossmann, who said: "The breast-fed child of 2½ months old gets 1105 grammes of milk a day, containing 77 grains of Lactalbumin. The artificially-fed child gets 600 grammes of cow's milk with 600 grammes of water. In consequence of the deficiency of Lactalbumin in cow's milk it gets only 27 grains of Lactalbumin, and is thus starved of 50 grains daily of its most vital food."

"*Now, for the first time,*" *says Bergell,* "*this deficiency can be rectified, because the albumin in soluble form as it exists in natural milk can be obtained. This soluble albumin is called Albulactin.*"

The addition of Albulactin makes diluted cow's milk form exactly the same soft, fine, easily-absorbed curds, behave in *exactly the same way as human milk* and become, to all practical intents and purposes, human milk. For these reasons, it has been extensively employed at one of the chief children's hospitals in Berlin by **Professor Dr. J. Cassel,** who has obtained the following striking results with it:

(1). There was a great increase in weight in every case. Before taking Albulactin, the average increase of all cases treated was 102 grains a day. With Albulactin, the average gain was 182 grains a day.

(2). The food prepared with Albulactin was taken without difficulty.

(3). It was never attended by harmful results.

(4). It never caused vomiting, diarrhœa, or other digestive disturbance.

(5). The influence exerted on the digestion by the addition of Albulactin was always satisfactory.

(6). The addition of Albulactin to cow's milk affected the curds in the infant's stomach in the most remarkable way. While before the experiment the curds were thick and of various sizes, the stomach contents, afterwards, assumed a very different appearance, looking like numerous regular, little shreds, resembling small-grained oatmeal soup.

(7). Albulactin-fed infants always impressed the physicians by their healthier, fresher and more robust appearance, as well as by their muscular strength, when compared with other artificially fed children.

Free samples of Albulactin and Literature will be sent to all physicians writing for them to Messrs. A. WULFING & Co. (the manufacturers of Sanatogen), 12, Chenies Street, London, W.C.

THE · NUTRIENT · OF · PROVEN · VALUE

SANATOGEN.

A Soluble Chemical Compound of Sodium-Glycerophosphate and Casein.

INDICATIONS:

Neurasthenia,
Cardiac Neuroses,
Dyspepsia,
Gastric Ulcer,
Anæmia,
Phthisis,
Rickets, etc.

Samples and literature free to the medical profession on application to The Sanatogen Company, 12 Chenies Street, London, W.C.

THE · NERVE · TONIC · With · lasting · effect

Diphtheria Prophylaxis:—

A Medical Officer of Health writes in "The General Practitioner" (July 31st, '09):

"Since adopting Formamint as a prophylactic, I have had 17 cases of Diphtheria reported, two treated at home, and the remaining 15 sent to the Isolation Hospital. There were many contacts in connection with these cases who were all given Formamint for use daily, and not a single case has occurred amongst them.

"I commend this line of prophylactic treatment with the utmost confidence, as being painless and pleasant, non-toxic, provedly anti-bactericidal, and easily carried out."

A Medical Officer of Health writes in "The Practitioner" (Dec., '07):

"I have never had sore throat myself since I began to use Formamint Tablets, although I suffered periodically before, and I always recommend their use to the nurses in the Scarlet Fever wards."

N.B.—The numerous imitations of Formamint are mechanical mixtures only. Formamint Wulfing is a *new chemical compound*, and its dissolution in the mouth liberates nascent Formaldehyde, in which condition the drug exerts its most potent action. Free samples and literature to the medical profession on application to A. Wulfing & Co., 12, Chenies Street, London, W.C.

Formamint Wulfing

Cleanse the Blood and Keep it Circulating

Therein lies the essence of the successful treatment of pneumonia.

The Phagocytes are the scavengers of the blood, but unless the affected part receives the full amount of the normal flow with its opsonins, resisting power is lost. In pneumonia it is necessary to either increase the opsonic index of the blood, so that the small amount reaching the congested lungs may be of normal opsonic value, or dilate the vessels and let the blood freely circulate, carrying the phagocytes into the lungs.

Heat is the best dilator of the blood-vessels, and an antiseptic poultice is the best agent for conveying moist heat.

Antiphlogistine

(*Inflammation's Antidote*)

offers an ideal method for the application of moist heat. It will keep the blood circulating because of its action upon the sympathetic nervous system, which controls the circulation.

Schäffer, of Stuttgart, in his last treatise on the "Influence of Hot Air upon Inflammation," says: "Dry or wet hot compresses are more effective than hot air, as in Bier's method. Local warmth proved an excellent means of securing arterial dilatation and accelerated circulation."

Free Circulation + Perfect Elimination = Restoration to Normal

In Pneumonia, Antiphlogistine should be applied hot and thick over the thoracic walls (front, sides and back) and covered with a cotton-lined cheese cloth jacket.

Bronchitis, Pleurisy and Croup have a determined antagonist in Antiphlogistine. It must always be applied at least ⅛ in. thick, and as hot as can be borne comfortably.

THE DENVER CHEMICAL MFG. CO.,
LONDON

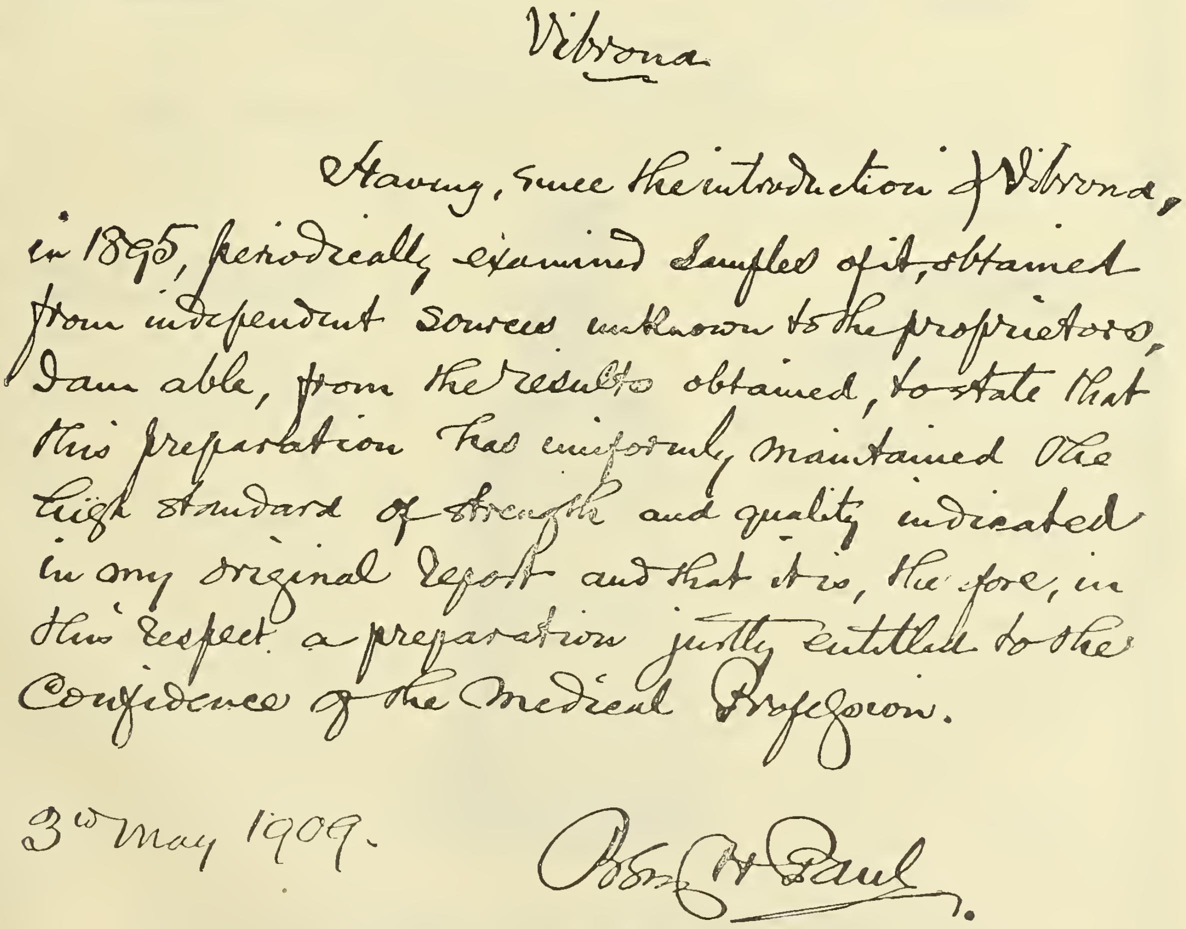
Vibrona

THE
Ideal Tonic Wine.

DERIVATION OF "VIBRONA."

VI —the first two letters of *Vitis Vinifera*.
BR —the first two letters of *Bromine*.
ONA—the last three letters of *Cinchona*.

Dr. B. H. PAUL, Ph.D., F.I.C., F.C.S., the eminent Quinologist, has periodically examined VIBRONA since its first introduction in 1895, and the following extract from his last REPORT, covering a period of no less than fourteen years, speaks for itself.—



Vibrona

Having, since the introduction of Vibrona, in 1895, periodically examined samples of it, obtained from independent sources unknown to the proprietors, I am able, from the results obtained, to state that this preparation has uniformly maintained the high standard of strength and quality indicated in my original Report and that it is, therefore, in this respect a preparation justly entitled to the Confidence of the Medical Profession.

3rd May 1909.

Benjn H Paul.

Vibrona THE IDEAL TONIC WINE is supplied by all first-class Chemists, Wine Merchants and Stores. Price in Great Britain 3/9. An original bottle may be obtained free of charge by any Member of the Medical Profession on application to the Sole Proprietors,

FLETCHER, FLETCHER & Co., Ld., Holloway, LONDON, N., and SYDNEY.

The Ideal Antiseptic and Disinfectant.

MEDICAL IZAL

Non-Poisonous. Non-Corrosive.

Does not coagulate Albumen. Does not Oxidize.
1 in 900 destroys the *Staph. Pyog. Aureus* in ten minutes.
Definite germicidal power guaranteed. The percentage of active material present is constant.
Does not cause Irritation.
Does not corrode Instruments or injure the operator's hands.

For

Puerperal Sepsis

"Out of 79 cases of Puerperal Sepsis treated by general means alone, with or without intra-uterine douches, 37 died—a mortality of 46 per cent. In 86 cases where the method of using Izal I have described was employed, the mortality was 23 per cent. only."

Journal of Obstetrics and Gynæcology. January, 1907.

Indicated in Eczema and Ringworm.

Izal.
Non-poisonous
Specially prepared for
Medical and Surgical
USE.
This MEDICAL IZAL, diluted with 600 parts of water, i.e. when of only half per cent. strength, has been certified by an eminent Bacteriologist to destroy the bacillus coli and the staphylococcus pyogenes aureus in 5 minutes.
SHAKE the BOTTLE.
Sole Manufacturers
NEWTON, CHAMBERS & Co.
LIMITED.
THORNCLIFFE,
near Sheffield.

For

Internal Use

Indicated in chronic dyspepsia, fœtid bronchitis, foul stomach, diarrhœa, dysentery and typhoid fever.

"In dysentery of the very worst as well as of the milder types, I have found this drug *facile princeps* the most reliable remedy, but I cannot too strongly insist on the fact that small doses are useless, and the drug must be pushed to doses of the kind recommended."

Indian Medical Gazette, October, 1904.

Verbatim Reports—Bacteriological, Pharmacological and Surgical—
and samples free to the profession.

Allen & Hanburys Ltd.
37, Lombard Street, LONDON.

Newton, Chambers & Co., Ltd.
THORNCLIFFE, near SHEFFIELD.

TRADE MARK.
A.D. 1715.

In Convalescence from Influenza.

"Byno" Hypophosphites

ONE of the most successful preparations for combating the depressing after effects of influenza is "BYNO" HYPOPHOSPHITES. It conserves and invigorates the nervous system, and at the same time it stimulates the appetite and aids digestion.

"BYNO" HYPOPHOSPHITES may be taken when the digestive organs are weakened and impaired, and when ordinary tonics cannot be tolerated.

COMPOSITION

CALCIUM HYPOPHOSPHITE	... ...	4 grs.
POTASSIUM "	... ...	2 "
SODIUM "	... ...	2 "
IRON "	... ...	$\frac{1}{2}$ "
MANGANESE "	... ...	$\frac{1}{2}$ "
CINCHONA ALKALOIDS	... ...	3 "
NUX VOMICA "	... equal to Strychnine	$\frac{1}{40}$ "
"BYNIN," LIQUID MALT	... ...	1 oz.

Dose—ʒ ij to ʒ iv in water.

"An excellent preparation."
—*The Lancet.*

"A valuable alimentary tonic."
—*The Medical Press and Circular.*

Samples sent free to Medical Men, on request.

ALLEN & HANBURYS Ltd.

37, LOMBARD STREET, LONDON.

UNITED STATES: Niagara Falls, New York.
CANADA: Gerrard Street East, Toronto.
AUSTRALASIA: Bridge and Loftus Streets, Sydney.
SOUTH AFRICA: Smith Street, Durban.

'Vaporole' Inhaler in use

TRADE MARK

'VAPOROLE' BRAND
AMMONIUM CHLORIDE INHALER

SIMPLE PORTABLE EFFICIENT

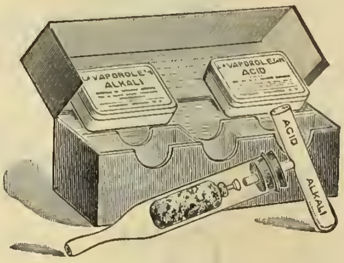
Instantly fitted together and easily charged.

Delivers copious volumes of fresh neutral vapour.

No waste, no clogging, and no complexity of tubes and bottles, as with the old-fashioned forms.

Supplied to the Medical Profession, at 5/- each

Refills of 'Vaporole' Acid and Alkali are supplied in tins of 12



'Vaporole' Inhaler Complete Outfit
Measurements: 6 × 2¼ × 2 in. (Closed)

BURROUGHS WELLCOME & CO., LONDON (ENG.)
H. 724 NEW YORK MONTREAL SYDNEY CAPE TOWN MILAN SHANGHAI COPYRIGHT

COMPOUND MENTHOL SNUFF
B. W. & Co.

ANTISEPTIC, STIMULANT AND LOCAL ANÆSTHETIC

In addition to the excellence of its formula, the purity of its ingredients and the uniformity of the finished product, it is packed with characteristic care and elegance.

Actual size

It is protected against evaporation and deterioration by being enclosed in an inner container, and is issued in black and gold enamelled metal boxes, as illustrated.

Supplied to the Medical Profession, in boxes, at 6d. each.

BURROUGHS WELLCOME & CO., LONDON (ENG.),
NEW YORK MONTREAL SYDNEY CAPE TOWN MILAN SHANGHAI
H 725 COPYRIGHT

TRADE MARK 'Tabloid' BRAND Arylarsonates

Facilitate Treatment of Syphilis, etc.

The important arylarsonates 'SOAMIN' and 'ORSUDAN' are issued as 'TABLOID' products.

Each product presents an accurate quantity, and retains the characteristic solubility of the salt.

The gr. 5 and 0·3 gm. products are especially convenient for the preparation of fresh solutions for intramuscular injection.

The gr. 1 product, dissolved in water, lends itself to oral administration. *(See directions.)*

'TABLOID'

TRADE 'SOAMIN' MARK

(Sodium Para-aminophenylarsonate)

'Tabloid' 'Soamin' is supplied to the Medical Profession: gr. 1, in bottles of 100, at 2/4 per bottle; gr. 5 and 0·3 gm., in bottles of 25, at 2/6 per bottle.

'TABLOID'

TRADE 'ORSUDAN' MARK

(Sodium 3-Methyl-4-acetylaminophenylarsonate)

'Tabloid' 'Orsudan' is supplied to the Medical Profession: gr. 1, in bottles of 100, at 3/6 per bottle; gr. 5 and 0·3 gm., in bottles of 25, at 4/2 per bottle.

OF ALL CHEMISTS

Special booklet, "Arylarsonates," sent post free on request

BURROUGHS WELLCOME & CO., LONDON (ENG.)
NEW YORK MONTREAL SYDNEY CAPE TOWN MILAN SHANGHAI

H 761

COPYRIGHT

Maltine with COD LIVER OIL

"MALTINE" combined with 30 per cent. of the Purest Norwegian COD LIVER OIL.

The most agreeable and effective form of Cod Liver Oil.

An Easily Digested Fat Food, supplemented bv Carbohydrate, Proteid, and Phosphatic Elements, combined with an active Starch Digestant.

"Maltine" with Cod Liver Oil is regarded by the Medical Profession as a standard therapeutic instrument, yielding results that place it far beyond any of its competitors.

The important characteristics of "Maltine" with Cod Liver Oil are:—

(1) Palatability;
(2) The presence of an
  Effective Proportion of Cod Liver Oil;
(3) A **Semi-Liquid,** convenient Consistence;
(4) Easy assimilability
  due to the **intimate** combination
  of the oil with a malt extract of **exceptional activity**;
(5) A nutritive and therapeutic effect
  due in part to its content of organic phosphates
  derived from wheat and oats,
  as well as barley;
(6) Good keeping properties secured by the
  vacuum process of preparation.

"Apart from its own dietetic value, 'Maltine,' when combined with Cod Liver Oil, certainly enables the latter to be taken by persons who can neither swallow nor assimilate it in any other form. We tasted the preparation after an interval of a year, and were again struck by the success with which all taste of Cod Liver Oil is concealed by 'Maltine' when mixed with the oil by the vacuum process employed by this firm."

—BRITISH MEDICAL JOURNAL, Aug. 28th, 1909.

THE MALTINE MANUFACTURING COMPANY, Limited,
24 & 25, HART STREET, BLOOMSBURY, LONDON,
Will be pleased to send Specimens Free of Charge to Medical Men.

In ordering, kindly specify **"MALTINE COMPANY."**

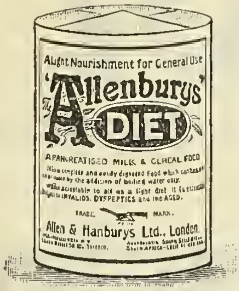
TRADE MARK.
A.D.1715.

A Pancreatised Food that can be made in a minute, the addition of boiling water only being necessary.

The 'Allenburys' DIET

BY the use of the "Allenburys" Diet all trouble of peptonising milk and farinaceous foods is overcome. In the sick room it is invaluable, as the food is easily digested and assimilated, and only the exact quantity required need be prepared at a time.

The "Allenburys" Diet is made from pure full cream milk and whole wheat, both ingredients being partially predigested during manufacture. It can be taken by those who cannot digest cow's milk, and provides a light and very nourishing diet for Invalids, Dyspeptics, and the Aged.


A Light Nourishment for General Use
'Allenburys'
The
DIET
A Pancreatised Milk & Cereal Food
Allen & Hanburys Ltd., London.

For travellers by sea or land this complete food will be found exceedingly valuable.

Sample, with full particulars, sent free on request.

ALLEN & HANBURYS Ltd.,

37, LOMBARD STREET, LONDON, E.C.

United States: Niagara Falls, New York.
Canada: Gerrard Street East, Toronto.
Australasia: Bridge and Loftus Streets, Sydney.
South Africa: Smith Street, Durban.

[See also pages 32 & 33.

The following table gives the results of analyses by Mr. E. F. Harrison, B.Sc. (Lond.) Ph.C., F.I.C., F.C.S., of the principal Brands of Malt Extracts on the market.

The figures given indicate the Diastatic Value and Strength.

DIAMALT - 1392

Other Extracts—

No. 1	920	No. 8	242
" 2	723	" 9	170
" 3	681	" 10	69
" 4	601	" 11	46
" 5	408	" 12	33
" 6	384	" 13	0
" 7	245	" 14	0

"THE" MALT EXTRACT

"THE LANCET"

Cutting from To-day's issue. *July 31st, 1909.*

DIAMALT MALT EXTRACT WITH COD LIVER OIL

(The British Diamalt Co., 11 & 13, Southwark Street, London, S.E.)

We have already remarked upon the high diastatic value of this company's malt extract. According to our experiments, Diamalt digests nearly seven times its weight of starch at body temperature and as much as **13** times its weight of starch at higher temperatures.

It is therefore not surprising that Diamalt blends perfectly with a high percentage of cod liver oil. Samples recently submitted to us yielded respectively **17·00** and **33·73** per cent. by weight of cod liver oil. The excellence of the malt extract adds not a little to the palatability of the compound in spite of the oil. Altogether these preparations may be regarded as the standard of a malt and cod liver oil combination.

Samples Free to the Medical Profession.

THE BRITISH DIAMALT CO., 11 & 13, SOUTHWARK ST., LONDON, S.E.

Lactéol

du Dʳ BOUCARD

FERMENT LACTIQUE

Intestinal
and Cutaneous
Affections.

AGENTS FOR GREAT BRITAIN—
ROBERTS & CO.,
76, NEW BOND STREET, LONDON, W.

Laboratoire de Biologie, 6, rue Guillaume-Tell, PARIS

Extract of
Red Bone
Marrow

(Gly. Medull. Oss. Rub. Armour)

a food of the highest nutritive value

is rich in the elements that make blood and build tissue. Its palatability renders it acceptable to the most delicate stomach.

Especially beneficial in Tuberculous cases.

Specify

ARMOUR'S

as there are imitations

Samples and Literature forwarded on application to

ARMOUR AND COMPANY
LIMITED LONDON

ANTIKAMNIA TABLETS

IN RHEUMATISM AND NEURALGIA.

In the administration of remedies to relieve **Pain**, the element of exhilaration should be considered, as many produce such delightful sensations as to make them dangerous to use.

Such is not the case with **Antikamnia Tablets.** They are simply pain relievers—not stimulants—not intoxicants. Their use is not followed by depression of the heart.

In cases of **Acute Neuralgia**, tested with a view of determining the analgesic properties of Antikamnia, it has been found to exceed any of its predecessors in rapidity and certainty of the relief given. **Neuralgia, Myalgia, Hemicrania**, and all forms of **Headache, Menstrual Pain**, &c., yield to its influence in a remarkably short time, and in no instance has any evil after-effect developed. Strongly recommended in **Rheumatism.** The adult dose is one to two tablets every one, two, or three hours. To be repeated as indicated. All genuine Tablets bear the AK monogram

TO TREAT A COUGH. Antikamnia & Codeine Tablets are most useful. It matters not whether it be a deep-seated cough, tickling cough, hacking cough, nervous cough, or whatever its character, it can be brought under prompt control by these Tablets. To administer Antikamnia & Codeine Tablets most satisfactorily for coughs, advise patients to allow one or two Tablets to dissolve slowly upon the tongue and swallow the saliva. For night coughs, take one on retiring.

ANALGESIC. ANTIPYRETIC. ANODYNE.

ANTIKAMNIA TABLETS. ANTIKAMNIA & CODEINE 5-gr. TABLETS. Supplied in 1oz. packages to the Medical Profession.

THE ANTIKAMNIA CHEMICAL COMPANY, 46, Holborn Viaduct, London.

Lactor

PREPARATIONS OF SOURED MILK

TRADE LACTOR MARK

Whole Milk slightly diluted to render it more easily assimilated, and soured by a pure culture of LACTIC FERMENT.

TRADE LACTOR MARK BULGARIENSIS

Whole Milk soured by the Bacillus of Massol from Bulgarian Sour Milk, recommended by Professor METCHNIKOFF as the most active of Lactic Organisms.

TRADE LACTOR MARK BUTTERMILK

Prepared by carefully churning Milk which has been soured by pure cultures.

FERMENLACTYL BUTTERMILK

Containing the exclusive cultures of the Streptobacillus Lebenis, made from Bulgarian milk, isolated in the laboratories of The Pasteur Vaccine Co., Paris.

LACTOR CREAM CHEESE.

The AYLESBURY DAIRY Co. LTD
St Petersburgh Place, BAYSWATER. W. Telephone No. 2970 Paddington.

HOMMEL'S Hæmatogen

CONTAINS NEITHER ALCOHOL NOR ANTISEPTICS

A combination of 80 parts purified and concentrated Hæmoglobin with 20 parts chemically pure Glycerine and Aromatic Flavouring.

The best of all the existing preparations of Hæmoglobin. More efficacious than Cod-Liver Oil or the ordinary manufactured preparations of Iron. Very strengthening both for Children and Adults. An energetic Blood Former. Increases the Appetite. Aids Digestion.

☞ **MOST SUCCESSFUL IN THE ANÆMIA AND GENERAL WEAKNESS CAUSED BY MALARIA, ALSO IN IDIOPATHIC ANÆMIA, RICKETS, SCROFULA, DISEASES OF FEMALES, NEURASTHENIA, WEAK HEART, PREMATURE DEBILITY in men. Useful in convalescence after acute diseases such as PNEUMONIA, INFLUENZA, and FEVERS.**

FREE FROM BORIC ACID, SALICYLIC ACID, or other chemical preservatives of any kind as certified by the independent chemical Analysis made by the Incorporated Institute of Hygiene, Devonshire-street, London, W.

Contains along with purified Hæmoglobin all the salts of fresh blood, and **valuable compounds of Phosphorus, such as Lecithin, Phosphate of Sodium, and Phosphate of Potassium,** together with the important albuminous constituents of the blood serum, all in a concentrated, purified, and undecomposed state.

☞ **In prescribing, always state "HOMMEL'S" Hæmatogen as spurious imitations are offered.** ☜

ONLY SUPPLIED IN FLUID, NOT IN CAPSULES OR OTHER FORMS.

Infants - - - Take from Half to One Teaspoonful twice a day in milk.
Children - - - „ One or Two Dessertspoonfuls daily, either pure or mixed with any convenient liquid.
Adults - - - „ One Tablespoonful twice a day before the two principal meals.

☞ SAMPLES AND LITERATURE, *gratis and carriage paid, on application.*

GERTH VAN WYK & CO., 36 & 36a, ST. ANDREW'S HILL, LONDON, E.C.

ACIDOL.

A New Substitute for Hydrochloric Acid in Powder and Tablet form. It separates slowly in the presence of liquids and does not retard Pepsin in the course of digestion. The action of this remedial agent being gradual and of long duration renders it far superior to diluted hydrochloric acid.

Dose.—2 tablets three times daily, dissolved in water.
Packing.—Tubes of 10; boxes of 50 tablets of ½ grm. each.

ACIDOL-PEPSIN. A permanent non-hygroscopic Combination of Pepsin and Acidol.

I.—Strong. II.—Mild.

Dose.—2 tablets several times daily; children half tablet. Dissolved in water.

Packing.—Tubes of 10 and boxes of 50 tablets of ½ gram. each.

LECITHIN 'AGFA.' Chemically pure **OVO-LECITHIN INVIGORATOR and NERVE TONIC.** Indications: Neurasthenia, Scrofula, Tabes, Rachitis, Consumption, Debility, &c.

Dose.—2 pills three times daily.

Packing.—Bottles of 50 and 100 pills of 0·05 gram. Lecithin 'Agfa.'

BOROVERTIN. Effective, non-irritating, **Urinary Antiseptic and Cystic Disinfectant.** Prescribed further with excellent results in the treatment of **Typhoid Fever and Gonorrhœa.**

Dose.—1, 2, 4 tablets daily. **Packing.**—Tubes of 20 tablets of 0·5 gram. Borovertin each.

ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION. Pharmaceut. Dept.—Berlin S. O. 36.

FULL LITERATURE AND SAMPLES ON REQUEST.

Agents: Chas. Zimmermann & Co., 9 & 10, St. Mary-at-Hill, London, E.C.

"SCOTT'S Emulsion after Influenza."
"After Whooping Cough."
"Patients derive benefit."

—— ——, Essex, April 6th, 1907.

EVIDENCE : *"Dear Sir,—I recommend SCOTT'S EMULSION to a good many of my patients, who derive benefit from it, particularly after Influenza and Whooping Cough."*

Yours truly,

—— ——, M.R.C.S., L.R.C.P.

16 oz. Bottle, with formula, free to any physician, surgeon, or certificated nurse desiring to test SCOTT'S EMULSION
SCOTT & BOWNE, Ltd., 10 and 11, Stonecutter Street, Ludgate Circus, London, E.C.

MILO FOOD

A COMPLETE DIET FOR INFANTS.

MILO FOOD, being partly composed of milk, is complete and entire in itself, and requires simply the addition of water to make it ready for use. It is not merely an auxiliary, like other Infants' Foods, which require milk to be added in preparing for use.

Awarded the **GOLD MEDAL** at the **CAPE TOWN EXHIBITION.**

Sample and Pamphlet on "The Feeding and Care of Infants" sent free on application to
NESTLE and ANGLO-SWISS CONDENSED MILK CO., 6 & 8, Eastcheap, London, E.C.

SPERMINUM (Poehl)

A Natural Constituent of the Human Organism. Effects the oxidation of the products of the regressive metamorphosis, protects the cells against accumulation of pernicious auto-intoxications, and brings the reduced blood alkalescence back to normal, &c. Favourable results are obtained in cases of NEURASTHENIA, NERVOUS DEBILITY, SENILITY, HYSTERIA, DISEASES of the HEART (Myocarditis, Fat-Heart), SYPHILITIC CACHEXIA, TUBERCULOSIS, TABES, IMPOTENTIA in NEURASTHENIA, Chronic RHEUMATISM, RICKETS, GOUT, ANÆMIA, &c., in cases of OVER-FATIGUE, and for CONVALESCENTS.

ESSENTIA SPERMINI (Poehl) is given 30 drops three times a day, half an hour before meals, in Vichy or Milk. In serious cases **SPERMINUM (Poehl) pro INJECTIONE** in ampullæ each containing one dose.

Manufactured in the Organo-Therapeutic Institute of
Professor Dr. V. POEHL & SONS, ST. PETERSBURG.

Full Particulars and Literature from
A. & M. ZIMMERMANN, 3, Lloyd's Avenue, London, E.C.

A Builder-up of Brain and Nerve Cells.

OVALTINE

A New Delicious Substitute for Tea, Coffee, Cocoa, Chocolate, &c., containing Active Lecithin.

NO COOKING REQUIRED. INSTANTANEOUSLY PREPARED AT THE BREAKFAST TABLE.

Splendid results in NEURASTHENIA, FAULTY DIGESTION, MALNUTRITION, BRAIN-FAG, PHYSICAL AND MENTAL EXHAUSTION.

PARTICULARLY ADAPTED FOR THE OVERFEEDING OF THE TUBERCULOUS.

Literature and Samples free to Medical Men.
OVALTINE is packed in 4½ oz., 9 oz., and 18 oz. Tins.

A. WANDER, Ph.D., *MANUFACTURING CHEMIST,*
1 and 3, Leonard Street, City Road, LONDON, E.C

THE SOUR MILK TREATMENT

of Dyspepsia, Entero-Colitis, Gastric Ulcer, Rheumatism, &c.

PARTICULAR attention is directed to the proved superiority of the Specialities prepared in our Milk Laboratories under the direct control of a skilled bacteriological staff.

THESE SPECIALITIES COMPRISE:

"SAUERMILCH" *(Bacillus of Massol and Streptococcus Lacticus.)*

As recommended by Professor Metchnikoff—see "Observations on Curdled Milk," etc.

"SAUERMILCH" WHEY. "SAUERMILCH" CHEESE.

"FERMENLACTYL" BUTTERMILK.

CURDLED MILK *(S. Lacticus).* **BUTTERMILK** *(Freshly Churned).*

Orders and Communications to— **WELFORD & SONS, LIMITED.**

Chief Offices and Milk Laboratories : : : : ELGIN AVENUE, LONDON, W

Principal Telephone: "Paddington 5440" (2 Lines). Telegraphic Address: "Welford's, London."

PERFECTLY PURE BUT NOT INSIPID.

"THE LANCET"

AND

TIBBLES' Vi-Cocoa

THE LANCET says:

"Vi-Cocoa must be assigned a place in the front rank of really valuable foods, since it is the embodiment of all the numerous principles contained in Malt, Hops, Kola, and Cocoa."

THE "BRITISH MEDICAL JOURNAL"

AND

TIBBLES' Vi-Cocoa

The BRITISH MEDICAL JOURNAL says:

"Vi-Cocoa is a very palatable beverage of great stimulating and sustaining properties."

THE "MEDICAL MAGAZINE"

AND

TIBBLES' Vi-Cocoa

The MEDICAL MAGAZINE says:

"Medical practitioners will find a valuable weapon in Tibbles' Vi-Cocoa in combating the various conditions of nervous exhaustion and enfeebled digestion. The ingredients of which it is composed are carefully selected and of undoubted purity and strength."

AN ANALYST

AND

TIBBLES' Vi-Cocoa

From MATTHEW A. ADAMS, F.R.C.S.,
F.I.C., F.C.S., *Trinity House, Maidstone; Public Analyst in the County of Kent and Past President of Society of Public Analysts.*

"In my opinion Vi-Cocoa is a happy combination, enhancing the food value of ordinary cocoas."

MATTONI'S

GIESSHÜBLER

Natural Sparkling Mineral Water.

FROM THE CELEBRATED SPRINGS, NEAR CARLSBAD, AUSTRIA.

EFFERVESCENCE PURELY NATURAL.

Removes Acidity in the Stomach, gently Stimulates the Intestinal Tract, and Increases the Urinary Secretion.

"The water is well suited for those who are benefited by a course of alkaline water treatment, as in gastric catarrh and allied conditions."—THE LANCET, Feb. 29th, 1908.

Samples and Pamphlet forwarded gratis upon application to the Sole Agents—

INGRAM & ROYLE, LTD.,

EAST PAUL'S WHARF, 26, UPPER THAMES STREET, LONDON, E.C.
And at LIVERPOOL and BRISTOL.

Quality! Uniformity! Purity! Reliability! Maturity!

All represented in **USHER'S WHISKY** which has maintained its reputation for over 100 years

Sir Charles A. Cameron, C.B., M.D., F.R.C.S., F.I.C., Ex-President for the Royal Institute of Public Health, etc., writes as follows, viz.:—
"MY ANALYSIS OF MESSRS. ANDREW USHER'S WHISKY, PROVES THAT IT IS A VERY FINE SCOTCH WHISKY, WELL-MATURED AND POSSESSING AN EXCELLENT FLAVOUR."—CHARLES CAMERON.

ANDREW USHER & Co., Distillers, Edinburgh.
London and Export Agents:—FRANK BAILEY & Co., 59, Mark Lane, E.C.

BRAND'S

ESSENCE OF CHICKEN

☞ ***Now put up in GLASS.*** **FOR INVALIDS.**

BRAND & CO., Ltd., Mayfair Works, Vauxhall, London, S.W.

BULLOCK'S PEPSINA PORCI.

DOSE—2 to 4 GRAINS.

ACID GLYCERINE OF PEPSINE

DOSE 1 to 2 DRMS. (BULLOCK).

"In this preparation advantage has been taken of the solubility of Pepsine in Glycerine to produce a convenient and desirable *liquid form* of this valuable medicine; whilst the preservative qualities of the menstruum confer upon the Acid Glycerine of Pepsine the property of keeping for any length of time."

May be prescribed with most substances compatible with Acids.
In 4-oz., 8-oz. and 16-oz. Bottles, and in Bulk,

The published experiments of G. F. DOWDESWELL, Esq., M.A.Cantab., F.C.S., F.L.S., &c., Dr. PAVY, Professor TUSON, the late Professor GARROD, Dr. ARNOLD LEES, and others, conclusively demonstrate the excellence, high digestive power, and medicinal value of the above preparations.

J. L. BULLOCK & CO., 3, Hanover St., Hanover Sq., London, W.

FICOLAX.

A Compound Laxative SYRUP OF FIGS, guaranteed to be prepared from the finest Figs.

Decidedly pleasant to the palate, it is pleasant in action, and, at the same time, a reliable and active Aperient.

THE BRITISH DRUG HOUSES, Ltd., Graham Street, City Road, N.

ROYAL FACHINGEN

NATURAL MEDICINAL MINERAL WATER.

From the **ROYAL MINERAL SPRINGS** at **FACHINGEN** (Provinz Hessen-Nassau).

World-renowned Dietetic Table Beverage recommended by the highest Medical Authorities for those suffering from GOUT, RHEUMATISM, and the Excess of URIC ACID in the System.
Has been found of great benefit in all septic conditions of the Bladder and Urinary Tract.
Its regular use prevents the accumulation of Uric Acid in the system.

Full Literature and Samples sent on application to the Sole Office in the U.K.,
ROYAL MINERAL SPRINGS, 6, Great Saint Helens, London, E.C.

THE WATERBURY

METABOLIZED COD LIVER OIL COMPOUND

(TASTELESS AND ODOURLESS)

With CREOSOTE and GUAIACOL or PLAIN.

SOLD BY ALL WHOLESALE HOUSES.

MULLER, MACLEAN & CO., Sole Agents and Distributers for the United Kingdom, 17, Charterhouse Buildings, Goswell Rd., London, E. C

Also the following—

AUSTRALASIA—Potter & Birks, Sydney.
PHILIPPINE ISLANDS—Stahl & Rumcker, Manila.
CHINA—Fletcher & Co., Hong Kong.
STRAITS SETTLEMENT AND JAVA—The Pharmacy, Ltd., Singapore.
BURMA—The Rangoon Medical Hall Co., Rangoon.
INDIA—Butto Kristo Paul Co., Calcutta; S. K. Singh, Lahore; E. Brooks & Co., Karachi; Anglo-Indian Drug and Chemical Co., Bombay; W. H. Haller, Madras; Cargills, Ltd., Colombo, Ceylon.

ANTISEPTIC DISINFECTANT

Non-poisonous

CHINOSOL

(Patented)

STERILIZATION of TYPHOID EXCRETA

(unstrained or diluted)

IN 20 MINUTES.

$$\frac{\text{Chinosol} \quad 1:600}{\text{Carbolic Acid} \quad 1:10} = 60$$

Write for Literature, Price Lists, Bacteriological Reports to—

THE CHINOSOL HYGIENIC CO.

(B. KUHN & CO., Proprietors),

16, ROOD LANE, LONDON.

A Sense of

Surgical Security

accrues only when operative resourcefulness is supported by reliable working tools.

Operative skill of the highest order may be nullified by an inferior or contaminated catgut.

"VanHorn" Catgut

is always sterile and invariably dependable as regards tensile strength and absorbability.

Each strand is like every other strand of the same size. *Every* strand is sterile beyond question.

Samples on request.

VAN HORN & SAWTELL

NEW YORK, U. S. A.,
307 Madison Avenue.

LONDON, ENGLAND
31-33 High Holborn

FREE TO DOCTORS.

TYREE'S ANTISEPTIC POWDER

Has been for years a standard antiseptic highly recommended by the medical profession.

TYREE'S POWDER

is of incalculable value in genito-urinary and rectal practice, whether of a Catarrhal or infected conditions of both male and female, as well as dermatological practice, Prickly Heat, Ulcers, Poison Oak, Hives, Eczema, Sores, &c., and as a wash for the Nose, Throat, and Mouth.

It neither pains nor stains. It is odorless and pleasant, economical and effective.

For Samples and Literature, address

J. S. TYREE, Chemist, WASHINGTON, D.C., U.S.A.

TIDMAN'S SEA SALT.

The Proprietors are in possession of such powerful evidence of the value of baths made with this celebrated remedy, used at all temperatures, either by complete immersion or by a simple sponge down, in cases of physical and nervous debility, want of tone, tuberculosis, spinal weakness, rickets, weak ankles, bow legs, rheumatism, tender and swelled feet, glandular swellings, lassitude, sprained joints, hay fever, summer catarrh, and other ailments, that they respectfully invite the medical profession freely to prescribe and recommend its use either as a remedy in itself, or as a useful, and certainly a harmless, adjunct to the existing treatment. This may be done with the utmost confidence, as Messrs. Tidman & Son pledge themselves, if desired, to produce the original testimonials, which are spontaneous, unsolicited, and gratuitous, many being from eminent medical men. They will also, whenever required, give a guarantee that Tidman's Sea Salt is really manufactured direct from the sea, and therefore contains all the curative elements characteristic of sea water. These are, of course, entirely absent from ordinary salt, which is made from inland brine springs selected for this purpose, owing to their special freedom from any chemical substance other than Sodium Chloride itself. Tidman's Sea Salt is supplied in bags of 1 cwt., 10s.; ½ cwt., 5s. 6d.; ¼ cwt., 3s.; carriage paid to any part of the United Kingdom; also in packets, bags, and boxes, from one penny upwards. Of all Chemists and Stores, or direct from Tidman & Son, Limited, Wapping, London, E. — Pamphlet of testimonials and SAMPLE FREE by post to the Medical Profession.

TRYPSOGEN

A SUCCESSFUL TREATMENT FOR

DIABETES

For full particulars see this Journal Mar. 19,'10. Adv. pages 31-33. *Literature on request.*

G. W. CARNRICK CO.

17 CHARTERHOUSE BUILDINGS

Goswell Road, LONDON, E.C.

NOVOCAIN

Is the Non-Irritant Local Anæsthetic.

NOVOCAIN & STRYCHNINE for SPINAL ANÆSTHESIA.

Manufactured at ELLESMERE PORT, CHESTER, by
MEISTER, LUCIUS & BRÜNING, LTD.

"NOVOCAIN is unequalled as an anæsthetic in its freedom from irritant action on delicate tissues, and is of lowest toxicity."—*Vide* report BRITISH MEDICAL JOURNAL, March 27th, 1909, p. 783.

I.—6 % Novocain Solution for Upper Dorsal Injection.
Each Ampul contains:

NOVOCAIN	00·6 gramme.
Water	1 c.c.

One tube of Strychnine Sulphate contains 10 tablets, each containing 0·0005 gramme (½ milligramme)

II.—15 % Novocain Solution for Lower Dorsal-Lumbar Injection.
Each Ampul contains:

NOVOCAIN	0·15 gramme.
Water	1 cc.

One tube of Strychnine Sulphate contains 10 tablets, each containing 0·0005 gramme (½ milligramme).

'These preparations do not decompose nor become discoloured."—*Vide* BRITISH MEDICAL JOURNAL, November 13th, 1909, pp. 1396, 1400, and 1401; and LANCET, November 27th, 1909, p. 1647.

For Full Particulars as to Doses, &c., apply to the Sole Proprietors, Novocain Dept.,

THE SACCHARIN CORPORATION, LTD.,
165, QUEEN VICTORIA ST., LONDON, E.C.

Nastin

For the treatment of **LEPROSY** according to the method of Prof. Dr. DEYCKE.

NASTIN is sold in INJECTIONS Ready for Use
Original Boxes of 6 Tubes of 1 c.cm. each.

NASTIN B i. (Standard Strength.) **NASTIN B ii.** (Concentrated Strength.)

NASTIN B o.
Weakest Strength. Specially indicated in ANÆSTHETIC cases.

KETYN

(BENZOYLCHLORIDE)
In cases of Reaction. See Literature.

Full and explicit Literature and information on application to

A. & M. ZIMMERMANN,
Sole Wholesale Agents for British Empire,
3 LLOYD'S AVENUE, LONDON, E.C.

T. H. H.

WRIGHT'S

LIQUOR CARBONIS DETERGENS

This speciality has been prescribed by the medical profession for upwards of 45 years, and its value as a specific in certain skin diseases is such that many imitations have been placed before the medical profession, and the Compilers of the British Pharmacopœia of 1898 have even introduced a "competitive article." The official preparation does not correspond with Wright's **"LIQUOR CARBONIS DETERGENS,"** and disappointing results are inevitable from the use of the Pharmacopœia preparation in place of Wright's Original Liquor.

For Prescriptions, &c., see works of
Sir T. M'CALL ANDERSON, M.D., Glasgow.
NORMAN WALKER, M.D., F.R.C.P. (Edin).
H. RADCLIFFE-CROCKER, M.D. (Lond), F.R.C.P.
MALCOLM MORRIS, M.D., F.R.C.S. (Edin).
W. ALLAN JAMIESON, M.D., F.R.C.P. (Edin).

SAMPLE FREE
from the Proprietors and Manufacturers,
WRIGHT, LAYMAN & UMNEY, Ltd.
SOUTHWARK, LONDON, S.E.

ERGOAPIOL (Smith)

For
AMENORRHEA
DYSMENORRHEA
MENORRHAGIA
METRORRHAGIA
ETC.

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day.

SAMPLES and LITERATURE SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.
SOLE BRITISH AGENTS:
T. CHRISTY & CO., OLD SWAN LANE, LONDON, E.C.

RISICCOL

(Siccolum Recini Demuth)

ABSOLUTELY TASTELESS

DEMUTH'S CASTOR-OIL POWDER

A palatable, reliable, safe and perfectly harmless aperient. Risiccol is a white powder prepared from the purest Castor Oil and possessing all the medicinal properties of the oil.

SAMPLES FREE on receipt of professional card.

Patentees and
Sole Manufacturers

Telephone 525 Willesden.
Telegrams and Cable—"Risiccol, London."

RISICCOL Ltd. *Works and Chemical Laboratories,* **68 Salusbury Road, West Kilburn, London, N.W.**

PHYTIN

Contains 22·8 per cent. of Phosphorus.

A NATURAL VEGETABLE SALT OBTAINED FROM SEEDS.

EFFECTIVE IN ALL

NERVOUS DISEASES, NEURASTHENIA, HYSTERIA, SLEEPLESSNESS, SEXUAL IMPOTENCE.

Society of Chemical Industry in Basle (Pharm. Dept.), 8, Harp Lane, London E.C.

EAU DENTIFRICE.

FOR THE TEETH AND GUMS.

Celebrated for its Aromatic and Antiseptic Qualities due to its Vegetable Basis.

amples free to Medical Men and Nurses and goods at Wholesale Prices. **Depot A, 203, Regent Street, W.**

Dr Pierre
EAU DENTIFRICE
DU DOCTEUR PIERRE
DE LA FACULTÉ DE MÉDECINE DE
PARIS
CLEANSES AND PRESERVES THE TEETH AND GUMS
CONTAINS NO ACID
DIRECTIONS FOR USE
Pour a few drops into a tumbler of water

Used daily it ensures against Microbic infection.

25 MEDALS AWARDED FOR EXCELLENCE.

Established over 70 years, its reputation of excellence increases notwithstanding multifarious imitations which should be avoided.

Consisting of nearly pure PEPTONS and EXTRACTIVE from the ARTIFICIAL DIGESTION of MEAT.

ive Suppositories contain the Extractive of 20 ounces of Meat in addition to the Peptone.

R. H. BOUCHIER NICHOLSON, Esq., Hull Infirmary, in a case of Gastrostomy, says:—"*The Beef Suppositories* (made by SLINGER & SON, York) *were of much benefit, the man saying he felt great comfort from their use. The man was saved the pangs of starvation from which he was fast sinking when I first saw him.*"

Manufactured only by RAIMES & CO. (Successors to SLINGER & SON), Wholesale Druggists, York. Wholesale Agents: Messrs. NEWBERY & SON, 27 & 28, Charterhouse-square, London, E.C.

May also be had of all Wholesale Druggist and Chemists' Sundrymen.

SAL HEPATICA

EFFERVESCENT SALINE LAXATIVE.
URIC ACID SOLVENT.

A combination of the Tonic, Alterative, and Laxative Salts similar to the celebrated Bitter Waters of Europe, fortified by the addition of Lithia and Sodium Phosphate.

It stimulates the liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation, and metabolism.

Especially valuable in **Rheumatism, Gout, Bilious Attacks, Constipation**

Most efficient in eliminating toxic products from intestinal tract or blood, and correcting vicious or impaired functions.

WRITE FOR FREE SAMPLE.

BRISTOL-MYERS CO.,
277-279, Greene Avenue,
Brooklyn, New York, U.S.A.

On sale by Jobbers and Thomas Christy & Co.,
4, 10, and 12, Old Swan Lane, Upper
Thames St., London, Eng.

THE

UP-TO-DATE

DIABETIC FOODS

Starchless & Sugarless.

SAMPLES & CATALOGUE FREE.

JUST ISSUED.

MANUAL FOR

DIABETIC DIET AND COOKERY.

By C. H. SENN, Price 2/6

Examiner in Sick-Room Cookery to the London Hospital,
Guy's Hospital, &c.

BONTHRON & CO.

(LIMITED),

50 & 52, Glasshouse St., Regent St., London.

WRIGHT'S

LIQUOR CARBONIS DETERGENS

This speciality has been prescribed by the medical profession for upwards of 45 years, and its value as a specific in certain skin diseases is such that many imitations have been placed before the medical profession, and the Compilers of the British Pharmacopœia of 1898 have even introduced a "competitive article." The official preparation does not correspond with Wright's

"LIQUOR CARBONIS DETERGENS,"

and disappointing results are inevitable from the use of the Pharmacopœia preparation in place of Wright's Original Liquor.

For Prescriptions, &c., see works of

Sir T. M'CALL ANDERSON, M.D., Glasgow.
NORMAN WALKER, M.D., F.R.C.P. (Edin).
H. RADCLIFFE-CROCKER, M.D. (Lond), F.R.C.P.
MALCOLM MORRIS, M.D., F.R.C.S. (Edin).
W. ALLAN JAMIESON, M.D., F.R.C.P. (Edin).

SAMPLE FREE

from the Proprietors and Manufacturers,

WRIGHT, LAYMAN & UMNEY, Ltd.

SOUTHWARK, LONDON, S.E.

BRANSON'S SPADE COFFEE

PURE.

NO CHICORY. NO ADULTERATION.

Extract from THE LANCET, 1st January, 1910;—"A difficulty in the preparation of an Essence of Coffee is the preservation of the real Coffee Aroma. This difficulty has been satisfactorily met in the case of 'Spade' Coffee."

A VALUABLE BEVERAGE for INVALIDS and NIGHT WATCHERS.

Always Ready. Boiling water only required.

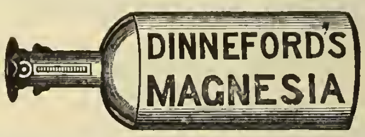
BRANSON & CO., Ltd.,

CHASE WORKS, CLAPHAM, S.W.

Rowntree's Cocoa is particularly suitable

for the convalescent, because of the emulsification of the fats. Its delicious flavour is pleasing to the palate and its nourishing properties are important factors

in the restoration of health

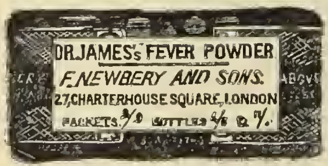


DINNEFORD'S FLUID MAGNESIA.

The most efficacious Antacid and Mild Aperient
for delicate constitutions, Ladies, Children, and Infants.

ALL WHOLESALE DRUGGISTS.

PULVIS JACOBI VER., NEWBERY.


DR JAMES'S FEVER POWDER
F. NEWBERY AND SONS.
27, CHARTERHOUSE SQUARE, LONDON
PACKETS 2/9 BOTTLES 4/6 & 7/.

This is the ORIGINAL ARTICLE from the recipe in DR. JAMES'S OWN HANDWRITING in the possession of MESSRS. NEWBERY.

Prices for Dispensing:
1 oz., 9s.; ¼ oz., 3s. 4d.

27 & 28, Charterhouse Square,
and 44, Charterhouse Street,
London, E.C.; 125 years in St. Paul's Churchyard.

"G. B." DIABETES WHISKY.

55/- PER DOZEN, CARRIAGE PAID

THE LANCET Analysis post free.

GEORGE BACK & CO., Devonshire Square,
BISHOPSGATE, LONDON. Telegrams:—"Diabetes, London."

ALBIRON

NERVE FOOD

A VALUABLE
ALBUMEN
FOOD AND
NERVE TONIC.

THE
BEST FOOD
FOR
DEBILITY.

A New Tonic Food

Albiron is one of a series of Foods with a Milk basis prepared, under expert supervision, by the Wilts United Dairies, Ltd., the largest pure milk purveyors in the Western Counties.

Albiron is a combination of Organic Phosphorus with Iron and Albumen in a form which can be readily absorbed and assimilated by the weakest stomach.

Exhaustive preliminary tests have proved it of great value in cases of Anæmia, Chlorosis and kindred diseases.

The Food is very palatable and has a stimulating effect on the appetite. For these reasons it is particularly beneficial in the early stages of consumption.

Albiron is exceedingly well borne and gives great relief in cases of violent sea-sickness. It may be prescribed with confidence in every form of stomachic disorder.

Samples and full details free to the Medical Profession.

The Wilts United Dairies, Ltd.,
Devizes, England.

50

FAMED FOR
OVER 50 YEARS.

Cambus
Whisky.

An Ideal Beverage.
Soft and Delicate.

Highly approved by the
Medical Profession.

The Distillers Co., Ltd.,
— Edinburgh. —

NEW
PALATABLE
DIABETIC
FOODS

ABSOLUTELY STARCHLESS & SUGARLESS.

Samples Free.

DIABETIC COOKERY BOOK, 1s. to Patients.

CALLARD & CO., Food Specialists to all the great Hospitals,

74, Regent Street, London.

AGENCIES in ALL IMPORTANT COUNTRIES.

GLUTEN FLOUR. Containing 7% Starch and no Sugar. Manufactured by G. VAN ABBOTT & SONS, Original Manufacturers of all Gluten and Soya Foods for Diabetes, BADEN PLACE, CROSBY ROW, BOROUGH, S.E.

Telegraphic Address: "GLUTENS, LONDON." ESTABLISHED 1859.

DIABETES BLATCHLEY'S Celebrated Bread and Biscuits supplied to nearly all the London and County Hospitals & Infirmaries. Blatchley's Gluten and Bran Biscuits, a speciality in treatment of Obesity, made from a recipe of Dr. Yorke-Davies. Price Lists free. **OBESITY**

E. BLATCHLEY, 35, GREAT PORTLAND STREET, OXFORD CIRCUS, LONDON W. (Late 167, Oxford Street). Established 1838.

GLUTEN FLOUR For BREAD and BISCUIT BAKING.

OURS IS THE BEST, PUREST, AND CHEAPEST ON THE MARKET. We recommend all Wholesale Houses before making purchases to apply to us. **H. D. HARDIE & CO.,** 176, Ingram St., Glasgow.

TARASP WATER Nature's Remedy for INDIGESTION, GOUT, OBESITY

Sole Importer—**RICHARD DAVIS,** 20, MADDOX STREET, REGENT STREET, W.

MONTHLY CATALOGUE of SECONDHAND and NEW SURGICAL INSTRUMENTS, OSTEOLOGY, MICROSCOPES, POST FREE.

Students' Half Sets of Osteology, 35s., £2 2s., £2 10s. Secondhand Surgical Instruments. Osteology, Microscopes bought. Articulated Skeletons lent on hire. Dis-articulated Skulls, £1 15s., £2 2s., £2 10s. Secondhand P. & O. and other Steamship Co.'s Outfits at greatly reduced prices.

MILLIKIN & LAWLEY, 165, STRAND, LONDON. [Telephone City 1706.

MICROSCOPES AND SCIENTIFIC APPARATUS BOUGHT OR TAKEN IN

EXCHANGE

H. F. ANGUS & CO., 83, WIGMORE ST., CAVENDISH SQUARE, LONDON, W.

NO SMELL. — *NO POISON.*

CONDY'S FLUID

DESTROYS PUTRESCENT MATTER,
BACTERIA, PTOMAINES AND TOXINS.
ALLAYS IRRITATION AND PROMOTES HEALING.
PURIFIES AIR AND WATER.
A BOON IN THE SICK CHAMBER.
CANNOT MASK ONE SMELL BY ANOTHER

SPECIFIC DIRECTIONS WITH THE BOTTLE.

Lister Institute
OF PREVENTIVE MEDICINE
CALF LYMPH
In Metal Tubes.

Total Percentages of the Lymph Returns.

YEARS.	PERCENTAGE SUCCESS.	
	CASE.	INSERTION.
1906	99·4	97·5
1907	98·4	94·8
1908	99·4	96·4
Total for 3 years	99·0	96·2

Metal Tubes (one vaccination), 6d. each, 5/- per doz.
Glass Capillary Tubes at the same rate.

Wholesale Agents:
Allen & Hanburys Ltd., Lombard Street, London.

DR. CHAUMIER'S
CALF LYMPH.
GLYCERINATED AND REINFORCED.
THE CHEAPEST AND MOST ACTIVE LYMPH.
Prepared under the MOST MINUTE ANTISEPTIC PRECAUTIONS
Supplied in Tubes, sufficient to vaccinate 1 or 2 persons, at 5d. each; per dozen, by 12 tubes or more, 4s. 6d.; 10 persons at 8d. each; 25 persons at 1s. 3d. each. Collapsible tubes for 40 vaccinations, 2s. 6d. each. Packing and postage, 1d. in addition.
To obtain a Sample Tube sufficient for 10 vaccinations, fill up accompanying Coupon,

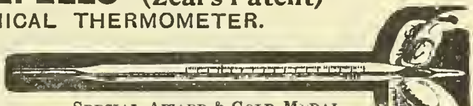
Name ....
Address ....
....

and send it (with 1½d. in stamps) to the Agents for Gt. Britain
ROBERTS & CO., 76, New Bond St., LONDON, W.

Prepared strictly in accordance with the methods advocated by Dr. S. Monckton Copeman, F.R.S.
JENNER INSTITUTE
ASEPTIC GLYCERINATED
CALF LYMPH
Tubes, 1s. each, 10s. per dozen. Postage 1d.
Half Tubes, 3 for 1s. 6d., 5s. per dozen.
Telegraphic Address: "SILICABON, LONDON."
Postal Orders and Cheques to be made payable to JAMES DOUGLAS.
JENNER INSTITUTE FOR CALF LYMPH,
73, Church Rd., Battersea, London, S.W.

Sanitary, Antiseptic, Absorbent and of Downy Softness.
SOUTHALLS'
Accouchement Sheets
In three sizes, 1/-, 2/- and 2/6 each.
Southalls' Towels (Patented) The Original and Best.
Reduced Prices to members of the Nursing and Medical Professions.
SOUTHALL BROS., & BARCLAY, LTD., BIRMINGHAM.

The "REPELLO" (Zeal's Patent)
CLINICAL THERMOMETER.



NO SHAKING REQUIRED
SPECIAL AWARD & GOLD MEDAL, New Zealand Exhibition.
A 30 sec. Reset instantly. Made in all kinds. Kew certificated.
Guaranteed accurate. Of all Instrument Makers, Chemists, &c.
Inventor and Maker—G. H. ZEAL, 82, Turnmill St., London, E.C.

WRIGHT'S
COAL TAR SOAP
"THE MEDICAL PRESS" says:
"The actual tar bodies contained in it, prepared from Liquor Carbonis Detergens are of a complex character. On analysis we find the Tar Bodies amount to a little over 5 per cent. Combined as they are they exert an Antiseptic Action equal to a soap containing 15% Pure Phenol but without its irritating effect. The Knowledge of a Standard Soap possessing .... Uniform Antiseptic Value cannot be too widely spread."
Does not Stain Skin or Linen.
Samples FREE to Medical Men from the Proprietors,
WRIGHT, LAYMAN & UMNEY, LTD.,
Southwark, London, S.E.

BRASS DOOR-PLATES
• F. OSBORNE & Co. LTD •
27 CASTLE ST EAST, OXFORD ST LONDON
SEND FOR SKETCHES & ESTIMATES.

University of London (University COLLEGE).

ADVANCED COURSE IN SCHOOL HYGIENE.

This Course will be given from the 19th to the 27th of April, inclusive. The Course is designed for medical men and women, and especially those engaged in School work; it should also prove valuable to candidates for Diplomas of Public Health.

Demonstrations or excursions will be provided in the mornings, and Lecture-Demonstrations will be given in the afternoons by the following Lecturers:—N. Bishop Harman, M.B., F.R.C.S.; R. C. Elmslie, M.S., F.R.C.S.; Henry Kenwood, M.B., D.P.H., F.R.S.E.; James Kerr, M.D., D.P.H.; H. Meredith Richards, M.D., D.P.H.; F. C. Shrubsall, M.D., M.R.C.P., D.P.H.; C. J. Thomas, M.D., D.P.H.; C. E. Wallis, M.R.C.S., L.D.S.; L. Williams, M.D., D.P.H.; R. Williams, M.D., D.P.H.; P. M. Yearsley, F.R.C.S.

Fee 2 guineas.

The number of persons admitted to the Course will be limited to fifty.

Full particulars of this Course may be obtained on application to

WALTER W. SETON, M.A., Secretary.

University College, London (Gower-street, W.C.).

DIPLOMA IN PUBLIC HEALTH.
The Royal Institute of Public Health.

President:
The Right Hon. LORD STRATHCONA and MOUNT ROYAL, G.C.M.G.
Principal:
Professor WILLIAM R. SMITH, M.D., D.Sc., LL.D., F.R.S.Edin., Barrister-at-Law.

A full Course of Bacteriological and Chemical Laboratory Instruction, including Lectures on Public Health, &c., in compliance with the regulations of the Universities and other Examining Bodies, is given under the direction of the Principal.

The various Laboratories are always open and available for work at any time. All material is provided.

Special arrangements are made to suit the convenience of those engaged in practice.

BACTERIOLOGICAL AND CHEMICAL EXAMINATIONS.

All Branches of Clinical Research and Chemical Analyses are undertaken for Medical Practitioners and Public Bodies.

Inspection of the Laboratories is invited, where further particulars can be obtained. Calendar of the Institute, price one shilling.

37, Russell-square. JAMES CANTLIE, M.A., M.B., Hon. Secretary.

DIPLOMA IN PUBLIC HEALTH.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

DEPARTMENT OF HYGIENE AND PUBLIC HEALTH.

Professor—HENRY KENWOOD, M.B., F.R.S.E., D.P.H., F.C.S., Medical Officer of Health for the County Council of Bedfordshire, and Medical Adviser to the Education Committee, &c.

Assistant and Lecturer—F. N. KAY-MENZIES, M.D., D.P.H.

THE LABORATORIES, WHICH HAVE RECENTLY BEEN ENLARGED AND RE-EQUIPPED, ARE OPEN DAILY FROM 10 TO 5 (SATURDAYS 10 TO 1) FOR PRACTICAL INSTRUCTION AND RESEARCH.

The next Course begins in April.

Weekly Demonstrations of Sanitary Appliances and Excursions to places of Public Health interest are undertaken.

Special arrangements are made to suit the convenience of those engaged in practice.

A Course of Bacteriological Instruction for Public Health Students is given by D. N. NABARRO, M.D., B.Sc., D.P.H., under the direction of Professor SIDNEY MARTIN, M.D., F.R.S.

Particulars may be obtained on application to

WALTER W. SETON, M.A., Secretary.

University College, London (Gower-street), W.C.

St. Mary's Hospital Medical School,

PADDINGTON, W.
(University of London.)

The SUMMER SESSION will begin on April 21st.

Students entering at this time may compete for Entrance Scholarships in September next.

The Medical School provides Courses of Instruction covering the ENTIRE MEDICAL CURRICULUM for the Degrees of the Universities and for the Diplomas of M.R.C.S., L.R.C.P. All Courses are recognised by the University of London for Internal Students.

SIX ENTRANCE SCHOLARSHIPS, value £145 to £25, will be competed for in September.

Illustrated Handbook on application to the Dean.

St. Mary's Hospital Medical School,

PADDINGTON, W.

PRELIMINARY SCIENTIFIC COURSE.

The Medical School provides a complete Course of Chemistry, Physics, and Biology, under Recognised Teachers of the University of London.

Students may join the Course in April.

Time Table and particulars on application.

Royal College of Physicians of LONDON.

The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday, April 19th.

Candidates are required to give fourteen days' notice in writing to the Registrar of the College, with whom all certificates and testimonials required by the By-laws are to be left at the same time.

Pall Mall East, S.W. J. A. ORMEROD, M.D., Registrar.

West-End Hospital for Diseases of the NERVOUS SYSTEM, 73, Welbeck-street, London, W.

CLINICAL DEMONSTRATIONS for Practitioners and Senior Students are given by the Physicians on the undermentioned days:—

Mondays, at 3 P.M.	...	...	Dr. Harry Campbell.
Tuesdays, at 5.30 P.M.	...	...	Dr. Purves Stewart.
Wednesdays, at 3 P.M.	...	...	Dr. F. Palmer.
Fridays, at 5.30 P.M.	...	...	Dr. E. D. Macnamara.

Royal Ear Hospital, Dean-street,

Soho.

CLINICAL INSTRUCTION by Members of the Staff daily at 2 P.M. and 6 P.M.

Fee for Course of six weeks, one guinea.

City of London Lying-in Hospital

AND MIDWIFERY SCHOOL,
City-road, E.C.

MEDICAL PUPILS admitted to the Practice of the Hospital. Every opportunity afforded of seeing Obstetrical Complications and Operative Midwifery.

Certificates awarded as required by the various examining bodies. Pupils trained for Midwives and Monthly Nurses. Special preparation for Examination of Central Midwives Board.

For rules, fees, &c., apply, R. A. OWTHWAITE, Secretary.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone, N.W.

MEDICAL STUDENTS and QUALIFIED PRACTITIONERS admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery, upwards of three-fourths of the total admissions being primiparous cases.

CERTIFICATES AWARDED as required by the various Examining Bodies.

For rules, fees, &c., apply, ARTHUR WATTS, Secretary.

UNIVERSITY EXAMINATION POSTAL INSTITUTION.

OFFICES—17, RED LION SQUARE, HOLBORN, LONDON, W.C
(LATE 27, SOUTHAMPTON ST., STRAND.)

Manager—Mr. E. S. Weymouth, M.A. (Lond.).

Postal or Oral preparation for all Medical Exams. ***16 Medical Tutors, including 9 Gold Medallists.***

3000 Successes for various Examinations. **RECENT SUCCESSES.** *List on application.*

M.D. (Lond.), 1901-9: **152,** including **9** Gold Medallists.

M.S. (Lond.) Gold Medal Four Times obtained. *Also Private Tuition for Medical Preliminary.*

INTER. M.B. (Lond): **19.** **M.B., B.S.,** 1906-9, **40.**

D.P.H. (various) during 1906-9, **49.** **M.D.** Durham (for Practitioners): 1900-9: **31.**

F.R.C.S. (Eng., Edin., Ireland): **25.** Primary Fellowship (Eng.), during 1907-9, **18.**

R.A.M.C. Entrance: during 1908-9, **6.** Promotion to Major during 1906-9, **22.**

I.M.S., M.B., B.S. (Cantab. &c.), **R.N.,** CONJOINT, **M.R.C.P., M.D.** (Brux.), **M.D.** (Thesis), &c.

Postal Courses; Oral Classes; Private Tuition; also Laboratory, Museum, and Microscope Work.

CAUTION. Before taking out Postal Courses with any Institution advertising successes obtained in Medical Examinations, candidates should insist on seeing a list of such successes in print and satisfying themselves that it is genuine.

THE UNIVERSITY EXAMINATION POSTAL INSTITUTION is prepared to supply a list of 3000 successes gained by its Candidates in various Medical and other Examinations during the last 27 years.—Manager, E. S. WEYMOUTH, M.A.Lond., 17, Red Lion-square, Holborn, London, W.C.

Society for Relief of Widows and ORPHANS of MEDICAL MEN.

—Founded 1788. Incorporated by Royal Charter, 1864.—The Members are reminded that a Quarterly Court of Directors will be held on Wednesday, April 13th. Candidates for admission into the Society desirous of being balloted for at the meeting must send their forms of proposal to the Secretary on or before March 23rd. The forms of proposal may be obtained from the Secretary. The benefits of the Society are restricted to the families of deceased Members of not less than *Three* years' standing. Only registered Medical Practitioners resident within a radius of twenty miles from Charing Cross are eligible for election as Members. The Secretary attends at the office every Wednesday and Friday, from 4 to 5 o'clock.

E. J. BLACKETT, Secretary.

11, Chandos-street, Cavendish-square, W.,
March 21st, 1910.

POST-GRADUATE STUDY.

London School of Clinical Medicine.

FOR QUALIFIED PRACTITIONERS ONLY.

At the SEAMEN'S HOSPITAL (Dreadnought, Greenwich), to which are affiliated for teaching purposes the following Hospitals:—

WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.
GENERAL LYING-IN HOSPITAL, York-road.
BETHLEM ROYAL HOSPITAL.

THREE SESSIONS ANNUALLY, commencing on or about 5th January, 15th April, and 1st October.

Classes in OPERATIVE SURGERY can be formed at any time. Courses of one month only may be taken in Clinical work.

For further particulars and complete Syllabus apply to C. C. CHOYCE, the Dean.

North-East London Post-GRADUATE COLLEGE

PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM, N.

The practice of the Hospital is limited to medical practitioners. Practical Classes in Clinical Subjects, including Bacteriology, are arranged. The fee for one month is 2, for three months 3, and for a perpetual ticket 5 guineas. Prospectus, &c., may be obtained from A. J. WHITING, M.D., Dean.

WEST LONDON POST-GRADUATE COLLEGE.

WEST LONDON HOSPITAL, Hammersmith-road, W.—The Hospital Practice is reserved exclusively for Post-Graduates, and a Reading- and Writing-room, in addition to a Lecture-room, is provided for them. A Special Class in Bacteriology is held each month.

Prospectus with full particulars, will be sent on application to

L. A. BIDWELL, Dean.
DONALD ARMOUR, Vice-Dean.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

LECTURES, CLINIQUES, and SPECIAL PRACTICAL CLASSES.

Annual Subscription—One Guinea.

A Clinical Research Laboratory is attached to the College, where specimens may be sent for examination and report at moderate fees.

Particulars from Secretary, 22, Chenies Street, Gower Street, W.C.

CHARING CROSS HOSPITAL MEDICAL COLLEGE.

(University of London.)

SUMMER SESSION 1910 begins Monday, April 25th.

The College is complete in all Departments.

SPECIAL TEACHERS

for all Preliminary and Intermediate Subjects.

EIGHT ENTRANCE SCHOLARSHIPS, for which Students joining in the Summer Session may compete, are awarded annually, in September, of the aggregate value of £430.

Twenty-two Hospital and Teaching APPOINTMENTS are made yearly.

For Prospectus and details of fees apply to

FREDERICK C. WALLIS, F.R.C.S., Dean.

ESTABLISHED 1862.

THE SURGICAL AID SOCIETY.

CHIEF OFFICE—SALISBURY SQUARE, LONDON, E.C.
PATRON: HIS MAJESTY THE KING.
PRESIDENT: The Rt. Hon. the EARL OF ABERDEEN, P.C., G.C.M.G.

This SOCIETY supplies Spinal Supports, Leg Instruments, Trusses, Elastic Stockings, Crutches, Artificial Limbs, Artificial Eyes, &c., and every other description of mechanical support to the poor, without limit as to locality or disease.

39,204 Appliances given in the year ending Sept. 30th, 1909.
Over 480 Patients relieved weekly.

Annual Subscription of 10s. 6d., or Life Subscription of 5 guineas, entitles to Two Recommendations per annum; the number of Letters increasing in proportion to amount of contribution.

SUBSCRIPTIONS and DONATIONS are earnestly solicited, and will be thankfully received by the Bankers, Messrs. Barclay & Co., Limited, Lombard-street, or by the Secretary at the Office of the Society.

RICHARD C. TRESIDDER, Secretary.

Royal London Ophthalmic Hospital,

MOORFIELDS.

(University of London.)

Gentlemen may enter to the practice of the ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, at any time, and are on certain conditions eligible for appointment as CLINICAL ASSISTANTS.

Courses of Instruction in the EXAMINATION of the EYE, the USE of the OPHTHALMOSCOPE, REFRACTION, EXTERNAL DISEASES, SURGICAL ANATOMY, MOTOR ANOMALIES, PATHOLOGY, and OPERATIVE SURGERY commence in January, May, and October.

Classes in PRACTICAL PATHOLOGY and BACTERIOLOGY are held at frequent intervals.

Fees for the Practice:—

Perpetual	Five Guineas.
Six months	Three Guineas.

Clinical work begins at 9 A.M. Operations are performed daily between 10 and 1.

For further particulars apply to ROBERT J. BLAND, Secretary, Royal London Ophthalmic Hospital, City-road, E.C.

Prifysgol Cymru. University of Wales.

DIPLOMA IN PUBLIC HEALTH.

Examinations for the above Diploma will be held in Cardiff on June 28th, 1910, and following days, and also in December, 1910. Entries must be received not later than May 1st for the June examination. Particulars may be obtained from the Registrar, University Registry, Cathays Park, Cardiff.

University of Durham College of MEDICINE, Newcastle-upon-Tyne.

The SUMMER SESSION will be commenced on Tuesday, April 19th, 1910.

Degrees in Medicine, Surgery, and Hygiene, and Diplomas in Public Health and Dental Surgery.—Six Degrees and Two Diplomas are conferred by the University of Durham—viz., the Degrees of Bachelor of Medicine, Master of Surgery, Bachelor of Surgery, Doctor of Medicine, Bachelor of Hygiene, Doctor of Hygiene, Diploma in Public Health and Diploma in Dental Surgery.

These degrees are open to both men and women.

SCHOLARSHIPS, &c.—A University of Durham Scholarship, value £100 for Proficiency in Arts, awarded annually to Students in their first year only. The Pears Scholarship, value £150, for proficiency in Arts. The Dickinson Scholarship, value the interest of £400 annually, together with a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400 annually, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700 annually, for Medicine. The Gibb Scholarship, value the interest of £500 annually, for Pathology. The Goyder Memorial Scholarship (at the Infirmary, Newcastle), value the interest of £325 annually, for proficiency in Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, interest on £680, and the Stephen Scott Scholarship, interest on £1000. Heath Scholarship.—The late George Yeoman Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year. Gibson Prize, value the interest on £225 annually, for Midwifery and Diseases of Women and Children. The Turnbull Prize and Medal for Surface Anatomy.

At the end of each Session, Prizes are awarded in each of the regular classes. Assistant Demonstrators of Anatomy and Assistant Physiologists are appointed.

Further particulars with regard to Examinations, &c., and all other matters connected with the College, may be obtained from Professor HOWDEN, Secretary, College of Medicine, Newcastle-upon-Tyne.

DIPLOMA IN PUBLIC HEALTH.

UNIVERSITY OF CAMBRIDGE.

LECTURES and PRACTICAL INSTRUCTION in the subjects required will begin 13TH JANUARY and 21ST JUNE, 1910, at the UNIVERSITY LABORATORIES, DOWNING ST., CAMBRIDGE.

Hygiene—Dr. Anningson.
Practical Sanitary Administration—Dr. Anningson and the M.O.H. of Cambridge.
Bacteriology and Preventive Medicine—Dr. Graham-Smith.
Chemistry and Physics—Mr. J. E. Purvis, M.A.
Animal Parasites—Mr. A. E. Shipley, M.A., F.R.S.

Further particulars may be obtained from the above Lecturers at the University Laboratories, or from Dr. Anningson, Walthamsâl, Barton-road, Cambridge.

The National University of Ireland.

STUDENTSHIPS, 1910.

There will be offered for Competition in Autumn, 1910, a Studentship of £100 per annum, tenable for two years, in each of the following subjects, or groups of subjects:—

1. Ancient Classics.
2. Mathematical Science (Mathematics and Mathematical Physics).
3. Mathematical Physics and Experimental Physics.
4. Modern Literature.
5. Experimental Science

There will also be offered for Competition in Autumn, 1910, one Medical Studentship of £100 per annum, tenable for two years.

The subjects of examination for the Studentship will be:—

I. Pathology.
II. Bacteriology.

Details on application to

JOSEPH M'GRATH, LL.D., Registrar of the University.

The National University of Ireland.

TRAVELLING STUDENTSHIPS, 1910.

There will be offered for Competition in Autumn, 1910, amongst Graduates of the University of not more than three years standing three Travelling Studentships, each of which will be tenable for three years, and will be of the annual value of £200.

The subjects in which these Travelling Studentships will be offered for competition will be—

1. Ancient Classics.
2. Mathematical Science.
3. Mental and Moral Science.

Details on application to

JOSEPH M'GRATH, LL.D., Registrar of the University.

Royal College of Physicians of EDINBURGH, ROYAL COLLEGE of SURGEONS of EDINBURGH, and ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES of REGULATIONS for the TRIPLE QUALIFICATION of this BOARD (L.R.C.P.E., L.R.C.S.E., and L.F.P. and S.G.), containing Dates of Professional Examinations for year 1910, Curriculum, &c., and for DIPLOMA in PUBLIC HEALTH, may be had on application to JAMES ROBERTSON, Solicitor, 54, George-square, Edinburgh, Inspector and Treasurer for Edinburgh, or from ALEXANDER DUNCAN, LL.D., Faculty Hall, 242, St. Vincent-street, Glasgow.

Notice.—The Medical Preliminary EXAMINATION conducted by the EDUCATIONAL INSTITUTE of SCOTLAND will be held in Edinburgh, Glasgow, London, Liverpool, and Dublin in April, July, and September, 1910.

Particulars on application to S. M. MURRAY, Registrar, 34, North Bridge-street, Edinburgh, from whom Calendars (price 1s.) can be obtained.

Edinburgh, March, 1910.

Triple Qualification, Edinburgh.—Special preparation, in Class, Privately, and by Correspondence, for these examinations. Also for Fellowship Examinations of Royal College of Surgeons, Edinburgh, and M.D. Brussels. Resident Pupils received.—Address, Class Rooms, 7, Chambers-street, Edinburgh.

FELLOWSHIPS.

The Special Class for the July Examination of the Royal College of Surgeons, Edinburgh, will commence on 21st April. Correspondence should be commenced at once.—Particulars and Regulations from Dr. Knight, 7, Chambers-street, Edinburgh.

MEDICAL EXAMINATIONS

ORAL AND CORRESPONDENCE

COACHING

By a Staff of 18 highly qualified Tutors. Honoursmen and Gold Medallists.

THE MOST SUCCESSFUL INSTITUTION OF ITS KIND.

RECENT REMARKABLE SUCCESSES

D.P.H. (Camb., Lond., Vict., Dublin, etc.). 48 successes in two years.

M.D. Durh. (15 years) 6 recent successes.

M.D. Thesis (all Universities): 15 successful in 1908, 18 in 1909.

M.D. (Brux.); 12 sent up last two years. All successful, 5 with Honours.

I.M.S., R.A.M.C., R.N. and PROMOTION: 26 successes in two years.

F.R.C.S. (Edinburgh and Ireland): Several recent successes.

PRIMARY F.R.C.S. (Eng.): 7 successful in 1909.

M.B. (various): 35 recent successes.

CONJOINT FINALS: 9 successful at the last Exam.

L.S.A., 8 successes.

And numerous other Successes.

Prospectus and full particulars on application to the Manager,

F. LLOYD WILSON, M.A.,
THE MEDICAL CORRESPONDENCE COLLEGE,
20, HIGH HOLBORN, W.C.

☞ THESIS.

COACHING by M.D. 16 years' experience. Hundreds of Successes. Highest Honours, &c. Pass Guaranteed.

Address, No. 125, THE LANCET Office, 423, Strand, W.C.

MEDICAL PRELIMINARIES.

RAPID and EFFECTIVE PREPARATION for London Matric., Oxford, Cambridge, Durham, and other Exams. Scholarships. Private Tuition.

SMALL CLASSES. POSTAL COURSES.

CARLYON COLLEGE, 55 and 56, CHANCERY LANE, W.C.
1200 Recent Successes, including 10 Hospital Scholarships. [Est. 1890.

STAMMERING

PERMANENTLY CURED.

Booklet of Particulars and Testimonials from

Mr. A. C. SCHNELLE, 119, Bedford Court Mansions, LONDON, W.C.

Prudential Assurance Company,

LIMITED, HOLBORN BARS, LONDON.

Founded 1848.

Invested Funds, £74,000,000.

Reversions and Life Interests in Landed or Funded Property or other Securities and Annuities PURCHASED or LOANS granted thereon by the

EQUITABLE REVERSIONARY INTEREST SOCIETY,
LIMITED,
10, Lancaster-place, Waterloo Bridge, Strand.

Established 1835. Capital (paid up) £500,000.

General Life Assurance Company.

Established 1837. LIFE MORTGAGES, ANNUITIES.

CHIEF OFFICE—103, CANNON STREET, LONDON, E.C.

Capital and Reserves—£3,000,000.

Advances made on Reversions, vested or contingent, and Life Interest, and on Personal Security in connexion with a Life Policy.

JOHN R. FREEMAN, Manager and Secretary.

The ANNUAL REPORT of the

NATIONAL PROVIDENT INSTITUTION

shows

INCREASED BUSINESS,
DECREASED EXPENSE RATIO,
A HIGH RATE OF INTEREST,
A LOW RATE OF MORTALITY,
and GOOD BONUS PROSPECTS.

Write for a copy to 48, GRACECHURCH STREET, LONDON.

LIFE ANNUITIES FOR INVALIDS

Terms based on the Medical Aspect of each case.

Apply for particulars to Secretary,

ROYAL EXCHANGE ASSURANCE, LONDON. Incorporated A.D.1720.

BIRKBECK BANK

Established 1851.
SOUTHAMPTON BUILDINGS,
HIGH HOLBORN, W.C.

2½ PER CENT. INTEREST allowed on Deposit Accounts, repayable on demand.

2 PER CENT. INTEREST on Drawing Accounts with Cheque Book.

All general Banking Business transacted. ALMANACK with full particulars, POST FREE.

C. F. RAVENSCROFT, Secretary.

ORIENT CRUISES

to SUNNY LANDS

ALGERIA
SPAIN
MOROCCO
BALEARIC ISLANDS
GIBRALTAR
PORTUGAL

By the S.S. "ORMUZ," 6465 tons Register.
From MARSEILLES, 9th APRIL to 22nd APRIL.
By the S.S. "OTRANTO," 12,124 tons Register.
From LONDON, 13th to 30th MAY.

FARES from 13 to 55 Guineas.

Managers—F. GREEN & CO., and ANDERSON, ANDERSON & CO., Fenchurch-avenue, London. For passage apply to the latter firm, at 5, Fenchurch-avenue, E.C., or to the West-End Branch Office, 28, Cockspur-street, S.W.

JAMAICA, THE NEW RIVIERA.

IMPERIAL DIRECT MAIL SERVICE
BRISTOL TO KINGSTON (JAMAICA).
PORT ANTONIO ... ... April 2nd.
PORT ROYAL ... ... April 16th.
The "PORT KINGSTON" calls
at BERMUDA out and home.
Magnificent accommodation for Saloon & 2nd Class Passengers. Fares Moderate.

Apply ELDER, DEMPSTER, and CO., Liverpool; 4, St. Mary Axe, London; West-End Office, 14, Waterloo-place, Pall Mall; Baldwin-street, Bristol.

NEW ZEALAND, TASMANIA, CAPE TOWN,

TENERIFFE.—The NEW ZEALAND SHIPPING CO., LTD. (Incorporated in New Zealand), will despatch their Royal Mail Steamers as below.

Apr. 14, RUAHINE (tw. sc.), 10,785. | May 12, RUAPEHU (tw. sc.), 7885

Low fares, single and return. Superior accommodation.

Apply to Gray, Dawes & Co., Craven House, Northumberland-avenue, or to J. B. Westray & Co., 138, Leadenhall-street, E.C.

NORWAY, NORTH CAPE, AND CHRISTIANIA.

4 SPECIAL YACHTING CRUISES
BY
R.M.S.P. "AVON" (tw. sc., 11073 tons)
FROM
GRIMSBY and LEITH,
JULY 1st, 16th, and 30th, and AUGUST 13th.
CRUISES of 13 DAYS and upwards
from £1 a day.

R.M.S.P. THE ROYAL MAIL STEAM PACKET COMPANY.
London: 18, Moorgate Street, E.C.; and 32, Cockspur Street, S.W.

EASTER HOLIDAYS.

SPAIN AND PORTUGAL.
FIRST SALOON ... ... £10 RETURN.
Leaving SOUTHAMPTON: "DANUBE" (5886 tons) March 25th.
Arriving ,, "ASTURIAS" (12,002 ,,) April 9th.

MOROCCO,
CANARY ISLANDS, AND MADEIRA.
23 DAYS, FROM £21.
Fortnightly from LONDON, March 25th.

R.M.S.P.—THE ROYAL MAIL STEAM PACKET COMPANY.
London: 18, Moorgate Street, E.C., and 32, Cockspur Street, S.W.

St. John's House.—Trained and Experienced Medical, Surgical, Maternity NURSES and MASSEUSES can be obtained by application, personally or by letter, to the Sister Superior, 12, Queen-square, Bloomsbury. Telephone: No. 5099 Central P.O.). Telegraphic Address: "Private Nurses, London."

The Hospital for Sick Children, Great Ormond-street, W.C.—TRAINED NURSES can be had on application to the Matron. Telegraphic address, "Great," London. Telephone, No. 2900 Holborn.

Mental Nurses' Co-operation, for the Supply of Certificated MENTAL NURSES, Male and Female, 49, Norfolk-square, W.

The Co-operation has the approval and support of many Mental Specialists. All Nurses sent out are insured against accident.—Apply to the Lady Superintendent, Miss Jean Hastie.
Telegraphic address: Nursental. Telephone: No. 1713 Mayfair.

National Hospital Male Nurses' ASSOCIATION.—Fully trained MALE NURSES supplied at the shortest notice. All nurses hold the two years' certificate of training at the National Hospital for the Paralysed and Epileptic. Skilled Masseurs supplied.—Apply to the Lady Superintendent, National Hospital, Queen-square, W.C. Telephone, 4594 Central.

The Harrington Masseurs and Male NURSES ASSOCIATION provide fully certificated, hospital-trained, well-educated MASSEURS and MALE NURSES. Patients visited for Massage, Electrical, Swedish and Nauheim Treatment, Catheterisation. All arrangements for Electrical Baths.

Neurasthenia, Mental, Dipsomania, Surgical, Medical, and Nervous cases; London, Country, and Travelling.
H. M. S., 10, Harrington-street, Regent's Park, London, N.W.
Telephone: "North 885." Telegrams: "Wakefully, London."

LEEDS TRAINED NURSES' INSTITUTION,

FOR TRAINED NURSES, MEDICAL, SURGICAL, MONTHLY, AND MASSEUSES.

Apply to the Superintendent, 21, Hyde-terrace, Leeds.
Telegraphic Address—"Expert, Leeds." Telephone 177.

MALE NURSES.

ARMY & NAVY MALE NURSES' CO-OPERATION.

Patroness—HER MAJESTY THE QUEEN.

The above Institution SUPPLIES Fully Trained Certificated MALE NURSES (Medical, Surgical, or Mental), TRAVELLING ATTENDANTS, MASSEURS, &c.

Address, SECRETARY, 47B, WELBECK STREET, LONDON, W.

The Co-operation is established to afford employment to Army and Navy Male Nurses of good character, and to secure for them the full remuneration for their work.

The Committee has taken the greatest care in the selection of candidates before placing them on the Register.

Telegrams: "RESTORING, LONDON." Telephone: No. 2534 Mayfair.

THE LONDON ASSOCIATION OF NURSES,

LIMITED,
123, NEW BOND STREET, W.

Hospital Trained Nurses, experienced in Private Nursing, can be obtained immediately for Medical, Surgical, Maternity, Mental, Massage, Fever, and all Infectious Cases. Also Male Nurses and Masseurs.

Nurses receive their own fees, less commission for working expenses, and any surplus is divided amongst them at the close of each financial year. They are fully insured by the Association under the Employers' Liability Act of 1906.

Apply, LADY SUPERINTENDENT.

Telegraphic Address—"Firth's Association. London." Telephone—1855 Gerrard.

MALE NURSES' ASSOCIATION

23, YORK PLACE,
BAKER STREET, W.
NURSES FULLY INSURED. [*Registered.*

Well trained MALE NURSES, and Certificated MASSEURS, supplied at shortest notice day or night.

W. GUTTERIDGE, *Superintendent.*

Telegrams: "Assistiamo, London." Telephone: 2437 Paddington.

ST. LUKE'S HOSPITAL, OLD ST. LONDON.

TRAINED NURSES

or MENTAL, NERVOUS, and MASSAGE CASES can be had immediately. Apply Matron. Telegrams, "Envoy, London." Telephone, 5608 Central.

GENERAL NURSING ASSOCIATION.

5 Mandeville Place,
Manchester Square.

ESTABLISHED 1862 at Henrietta Street, Covent Garden.

Thoroughly experienced Hospital-trained NURSES supplied at a moment's notice, being resident in the Home.

Also, specially trained NURSES for Mental and Nerve Cases. Worked under the system of Co-operation.

Apply to the SUPERINTENDENT.

Telegrams: "Nntrix, London." Telephone, 55 Paddington.

THE NURSES' CO-OPERATION

8, New Cavendish St., Portland Place, W.

NURSES CO-OPERATION · LONDON ·

Founded 1891. Incorporated 1894.

Established to secure to Nurses the full remuneration for their work and to supply

FULLY TRAINED HOSPITAL
Medical,
Surgical,
Mental,
Maternity,
Fever,
Children's
Massage,
} NURSES

To Work under Medical Supervision.

Telegraphic address: "Aprons, London."
Telephone, 2724 Gerrard & 7547 Gerrard.

The Nurses are fully insured by the Co-operation under the Employers' Liability Act of 1906.

Mrs. LUCAS, Lady Superintendent.

TEMPERANCE MALE NURSES CO-OPERATION

LONDON: 43 NEW CAVENDISH STREET, W.
MANCHESTER: 176 OXFORD ROAD.
GLASGOW: 28 WINDSOR TERRACE.

TELEPHONES:
London: 1472 Paddington.
Manchester: 5213 Central,
Glasgow: { 949 Charing X. (Nat.) / 477 Central (P.O.)

TELEGRAMS:
Tactear, London.
Tactear, Manchester.
Surgical, Glasgow.

Superior trained Male Nurses for Medical, Surgical, Mental Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day or Night. Skilled Masseurs and good Valet Attendants supplied.

Terms from £1 16 6. M. D. GOLD, Secretary.

The Nurses are fully insured against accident.

THE
TEMPERANCE MALE AND FEMALE NURSES' CO-OPERATION, 45, Beaumont Street, London, W.
Telegrams—"Abstain," London. Telephone—606 Paddington.

Supplies Nurses for Medical, Surgical, Mental, Fever, Maternity, and Massage Cases, Day or Night. Fees from £1 12s. to £3 3s. *The Nurses are insured against accidents* Apply, G. GORDON, or Lady Superintendent.

METROPOLITAN TEMPERANCE ASSOC.
94, GEORGE STREET, PORTMAN SQUARE, W.

Hospital-trained Male and Female Nurses supplied immediately for Mental, Medical, Surgical, Dipsomania, Travelling, Maternity, and Fever Cases. Fees from £1 11s. 6d. Nurses receive their own fees. Also Certificated Masseurs and Masseuses supplied. Male Nurses reside on the premises always prepared for urgent cases. Nurses fully insured.
Telegrams: "DESIDERATUM, LONDON." Telephone: 2330 PADDINGTON. Apply, Lady Superintendent, or W. G. FENTON, Sec.

MALE NURSES' (TEMPERANCE) CO-OPERATION, LIMITED.
Incorporated under the Companies Acts, 1862 to 1900.

Only Addresses { LONDON: 10, THAYER STREET, MANCHESTER SQUARE, W.
MANCHESTER: 235, Brunswick Street (facing Owens College). EDINBURGH: 7, Torphichen Street

Superior Trained MALE NURSES for Medical, Surgical, Mental, Dipsomania, Fever, and Travelling Cases supplied at a moment's notice, Day or Night. Skilled MASSEURS supplied. Terms £1 16s. 6d. to £2 2s. and upwards. Nurses to receive their own fees.

ALL NURSES ARE INSURED AGAINST ACCIDENTS.

TELEPHONES { (LONDON)—538 PADDINGTON. / (MANCHESTER)—4699 CENTRAL. / (EDINBURGH)—2715 CENTRAL.
TELEGRAMS { "ASSUAGED, LONDON." / "ASSUAGED, MANCHESTER." / "ASSUAGED, EDINBURGH."

W. WALSHE, *Secretary.*

INEBRIETY, DRUGS, etc.
TOWER HOUSE, AVENUE ROAD, LEICESTER
PRIVATE HOME for LADIES (Established 1864).
MEDICAL ATTENDANT: A. V. CLARKE, M.A., M.D.Cantab.
EXCELLENT MEDICAL REFERENCES. SATISFACTORY RESULTS.
Apply to Mrs. MILLS. Telegrams: "Theobald, Leicester."

NORTHLANDS RETREAT.
"Elmhurst," 20, Bolingbroke Grove, Wandsworth Common, S.W.
PRIVATE LICENSED HOME FOR LADIES SUFFERING FROM INEBRIETY
Large detached house, charmingly situated, facing the Common. Sanitary arrangements perfect and modern.
Excellent Medical references.
Licensees: JOHN ROUND, L.R.C.P. & S., and the MISSES ROUND

INEBRIETY.
MELBOURNE HOUSE, LEICESTER.
PRIVATE HOME FOR LADIES.
Medical Attendant: ROBERT SEVESTRE, M.A., M.D.Cantab.
Principal: H. M. RILEY, Assoc. Soc. Study of Inebriety.
Thirty years' Experience. Excellent Medical References.
For Terms and Particulars apply Miss RILEY or PRINCIPAL.
Telegrams: "MEDICAL, LEICESTER." Nat. Telephone: 769.

INEBRIETY.
DALRYMPLE HOUSE,
RICKMANSWORTH, HERTS.
For the treatment of Gentlemen under the Act and privately. Terms 2 to 4 guineas weekly. Six acres charming grounds on the bank of the river Colne. Tennis, croquet, billiards, concert room, workshops, photographic studio, &c. Telephone: 16 P.O.
Apply to F. S. D. HOGG, Resident Medical Superintendent.

OSEA ISLAND
FOR
INEBRIETY
Or ABUSE of DRUGS.

Island Estate nearly four miles round. No public-houses. Full liberty. Bracing air. Boating. Billiards, Badminton. Fishing. Golf. Gardening. Sea Bathing, &c.
Physician: Dr. EWENS.
Ladies and Gentlemen taken as Private Patients. Terms 3 to 5 guineas inclusive.

Apply, F. N. CHARRINGTON, Esq.,
OSEA ISLAND,
HEYBRIDGE, ESSEX.

ILLUSTRATED GUIDE SENT TO INQUIRERS.
Patients at £2 in Island Village.

EPILEPSY.
The David Lewis Colony, recently erected solely for the benefit of sane epileptics, stands in its own grounds of 113 acres, is situated at Warford in a beautiful part of Cheshire, two and a half miles from Alderley Edge Station, and fourteen miles from Manchester. Electric light throughout. Perfect sanitation.

The Colony system ensures for epileptics the social life and employment best suited to their needs.

Terms, for middle and uppér class patients, from 30s. a week upwards, according to accommodation and requirements.

For further information apply to the Director, Dr. McDougall, Warford, near Alderley Edge, Cheshire.

NEWLANDS HOUSE,

TOOTING BEC ROAD, TOOTING, S.W.

National Telephone—STREATHAM 524.

A HOME FOR THE CARE AND TREATMENT OF GENTLEMEN MENTALLY AFFLICTED.

The House stands in extensive grounds adjoining Tooting Bec Common, and is within a mile of Balham Station. For terms and further particulars apply to A. H. SUTHERLAND, or to the Resident Medical Superintendent, HENRY J. HIND, M.R.C.S.

OTTO HOUSE,

47, NORTH END ROAD, WEST KENSINGTON, W

National Telephone—HAMMERSMITH 1004.

A HOME FOR THE CARE AND TREATMENT OF LADIES MENTALLY AFFLICTED.

The House stands in large grounds, close to West Kensington Station. For terms and further particulars apply to A. H. SUTHERLAND, or to Mrs. CHAPMAN (Resident Lady Superintendent).

THE WARNEFORD, OXFORD,

HOSPITAL FOR MENTAL DISORDERS.

President: The Right Hon. the EARL OF JERSEY.

This Registered Hospital, for the Treatment and Care, at moderate charges, of Mental Patients belonging to the educated classes, stands in a healthy and pleasant situation on Headington Hill, near Oxford. The grounds and gardens are extensive, the internal appointments are comfortable and refined, and the premises are lighted by electricity. The utmost degree of liberty, consistent with safety, is allowed to the patients, and amusements and occupation are amply provided. Parties are sent for change, to the seaside during summer. Voluntary boarders are also received for treatment.—For further particulars apply to the Medical Superintendent, Dr. NEIL.

MIDDLETON HALL,

MIDDLETON ST. GEORGE, near DARLINGTON,

CO. DURHAM.

PRIVATE HOUSE FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN SUFFERING FROM MENTAL DISEASES.

This House, which is situated in a healthy and pleasant country, has been recently erected from plans approved by the Commissioners in Lunacy, and has been comfortably furnished throughout. Private rooms and special attendants are provided if required.

Terms to be had on application to L. HARRIS LISTON, M.D., Medical Superintendent.

BISHOPSTONE HOUSE, BEDFORD.

Telephone 0708.

Home for Care and Treatment of Ten LADIES only, suffering from Mental or Nervous Disorders. The number of patients being limited, their surroundings can be made absolutely home-like, and they enjoy more individual attention than is possible in a large institution.

Excellent train service; one hour from St. Pancras.

Terms from 3½ gns. a week, according to requirements.

For further particulars apply to Mrs. PEELE, Res. Licensee, or H. SKELDING, Esq., M.B., M.R.C.S., Medical Officer.

ASHWOOD HOUSE, KINGSWINFORD, STAFFORDSHIRE.

An old-established and modernised Institution for the Medical Treatment of Ladies and Gentlemen mentally Afflicted.

The House, pleasantly situated, stands in picturesque grounds of forty acres in extent, with a surrounding country noted for the beauty of its walks and drives. The climate is genial and bracing. Occupation, in-door and out-door amusements, and carriage and other exercise amply provided.

Terms range from 3 to 7 guineas per week, inclusive, according to requirements as to accommodation, special attendance, &c.

Railway Stations: Stourbridge Junction (G.W.R.), 3½ miles; Dudley (L. & N.W.R.), 4 miles; Wolverhampton (G.W.R. or L. & N.W.R.), 7 miles. Intending visitors can be met at any of these stations.

For further particulars apply to the Medical Superintendent.

CAMBERWELL HOUSE,

33, PECKHAM ROAD, LONDON, S.E.

Telephone No., Hop. 1037. Telegrams, "PSYCHOLIA, LONDON."

For the Care and Treatment of those of both Sexes suffering from Nervous and Mental Disorders.

Consists of separate Houses, lit by electricity and completely modernized, standing in twenty acres of picturesque grounds, including cricket and football field, tennis courts and croquet lawns. The Terrace Houses are quite separate from the rest of the Institution, and are specially adapted for the reception of mild or borderland cases, who can enter voluntarily.

The ordinary terms are 2 guineas a week. Patients can have separate sitting and bed rooms, with a special nurse, as well as the use of the general rooms, and a change to the seaside annexe at Bighton.

For further particulars apply to the MEDICAL SUPERINTENDENT at the above address.

THE GRANGE, Near ROTHERHAM.

A HOUSE licensed for the reception of a limited number of ladies of unsound mind. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, five miles from Sheffield. Station, Grange Lane, G.C. Railway, Sheffield. Telephone No. 34 Rotherham.

Resident Physician—GILBERT E. MOULD, L.R.C.P., M.R.C.S. Consulting Physician—CROCHLEY CLAPHAM, M.D., F.R.C.P.E.

CLARENCE LODGE

(Telephone: 494 Brixton),

CLARENCE ROAD, CLAPHAM PARK.

Stations: Clapham Road and Clapham Common.

A limited number of Ladies suffering from **Mental** and **Nervous Disorders** received for Treatment under a Specialist.

Gardens of 4½ acres, tennis and croquet lawns, and winter garden. House at Felixstowe for holiday parties.

Illustrated Prospectus from Resident Licensee, Mrs. FLORENCE THWAITES, B.A.

HEIGHAM HALL, NORWICH.

Telephone ***For the Upper Classes only.*** 80 Norwich.

A Home for Ladies and Gentlemen suffering from Nervous and Mental Diseases. Extensive pleasure grounds. Private Suites of Rooms with Special Attendants available. Boarders taken without certificates. French Chef. Terms from 2 to 20 guineas weekly. Nurses sent for Patients.

J. G. GORDON MUNN, M.D., F.R.S.E., Proprietor and Res. Phys.

Telephone— 5608 CENTRAL. *Telegraphic Address—* "ENVOY, LONDON."

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES (200 Beds),

OLD STREET, LONDON.

(ESTABLISHED 1751.)

Admission gratuitous; or, by contribution to maintenance, from 15s. to 30s. per week.

CONVALESCENT HOME at Ramsgate. Voluntary Boarders (Ladies) are received at the Home without certificates.

TRAINED NURSES immediately obtained from the Hospital for Mental, Nervous, and Massage Cases.

Full particulars on application to the Secretary at the Hospital.

KINGSDOWN HOUSE,

BOX, near BATH.

Telephone—No. 2, Box.

Licensed for the Treatment of Diseases of the Brain and Nervous System.

Terms moderate, for which apply to Dr. MACBRYAN, at the above, or No. 2, Bladud Buildings, Bath.

Visiting Physician:—Dr. J. F. WOODS, 7, Harley-street, London, W.

THE RETREAT, YORK.

TRAINED NURSES' DEPARTMENT.

Staffed by Nurses who have been trained for four years in the Retreat, and conducted upon a profit-sharing basis. Mental and Nervous cases only undertaken. **Terms 2 guineas weekly.**

Apply, MATRON, Retreat, York. *Nat. Tel. 112.*

CHEADLE ROYAL.

HOSPITAL FOR MENTAL DISEASES

CHEADLE, CHESHIRE.

This Hospital is in a retired part of the county, nine miles from Manchester and two miles from Cheadle and Cheadle Hulme Stations, L. & N. W. Railway and Cheshire Lines.

The object of the Institution is to provide the most efficient means for the cure of mental diseases in those who belong to the upper and middle classes of society.

Many of the patients reside outside the Hospital in villas, in no way differing from ordinary dwelling houses in their internal arrangements and general surroundings, some of them being situated in the immediate neighbourhood and some on the Welsh Coast. These establishments give considerable opportunity for change of scene and locality, and the patients are in this way benefited in a very marked degree.

Voluntary Boarders are also admitted for treatment.

Arrangements are made when desired for patients to have private rooms or villas, and their own attendants, horses and carriages.

For terms and further information apply to the Medical Superintendent, W. SCOWCROFT, M.R.C.S., &c., at Cheadle, or he may be seen at 72, Bridge-street, Manchester, on Tuesdays from 12 to 3, and Fridays from 2 to 3. Telephone: 208 "Cheadle Hulme," 3594 "Manchester."

WONFORD HOUSE,
HOSPITAL FOR THE INSANE, near EXETER.

REGISTERED HOSPITAL FOR THE UPPER AND MIDDLE CLASSES.

This Institution is situated in a beautiful and healthy locality, within short distance of the City of Exeter.

There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea air and a mild salubrious climate.

Private Rooms and Special Attendants provided, if required.

Voluntary Patients or Boarders also received without certificates.

For terms, &c., apply to

W. B. MORTON, M.D.Lond.,
Resident Medical Superintendent.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.

Provision for PRIVATE PATIENTS has just been provided in two detached Villas.

Inclusive charges from £1 11s. 6d. per week.

Apply to the Medical Superintendent.

THE MOAT HOUSE,

TAMWORTH, STAFFORDSHIRE.

A HOME for NERVOUS and MENTAL CASES. Stations: L. & N. West. and Mid. Railways.

The House stands in grounds of ten acres (within 5 minutes' drive of either station) and is devoted to the care and treatment of a few Ladies suffering from Nervous and Mental Affections, who enjoy the comfort, privacy, and occupations of home life. Voluntary patients are received without certificates. For terms, &c., apply to the Resident Proprietor, E. HOLLINS, M.A.Camb., J.P.

Barnwood House Hospital for

MENTAL DISEASES, Barnwood, near Gloucester. Exclusively for Private Patients of the Upper and Middle Classes. This institution is devoted to the Care and Treatment of persons of both sexes at moderate rates of payment. The terms vary according to the requirements of the patients, who can have private rooms and special attendants, or be accommodated in Detached Villas and in the Branch Convalescent Establishment on the hills. Under special circumstances the rates of payments may be greatly reduced by the Committee. For further information apply to J. G. SOUTAR, M.B., the Med. Supt.

STRETTON HOUSE,

Church-Stretton, Shropshire.

A Private HOME for the treatment of Gentlemen suffering from Mental Diseases. Bracing hill country. See "Medical Directory," p. 1953. Apply to Medical Superintendent. Telephone: 10, P.O. Church-Stretton

BARNSLEY HALL,

BROMSGROVE.

MENTAL PRIVATE PATIENTS of both sexes are received in connexion with the new Asylum for the County of Worcester.

Extensive private grounds in the beautiful Lickey district.

For further particulars and necessary forms apply to the Medical Superintendent Terms, one guinea weekly.

SPRINGFIELD HOUSE,

Near BEDFORD.

(Telephone No. 17.)

A PRIVATE ASYLUM for Mental Cases, established in 1837, surrounded by extensive grounds, reconstructed and modernised

Terms from 3 guineas per week

(including Separate Bedrooms for all Suitable Cases).

For forms of admission, &c., apply to DAVID BOWER, M.D., as above, or at 5, Duchess-st., Portland-pl., W., Tuesdays, from 4 to 5.

A Vacancy for a Lady and a Gentleman.

PLYMPTON HOUSE,

PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of Mental Cases.

For terms, &c., apply to the Resident Physician,

Telephone—No. 2, Plympton. Dr. ALFRED TURNER.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

President: The Right Hon. the Earl MANVERS.

This Institution is exclusively for the reception of a limited number of PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country; and from its singularly healthy position and comfortable arrangements afford every facility for the relief and cure of those mentally afflicted.

For terms, &c., apply to Dr. TATE, Medical Superintendent.

ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES, NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President—The Right Hon. the EARL SPENCER, K.G.

This Institution is a Registered Hospital under the Lunacy Act for the reception of private patients of the Upper and Middle Classes only, **and is in no way connected with a County or Borough Asylum in which Pauper Patients are received.**

It is pleasantly situated, and is surrounded by more than 100 acres of park and pleasure grounds.

Terms from 31s. 6d. a week, according to the requirements of the case.

Patients paying higher rates can have Special Attendants, Horses and Carriages, and Private Rooms in the Hospital; or at Moulton Park, a Branch Establishment two miles from the Hospital.

The terms may be reduced in suitable cases on application to the Governors on printed forms supplied.

For further particulars apply to the Medical Superintendent.

BRYN-Y-NEUADD HALL, LLANFAIRFECHAN

The Seaside House of St. Andrew's Hospital.

The Hall is beautifully situated in a park of 280 acres close to the sea, and in the midst of the finest scenery in North Wales.

Patients belonging to the Hospital (or Boarders) may go for long or short periods.

For further particulars apply to the Medical Superintendent, St. Andrew's Hospital, Northampton.

Telegraphic Address: "Relief, Old-Catton." Telephone: "290 Norwich."

NERVOUS & MENTAL AFFECTIONS.

Ladies only received.

The Grove, Old Catton, near Norwich.

A **High-class Home** for the **Curative Treatment** of Nervous Affections. Situated a mile from the City of Norwich. **Special** and **Separate** accommodation is provided for those suffering from **Hysteria** and for cases of **Incipient Mental** trouble, who can be received as **Voluntary Boarders** without certificates and occupy their own private suites of apartments. A staff of experienced nurses has been organised to take charge of patients in their own homes. For terms, &c., which are moderate and inclusive, apply to the Misses MCLINTOCK, or to CECIL A. P. OSBURNE, F.R.C.S.E., &c., Medical Superintendent.

MALLING PLACE, KENT.

For LADIES and GENTLEMEN of Unsound Mind.

Terms moderate. Apply to Resident Medical Superintendent.

Telegrams: ADAM, WEST MALLING.
Telephone: No. 2 MALLING.

Grove House, All Stretton, Church

STRETTON, SHROPSHIRE.

A PRIVATE HOME for the Care and Treatment of a limited number of Ladies Mentally afflicted.

Climate healthy and bracing.

Apply to Dr. McClintock, Proprietor and Resident Medical Superintendent.

WYE HOUSE, BUXTON.

ESTABLISHED 1857. *NEW INSTITUTION COMPLETED* 1901.

FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN MENTALLY AFFLICTED.

VOLUNTARY BOARDERS CAN BE RECEIVED.

Situated 1200 feet above sea level. Facing south, sheltered from north and east. 14 acres grounds, tennis, croquet, golf, curling, Billiard rooms, theatre, workshop in house. Motor-car drives. Garage. Ten minutes from Pavilion Gardens, Baths, and L. & N.W. and Mid. stations. Seaside Branch in N. Wales.

For terms, &c., apply to the Res. Medical Superintendent.

GRAEME DICKSON, L.R.C.P., &c. [NAT. TEL. 130.

COURT HALL,

KENTON, near EXETER.

PRIVATE COUNTRY HOUSE FOR LADIES SUFFERING FROM MENTAL DISEASES.

UNDER SUPERVISION OF
H.M. COMMISSIONERS IN LUNACY.

Established 40 years. Limited to eight patients.

Resident Licensee—BERTHA M. MULES, M.D

Station, Starcross, G.W.R., 1½ miles.

HAYDOCK LODGE, Newton-le-Willows, LANCASHIRE.

A PRIVATE MENTAL HOSPITAL for the UPPER and MIDDLE CLASSES ONLY, EITHER VOLUNTARY or UNDER CERTIFICATE.

Patients treated and classified according to their social and mental condition. Terms from **31s. 6d.** Private apartments on special terms. Established for 60 years. Recovery rate 50 per cent. Situated midway between MANCHESTER and LIVERPOOL. Two miles from Newton-le-Willows Station on the L. & N.W. Railway. Having associated with it establishments at MARSDEN HALL, near Nelson; OVERDALE, near Manchester; and GRETA BANK, a Nursing Home near Ingleton for the Treatment of **Borderland** Cases, **Alcoholics**, or the **Drug Habit**.

Medical Staff—

Resident Medical Proprietor	CHARLES T. STREET, M.R.C.S., L.R.C.P.
Resident Medical Superintendent	A. E. CHAMBERS, M.R.C.S., L.R.C.P.
Resident Assistant Medical Officer	A. BUTLER, L R.C.S. & L.R C.P.I.
Medical Licensee and Superintendent—Overdale and Marsden	P. G. MOULD, M.R.C.S., L.R.C.P., late A.M.O., Cheadle Royal Hospital.

Consulting Rooms—

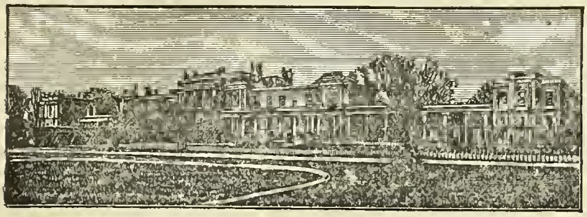
LIVERPOOL:	MANCHESTER:
47, Rodney Street.	Winter's Buildings, St. Ann's St.
Dr. STREET.	Dr. P. G. MOULD; Dr. G. E. MOULD.
Thursday, 2 till 4.	Tuesday—12 to 1.30—Thursday.
Telephone 2456 Royal.	Telephone 7611 Manchester.

Other days by appointment.

Visiting and Consulting Physicians: Sir JAMES BARR, LL.D., M.D., F.R.C.P., 72, Rodney St., Liverpool. NATHAN RAW, M.D., M.R.C.P., 66, Rodney St., Liverpool. G. E. MOULD, Physician for Mental Diseases to the Sheffield Royal Hospital, The Grange, Rotherham.

For further particulars and forms of admission apply Resident Proprietor, Haydock Lodge, Newton-le-Willows.

Telegraphic Address: "STREET, Ashton-in-Makerfield." Telephone: 11 Ashton-in Makerfield.



NORTHWOODS HOUSE,

WINTERBOURNE, near BRISTOL.

FOR PRIVATE TREATMENT OF MENTAL DISEASES.

Situated in a large park in a healthy and picturesque locality, easily accessible by rail via Bristol, Winterbourne, Patchway, or Yate Stations. Uncertified Boarders received.—For further information see Medical Directory, page 2031. Terms moderate.

Apply to Dr. R. EAGER or Dr. J. D. THOMAS, Resident Physicians and Licensees, for full particulars.

PECKHAM HOUSE,

Telegrams: "Alleviated, London."

112, PECKHAM ROAD, LONDON, S.E.

Telephone: 1576 Hop.

An Institution licensed for the CARE and TREATMENT of those MENTALLY AFFLICTED of Both Sexes. Private Patients only received. Gardens cover many acres of ground. Conveniently situated. Electric trams and omnibuses from the Bridges and West-End pass the door. Moderate terms.—Apply to Medical Superintendent for further particulars.

NORTHUMBERLAND HOUSE.

Telegrams: "SUBSIDIARY, LONDON."

GREEN LANES, FINSBURY PARK, N.

(Established 1814.)

Telephone: No. 888, North.

A PRIVATE HOME for the Care and Treatment of Ladies and Gentlemen Mentally Afflicted. Four miles from Charing Cross; easy of access from all parts; a quarter of an hour's walk from Finsbury Park Station, G.N.R., from which Trams pass the gates.

Six acres of ground, highly situated, facing Finsbury Park.

Private Villas in suites of rooms. Terms from 2½ guineas upwards according to the accommodation provided.

For further particulars apply to the RESIDENT PHYSICIAN.

NEWMAINS RETREAT, NEWMAINS, LANARKSHIRE.

Licensed under the Inebriates Acts.

The House is devoted to the Care of LADIES of the upper classes only, who can be treated either under the Acts or as Voluntary Patients. The place stands high and the estate is extensive, with bracing air and in good shelter. It is very retired and beautiful, well suited for the treatment of inebriety, narcomania and other perversions, neurasthenia, hysteria, epilepsy, and minor mental ailments.

No patients under certificate of insanity can be received.

References: Dr. CLOUSTON, Dr. YELLOWLEES, Dr. RISIEN RUSSELL, and others.

Terms and particulars on application to "Superintendent, The Retreat, Newmains, N.B." Nearest station, Hartwood, Cal. Rly.

BUNTINGFORD HOUSE RETREAT AND SANATORIUM,

BUNTINGFORD, HERTS.

For Gentlemen suffering from Alcohol and Drug Inebriety; also for Gentlemen Convalescing after Illness. In a most healthy part of the country; 10½ acres of grounds; about 350 feet above sea level. Electric Light throughout from private installation. Golf, Cricket, Tennis, Library, Billiards Photographic Dark Room, Gardening, Carpenter's Shop, Poultry, &c. Quarter mile from Station, G.E.R.

Two Resident Physicians.

No Infections or Consumptive Cases taken. Inebriety Patients are admitted voluntarily only, either privately or under the Inebriates Acts.

Terms 2 to 3 Guineas. *Telephone:* P.O. 3, BUNTINGFORD. *Telegraphic Address:* "RESIDENT, BUNTINGFORD."

NORWOOD SANATORIUM,

REMOVED TO

THE MANSION, BECKENHAM PARK, KENT.

UNDER A COMMITTEE OF WELL-KNOWN MEDICAL MEN whose names will be supplied to any Member of the Profession on application to the Resident Medical Superintendent. The object is to apply to the treatment of Alcoholic and Drug Inebriety all available knowledge, and, by accurate observation and record of cases, to extend that knowledge, and place the therapeutics of Inebriety upon a definite scientific basis. The treatment is of such a nature that the restrictions common to Retreats need not be enforced. In many cases a residence of six weeks is sufficient. The Sanatorium consists of a large family mansion, recently re-decorated and brought up-to-date in all respects. It is situated in a large and beautifully wooded private park in near proximity to London. All information to be obtained from the Resident Medical Superintendent. Consultations at 14, Stratford-place, W. (opposite Bond-street Tube Station), on Mondays and Thursdays *by appointment.*

Telegrams: "NOROTORIUM, LONDON." Resident Medical Superintendent: FRANCIS HARE, M.D. *Telephone:* 648 BROMLEY.

THE ALCOHOL AND DRUG HABITS AND INSOMNIA.

THE GHYLL RETREAT (LICENSED UNDER THE INEBRIATES ACTS), nr. COCKERMOUTH, CUMBERLAND.

FOR GENTLEMEN ONLY.

Patients are here treated individually, and on a sound scientific basis, with the object of building up the general health, strengthening the will power, and educating the mind to an adverse attitude towards alcohol and drugs. By their own and their friends' desire patients can receive treatment by *Hypnotic Suggestion*, a treatment now fully recognised as of the greatest value in the treatment of the above habits and of chronic insomnia, more especially when taken together with the ordinary Retreat regime, and, in skilled hands, entirely devoid of danger.

The situation of the house, in the heart of the Lake District, nine miles from the nearest town and railway station, is unique in its suitability of this work, its isolation making close confinement quite unnecessary in the vast majority of cases. Out-door and in-door sports and occupations, including trout-fishing on own waters, golf (private 9-hole course), tennis, &c. Workshop and dark-room are provided for carpentry, carving, photography, &c., while the house contains a billiard table and a large library is subscribed to.

References can be given to well-known Medical Men in London and the provinces. Terms from £3 3s., according to accommodation.

Full particulars on application to J. W. ASTLEY COOPER, L.R.C.P., &c., Licensee and Medical Superintendent.

Telegraphic Address: "AQUA, BUTTERMERE."

PLÂS-YN-DINAS,

DINAS MAWDDWY, MERIONETH.

LICENSED UNDER THE INEBRIATES ACTS.

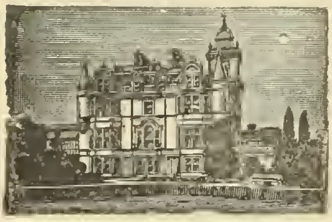
This Retreat is the only one in the British Isles where it is made a *sine quâ non* that every patient entering it must be a gentleman of good social status, and in its structure, freedom from temptation, isolation, and extent of *well-preserved* sporting property of 25,000 acres, is unrivalled in every way. It includes 8000 acres of grouse moors, large pheasant coverts, enclosed rabbit warren, and many miles of fishing, including salmon, sewin and trout.

The residence is a modern one with 27 bedrooms and seven bathrooms. Lawn tennis, private golf links, bowls, dark rooms for photography, billiard room and library are provided.

The most recent scientific remedies, including High-pressure Static and Faradaic Electricity, are in force, and all patients' cases are treated individually.

References to Dr. SAVAGE, Dr. FERRIER, and all leading physicians.

Terms from £4 4 0 a week. *Address, Dr. W. F. WALKER, J.P., as above.*



Alcohol and Drug Inebriety and Neurasthenia.

INVERNITH LODGE, COLINSBURGH, FIFE, SCOTLAND.

(Licensed under the Inebriates Acts.) FOR GENTLEMEN ONLY.

Inebriety and Narcomania are treated on definite medical lines, and the most approved scientific means are employed in the curative treatment. Every effort is made to secure reliable therapeutic results and careful records are kept. The Resident Medical Superintendent has each patient under his personal care and observation, and constant attention is given to inducing a proper attitude towards the exciting cause. The curative treatment is much aided by the healthy situation of the Sanatorium and by its isolation from temptation. The Sanatorium stands 450 feet above the sea, faces south, and looks out over the Firth of Forth. The climate is dry and bracing. All out-door and in-door sports. First-class private golf course. Shooting over 800 acres, fishing, tennis, gardening, carpentry, &c. Billiard room (two tables), music room, large private library. References to leading physicians in the chief centres given on application.—For all particulars apply to W. H. BRYCE, M.B., C.M., Res. Med. Supt. and Licensee; J. Q. DONALD, L.R.C.P. & S.Edin., Joint Licensee. *Teleg.:* "Salubrious," Upper Largo. *Teleph.:* 8 Upper Largo. Station, Kilconquhar (N.B.Ry.)

YARROW CONVALESCENT HOME, BROADSTAIRS.

FOR CHILDREN OF REFINED PARENTS OF LIMITED MEANS.

100 Beds. Boys, ages 4 to 12. Girls, ages 4 to 14.

A Charge of 5s. per week for each child.

Two wards are reserved for serious cases requiring special treatment. In these wards the age limit may be extended to 14 years for Boys and 16 years for Girls.

The Home is equally adapted for residence in winter as in summer and is situated in 12 acres of well-sheltered grounds, with playing-fields facing the sea.

Full particulars obtainable from T. FREDK. MYERS, Secretary, at the London Office, 6, Holborn Viaduct, E.C.

LONDON OPEN-AIR SANATORIUM

PINEWOOD, NINE MILE RIDE, near WOKINGHAM, BERKS.

Telephone No. 34 Crowthorne.

For the Treatment of Pulmonary Tuberculosis.

Situated in its grounds of 82 acres of Pine Forest. Specially built with every essential of hygiene and comfort. Each Patient has a separate bedroom facing south with electric light. Two Resident Medical Officers.

Terms: £3 : 3 : 0 per week.

This Sanatorium was opened in 1901 for the treatment of cases of Consumption among the educated middle-classes. It is the free and generous gift of a few philanthropists, and is held in trust by the "LONDON OPEN-AIR SANATORIUM," an Association licensed by the Board of Trade and not carried on for the sake of profit or gain. It is managed by an Honorary Committee, four of whom are Members of the Executive Council of the National Association for the Prevention of Consumption. For particulars apply to the SECRETARY, LONDON OPEN-AIR SANATORIUM, 20, Hanover-square, London, W.

Suitable cases will be admitted immediately.

CROOKSBURY SANATORIUM

FOR THE OPEN AIR TREATMENT OF CONSUMPTION.

Specially designed, built, and equipped on carefully chosen ground. Sheltered from east, north, and west on a sunny southern slope, over 400 ft. above sea level. Large grounds covered with pine woods and heather, with beautiful distant views. Full staff of Nurses. Electric lighting. A few chalets and special block for slight cases and convalescent. Apply to Dr. F. RUFENACHT WALTERS, Farnham, Surrey.

Reg. Tel. Address: "Sanatorium, Farnham."

NORDRACH-UPON-MENDIP SANATORIUM.

For the Treatment of Phthisis ON THE MENDIP HILLS.

THIS SANATORIUM was the first to be established in England for carrying out treatment on the lines of Dr. OTTO WALTHER, of Nordrach, Germany, with whom Dr. Thurnam resided for two years. It stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorlands. There are 38 patients' bedrooms, heated by hot water pipes and lighted by electricity. Opened January, 1899.

Resident Physician—ROWLAND THURNAM M.D.

Terms from 3 to 5 guineas weekly, according to size and position of room.

For full particulars apply to THE SECRETARY, Nordrach-upon-Mendip, Blagdon, near Bristol. *Telegrams: "NORDRACH, BLAGDON."*

VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the Treatment of Pulmonary and other forms of Tuberculosis as carried out by Dr. OTTO WALTHER of Nordrach. It is situated in the midst of a large area of park land at a height of 450 ft. above the sea level, and commands extensive views of the Vale of Clwyd. It has a bracing climate, with a small rainfall and a large amount of sunshine. It is well sheltered on the N. and E. by mountains rising to 1800 ft., which afford facilities for a great variety of uphill walks. Electric Lighting.

The Physicians are fully conversant with Dr. WALTHER's Treatment, having themselves been patients at Nordrach.

For particulars apply to CECIL E. FISH, B.A., M.B., B.C., M.R.C.S., L.R.C.P., or GEO. A. CRACE-CALVERT, M.B., M.R.C.S., L.R.C.P., Llanbedr Hall, Ruthin, North Wales.

NORDRACH-ON-DEE (NEAR BALMORAL, SCOTLAND).

Open-Air Treatment of CONSUMPTION and Allied Diseases.

INOCULATION TREATMENT regulated by SYSTEMATIC estimations of the OPSONIC INDEX is available for all patients residing in this Sanatorium.

Research Laboratory. Fully Equipped Throat Room. Dental Room. Roentgen Ray and Ultra Violet Light Installations.

Address: Dr. LAWSON,
Banchory, N.B.

THE HOME SANATORIUM,

WEST SOUTHBOURNE, NEAR BOURNEMOUTH.

150 feet above sea level. Ten acres beautiful grounds. Experienced Matron and full Nursing Staff, including Night Nurse.

Charges from 3 to 5 Guineas Weekly.

For full particulars apply to J. E. ESSLEMONT, M.B., Ch.B., Resident Superintendent.

Telegrams: "SANABILIS, BOURNEMOUTH." *Telephone:* 10Y SOUTHBOURNE.

MIDDELBURG SANATORIUM,

TRANSVAAL.

FOR TREATMENT OF PHTHISIS. 5000 feet above sea level. WAGON TRIPS to the BUSH VELDT from May to August.

Beautifully situated in well-wooded grounds, with tennis and croquet courts. Terms 4 and 5 guineas.

TWELVE HOURS' RAIL FROM DELAGOA BAY. Apply to Medical Superintendent, Box 38, MIDDELBURG, TRANSVAAL.

SANATORIUM CLAVADEL.

5500 feet above sea-level. Two miles from DAVOS-PLATZ, SWITZERLAND.

Specially built for the OPEN-AIR TREATMENT of CHEST DISEASES. Surrounded by extensive pine woods. Magnificent scenery. Bracing mountain climate. High record of sunshine. Perfect sanitary conditions. Excellent food. Trained English Nurses.

WIESBADEN

KUR ESTABLISHMENTS AND MEDICAL INSTITUTES.

Dr. Abend, Kur Establishment for Diseases of the Stomach and Intestines. Parkstrasse 30.

Dr. Amson, Medico-Mechanical Institute, Establishment for Orthopædy, Medical Gymnastics and Massage. Roentgen Ray Laboratory. Taunusstrasse 6.

Dr. Badt, Institute for the Treatment of Disturbances of Movement, especially Ataxy in Tabes and Difficulty in Walking. Taunusstrasse 4.

Dietenmühle, Kur Establishment for Nervous and Internal Diseases. Physician, **Dr. Waetzoldt.**

Dr. Otto Dornblüth, Kur Establishment for Internal and Nervous Diseases. Gartenstrasse 15.

Dr. Fendt, Institute for Roentgen and Light Treatment of Skin Diseases. Serum diagnosis of Syphilis. Friedrichstrasse 20.

Dr. R. Friedlaender's Sanatorium Friedrichshöhe for Nervous and Internal Diseases. Leberberg 14.

Dr. Guradze, Surgical and Orthopædic Private Hospital and Sanatorium, with Medico-Mechanical Institute, workrooms, and Roentgen Ray Department. Mainzerstrasse 3.

Lindenhof, Kur Establishment for Nervous and Internal Diseases. **Dr. van Meenen.** Wahlkmühlstrasse 43/45.

Dr. Lubowski, Sanatorium for Nervous and Internal Diseases. Gartenstrasse 16.

Dr. Jul. Müller, Institute for the Physical Treatment of Diseases of the Skin (Roentgen, Finsen Apparatus, Uriol, Quartz Lamp. Radium, &c.) Museumstrasse 4.

Kurhaus Bad Nerotal. Sanatorium for Nervous and Internal Diseases. Chief Physician, **Dr. Mäckler;** Consulting Physician, **Dr. Plessner.**

Dr. Schloss's Kur Establishment for Diseases of the Stomach and Intestines and for Disorders of Metabolism. Sonnenbergerstrasse 30. Formerly Dr. Plessner's Kur Establishment.

Dr. Schütz, Sanatorium Villa Panorama for Internal and Nervous Diseases, especially Disorders of Digestion and Metabolism.

Prospectuses and further information may be obtained from the Medical Officers of the various Establishments.

MARGATE

WHITE HART HOTEL

One of the comfortable Old Style of Hotels, where the quality of the food is the first consideration and not ostentation. Nearest to the sea and the only Hotel sheltered from East and N.E. winds. R.A.C., A.A., and M.U. Moderate Winter Tariff. Golf. 'Phone 44.

ABERYSTWITH

"The Biarritz of Wales"

is highly recommended for invalids. It possesses the most equable temperature, its shores being swept by the Gulf Stream and the S.W. breezes of the Atlantic. The drainage is perfect and the town is supplied with the purest water from Plynlimmon and lighted with electricity. The late Sir James Clarke, M.D., says: "A fortnight in Aberystwith is equivalent to a month's residence in most watering-places"

Guide and information can be had on application to the Town Clerk.

SMEDLEY'S

HYDROPATHIC ESTABLISHMENT,

MATLOCK. Established 1853.

Telegrams: "SMEDLEY'S, MATLOCK BANK."

Physicians: G. C. R. Harbinson, M.B., B.Ch., and Resident.

A complete suite of Baths, including separate Turkish and Russian Baths for Ladies and for Gentlemen, Aix Douches, and an Electric Installation for Baths and Medical purposes. Dowsing Radiant Heat. D'Arsonval High Frequency. Roentgen X Rays. Fango Mud Treatment. Nauheim Baths. Special provision for Invalids. Large Winter Garden. American Elevator. Electric Light. Night attendance. Rooms well ventilated, and all bedrooms warmed in winter throughout the establishment.

MASSAGE AND WEIR-MITCHELL METHODS OF TREATMENT.

A large staff (upwards of 50) of Trained Male and Female Nurses, Masseurs, and Attendants. Prospectus and full information on application to H. CHALLAND, Manager.

THE

HARROGATE HYDROPATHIC

Contains ordinary Hydropathic Appliances, and is within a few minutes walk of the famous Mineral Springs and the most complete and eclectic Therapeutical System in Britain.

Medical Superintendent—THOS. JOHNSTONE, M.D., M.R.C.S.

Assistant Physician—R. McLEOD VEITCH, M.D.

WINTER TERMS. Telephone 23. Apply, MANAGERESS.

PAINSWICK SANATORIUM,

COTSWOLD HILLS.

Specially built for OPEN-AIR TREATMENT on the Châlet system. Delightfully situated in its own grounds of 8 acres on southern slope 600 feet above sea level. Bracing hill air. Dry porous subsoil. Sheltered from north and east. Specially designed Sleeping Bungalows, Verandahs, and Revolving Shelters. Specially constructed Dining Hall. Separate Bedrooms. Electric communication between each Sleeping Châlet and rooms of Staff. Resident Physician. Trained Nurses. **Terms: Two-and-a-Half Guineas.**

Apply, WM. McCALL, M.D., Painswick, Glos.

WHITMEAD HILL SANATORIUM, NEAR FARNHAM.

Stands in 18 acres of pine and heather on a southern slope of Crooksbury Hill, well sheltered and sunny in winter. Graduated walks. Electric light. Rest-Cure Patients taken.

J. HURD-WOOD, M.D.

Terms from £2 2s. Telegrams—"Hurd-Wood, Tilford."

APPLEGARTH SANATORIUM,

OSMOTHERLEY, NORTHALLERTON, YORKSHIRE.

Is situated on a spur of the Hambleton Hills, for the treatment in moorland air of four Consumptives and two Neurasthenic or other Invalids—the former in revolving sleeping châlets, open-air dining-room, bath-room, &c.; the latter in indoor quarters, with separate and complete arrangements for each class. Specially adapted for good-class patients desiring the privacy and comforts of home-life under medical care, with good nursing by two lady nurses. Elevation 500 feet; south aspect, sheltered situation, fine views and moorland walks, abundant sunshine, splendid air, and pure moorland water.

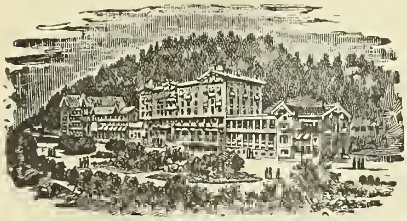
TERMS 3 TO 5 GUINEAS A WEEK.

Resident Proprietor—H. B. LUARD, M.B.Camb., F.R.C.S.

GENEVA HYDROTHERAPIC ESTABLISHMENT

in connection with the HÔTEL BEAU SEJOUR.

CHAMPEL Surrounded by large park. Bracing air and elevated position. Provides every means known to modern science for the treatment of Nervous Diseases (Neurasthenia and Nervous Debility resulting from overwork or physical exhaustion), Insomnia, Nervous Depression, Hysteria. Physicians: Dr. A W. ROEHRICH, Dr. M. EGGER. Prospectus and full information on application to the Manager Open all the Year.



ALPINE HEALTH RESORT FOR CHEST COMPLAINTS.

LEYSIN

French-speaking SWITZERLAND.
On the Simplon R'y.

5000 feet above sea level. *Open all the year round.*

Four Sanatoriums:

GRAND HOTEL	12 francs, upwards	Board and Medical Attendance.
MONTBLANC	11 ,, ,,	
CHAMOSSAIRE	9 ,, ,,	
ENGLISH SANATORIUM ...	11 ,, ,,	

SPECIAL TREATMENT for PULMONARY TUBERCULOSIS by Sanatorium Methods assisted by Alpine Atmosphere. Prospectus free on application to the Directors.

EPILEPSY—TO MEDICAL ADVISERS.

A few Vacancies in a modern house at Maghull, Lancashire, specially erected and equipped for the Treatment of Gentlemen suffering from Epilepsy. Experienced Medical and Nursing treatment. Farming, gardening, billiards, lawn tennis, cricket, bowls, &c.
Apply, W. GRISEWOOD, 2, Exchange-street East, Liverpool

ASHBROOK HALL,

Hollington, St. Leonards-on-Sea.

PRIVATE HOME FOR THE TREATMENT OF LADIES MENTALLY AFFLICTED.

Within twenty minutes of the sea, by electric tram. Founded in 1886 (and conducted till her death in 1909) by the late Mrs. LETITIA A. HITCH, widow of Dr. SAMUEL HITCH, formerly of Sandywell Park, near Cheltenham, an Institution for the Insane, and for many years Physician to the General Lunatic Asylum for the County of Gloucester.

Every care and attention given, under personal superintendence of the present licensee (niece to Mrs. HITCH and for some years co-licensee with her). There occurs a vacancy for one patient.

For particulars and terms apply to MISS ADAMS, Resident Licensee.

LEIGH HOUSE.

A new Hospital for Mental Cases has been opened for the reception of Private Patients. Terms £1 1s. 0d. per week

There are vacancies for both sexes. For particulars apply to the MEDICAL SUPERINTENDENT, HATTON ASYLUM, WARWICK.

BRUNTON HOUSE, LANCASTER.

A PRIVATE HOME FOR BACKWARD BOYS.

There are now a few Vacancies in this commodious and well-appointed private establishment. It is easily accessible from Lancaster, overlooking Morecambe Bay, the Lake Mountains, and possessing extensive gardens and grounds, which include tennis and croquet lawns. Individual attention given to the pupils by experienced staff, under a resident physician and lady matron.

Terms, &c., on application to Dr. ARCHIBALD R. DOUGLAS

LONDON FEVER HOSPITAL,

ISLINGTON, N.

PATRON—His Majesty THE KING.
PRESIDENT—The Right Hon. Lord BALFOUR of BURLEIGH, K.T

The Diseases admitted are Scarlet Fever, Diphtheria, Measles, and German Measles; also Typhoid when accommodation can be made available. The general ward fee is three guineas for the whole term of treatment. Private rooms four guineas a week. Patients who are willing to pay part at least of the cost of their illness rather than remain at home in infectious fever are encouraged to apply for admission here. 691 sufferers were treated here in 1909. No help is received from the rates by this Hospital.

Servants of Governors are treated free of charge. On application to the Secretary, with a medical certificate, a brougham ambulance will be sent. Applications can be made personally, or by letter, telegram, or telephone: 687 North. W. CHRISTIE, Secretary.

MISS GOFFE'S PRIVATE NURSING AND CONVALESCENT HOME,

2 & 3, WOODSIDE PARK GARDENS, NORTH FINCHLEY, N.

Telephone: 332 Post Office, Finchley.

Medical, Surgical, Maternity, and Chronic cases received. Comfortable Home, with skilled Nursing. Resident Masseuse.

Haslemere Nursing Home.—Patients received for Medical, Weir-Mitchell, Rest Cure, and General Nursing. Home comforts. Large garden. Certificated Nurses and Masseuses.—Apply, Misses Ringwood & Inge, "Courtsfold," Haslemere, Surrey.

The Home Nursery for Children from

Three Weeks old.
Under direct supervision of Certificated Lady Nurse.
Highest references.
Apply, Sister, Dutch Villa, Cambridge-road, Bexhill-on-Sea.

Good-class Private Home, standing in own grounds, receives Surgical, Medical, and Maternity Cases. Moderate terms. Weir-Mitchell cases successfully treated. Special terms for permanent cases. Telephone: 712 Streatham.—Apply, Lady Supt., 141, King's Avenue, Clapham Park, S.W.

ASSOCIATION OF MEDICAL MEN RECEIVING RESIDENT PATIENTS.

Any INVALID wishing to reside with a Medical Man at home or abroad should apply to Hon. Sec., 57 and 58, Chancery-lane, W.C.

Private Home for the Care, Instruction, and Training of Backward, Delicate, and Feeble-minded Children, under Medical management. Special Department for elder Girls and Boys. Resident Teachers. Home comforts. Cycling, gardening, out-door games, &c., taught. Twenty years' experience. Large secluded grounds.—Apply, Lady Superintendent or Medical Director, Woodfield, Streatham, Surrey.

Resident Patient (Mental).—A Medical Man (married, no family) in general practice has vacancy for above. Has had considerable experience of mental cases Healthy climate. House facing sea. Tennis, boating, bathing.—Apply, A. Churchill, Mevagissey, Cornwall.

Resident Patients.—List of Doctors in all parts receiving Resident Patients, with description of accommodation, terms, &c., can be had without charge from Mr. G. B. Stocker, 22, Craven-street, Strand, W.C., or selection will be made on statement of nature of case and means.—Telephone, No. 1854 Gerrard.

Home for Ladies suffering from slight mental, nervous, or hysterical ailments Good country house, large secluded garden, and every comfort.—Under medical supervision.—Apply to Superintendent, Mount Pleasant, Wanstead, Essex.

A Physician (married, no family) has a Vacancy in his Country Home for a RESIDENT PATIENT. Detached house, garden, &c.; pretty neighbourhood. Gravel soil. Golf, boating, fishing, tennis, &c. Easy distance from London. Terms strictly moderate. Highest references.—Address, No. 116, THE LANCET Office, 423, Strand, W.C.

Midlands. — Lady (Certificated Masseuse) wishes to receive REST-CURE PATIENT. Comfortable home. Every modern convenience. Healthy situation, facing due south. Personal care. Recommended by doctor. Terms 5 guineas weekly.—Address, No. 379, THE LANCET Office, 423, Strand, W.C.

Hampshire Doctor, married, with special experience of mental work, can receive one Resident Patient, mental or otherwise. Beautiful detached house in large sheltered garden, tennis, croquet lawns, &c. Delightful climate, easy distance of London. Every home care and comfort. Driving, motoring, hunting, and golf. — Address, No. 578, THE LANCET Office, 423, Strand, W.C.

ROYAL NAVAL MEDICAL SERVICE.

The next Examination of Candidates for Commissions in the Royal Naval Medical Service will be held at Examination Hall, Thames Embankment, on the 2nd and following days of May, 1910.

The number of Commissions to be granted will be fifteen.

The Regulations for Entry and the form to be filled up by candidates will be supplied on application to the Medical Director-General, Admiralty, 18, Victoria-street, London, S.W.

The Throat Hospital, Golden-square, W.—A RESIDENT HOUSE SURGEON is required. Salary £75 per annum, with board and laundry.

Candidates must be registered medical practitioners, and should submit their applications, accompanied by copy of three recent testimonials, to the undersigned not later than the 9th April.

W. HOLT, Secretary.

Rotherham Hospital and Dispensary. Wanted, an ASSISTANT HOUSE SURGEON. Ophthalmic experience a recommendation.

Salary £80 per annum, with board, lodgings, and washing.

Duties to commence April 1st. Applications, with copies of four recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate-street, Rotherham, as early as possible.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—ANÆSTHETIST wanted. Honorarium £15 per annum. Specialist preferred. Candidates will be required to appear before the Medical Committee. Applications, with testimonials, to be sent not later than April 9th to the Secretary, from whom further particulars can be obtained.

London Fever Hospital, Islington, N.—A vacancy in the post of HONORARY SURGEON to the Hospital has occurred by the resignation of Mr. Pepper.

Gentlemen holding the Fellowship of the Royal College of Surgeons are invited to send their applications as candidates for the appointment to the undersigned on or before the 4th of April for submission to the Election Committee. W. CHRISTIE (Major), Secretary.

London Fever Hospital.

Leicestershire and Rutland Asylum, Narborough, near Leicester.—Wanted, a JUNIOR ASSISTANT MEDICAL OFFICER (Male). Must be fully qualified, registered, and unmarried. Salary £150, rising £10 per year to £180, with board, residence, and laundry.

Applications must be made on or before Wednesday, April 6th, 1910, to W. J. FREER, Esq., Clerk to the Visitors.

10, New-street, Leicester.

City of London Hospital for Diseases of the CHEST, Victoria Park, E. (nearest station Cambridge Heath, G.E.R.).—Applications, with copies of recent testimonials, for the post of HOUSE PHYSICIAN (Male) are invited to be sent to the Acting Secretary, on or before the first post, March 29th. The appointment will be for six months. Candidates must be qualified. Board, washing, and residence provided, and salary at the rate of £75 per annum. Information as to duties, &c., can be obtained on application to the Acting Secretary, by letter or personally, any day between 12 and 2 o'clock.

Wakefield.—House Physician (single) required for the WAKEFIELD GENERAL HOSPITAL (70 beds). Must be doubly qualified and a good Anæsthetist. One with previous hospital experience preferred.

Salary £100 per annum, with board and washing.

The duties to commence 1st May, 1910.

Applications, with copies of three recent testimonials, to be sent not later than noon on 31st March to the Hon. Sec., B. S. BRIGGS, 21, King-street, Wakefield.

The Manchester Northern Hospital for WOMEN and CHILDREN, Park-place, Cheetham Hill-road. —The Committee of Management are desirous of receiving applications for the appointment of PATHOLOGIST to the Hospital, whose duties shall be to make post-mortem examinations, and to carry out microscopic examinations when required. Honorarium £10 per annum. Applications to be sent on or before Thursday, March 31st, to the Secretary, Mr. HUBERT TEAGUE, 38, Barton Arcade, Manchester.

The Cancer Hospital, Fulham-road, London, S.W.—The House Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary £70 per annum. The appointment is for six months and is subject to rules, copies of which can be obtained from the Secretary.

The successful candidate to commence his duties on the 1st May.

Applications, with copies only of three testimonials, to be sent to the undersigned on or before noon, Monday, 4th April.

FRED. W. HOWELL, Secretary.

St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.—A vacancy having occurred in the office of HONORARY ANÆSTHETIST to this Charity, the Directors are prepared to receive applications for the vacant office. Every candidate must be a registered Medical Practitioner. Applications and testimonials must be forwarded not later than 2nd April, and candidates must attend the Medical Committee at the Dispensary on Wednesday, 6th April, at 4.30 o'clock precisely.

15th March, 1910. FRANK STOKES, Secretary.

York Dispensary. — Wanted, Two RESIDENT MEDICAL OFFICERS (one of whom must be a Male) to Visit and Attend (including Midwifery) the Sick Poor at their own homes. Candidates must be duly qualified, registered, and unmarried. Salary £130 a year, with board, lodging, and attendance. There are three Resident Medical Officers, and the City is divided into three Districts for visiting purposes. The successful candidate will be required to commence his duties about April 15th, 1910. Applications and testimonials to be sent to Dr. SWANSON, The Pleasaunce, Heworth, York, as early as possible, and not later than April 7th, 1910.

The University of Sheffield.—Appointment of DEMONSTRATOR in ANATOMY.—The Council will shortly proceed to the appointment of a Demonstrator in Anatomy. Salary £150 per annum.

Applications must reach the undersigned, from whom further particulars may be obtained, by the 4th April, 1910.

W. M. GIBBONS, Registrar.

Salop and Montgomery Asylum, Shrewsbury. — JUNIOR MALE ASSISTANT MEDICAL OFFICER required. Candidates must be unmarried, not over thirty years of age, and doubly qualified and registered under the Medical Act. Salary £150 per annum, with board, furnished apartments, washing, fuel, light, and attendance. Appointment for three years, renewable at the option of the Visiting Committee, and subject to the provisions of the Asylum Officers' Superannuation Act.

Forms of application may be obtained from the Medical Superintendent, to whom applications, with copies of testimonials and certificates of age, should be forwarded not later than Saturday, 2nd April.

North Riding Infirmary, Middlesbrough.—HOUSE SURGEON wanted to commence duties on the 1st May. Salary £100 per annum, with residence, board, and washing. As the present Assistant House Surgeon is a candidate for the post, applicants must state if they are willing to accept the Junior position in the event of the Assistant House Surgeon being elected. Salary of Assistant House Surgeon £75 per annum, with residence, board, and washing.

Applications, stating age, qualifications, and experience, together with three copies of recent testimonials, must reach the undersigned not later than noon, Wednesday, March 30th, 1910.

By order.

CHAS. POSTGATE, Secretary-Superintendent.

Royal Southern Hospital, Liverpool. —Applications are invited for the post of HONORARY SURGEON to the above Hospital.

Applicants must possess the Fellowship of the Royal College of Surgeons of England, Ireland, or Edinburgh.

Applications and testimonials must be sent in, addressed to the Chairman of the Medical Officers Election Committee, not later than noon on Wednesday, the 30th instant.

The canvassing of any member of the Election Committee will disqualify the applicant.

ALLEN NALDRETT, Superintendent and Secretary.

Warneford, Leamington, and South WARWICKSHIRE GENERAL HOSPITAL.—Vacancy in the office of HONORARY PHYSICIAN.—The office of one of the Honorary Physicians of this Institution being vacant, the Election Committee intend to proceed to the election of a duly qualified gentleman to fill the vacancy on Wednesday, the 6th day of April, 1910, in accordance with the rules.

Applications and certificates of qualifications must be sent in not later than midday on the 29th March instant to the Secretary, from whom a copy of the rules may be obtained.

Hydrotherapeutics in connexion with the Saline Waters is one of the objects of the Institution. By order of the Committee,

7th March, 1910. G. T. POOLE, F.C.I.S., Secretary.

Warneford, Leamington, and South WARWICKSHIRE GENERAL HOSPITAL.—Wanted at the above Hospital, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Physician, fully qualified and registered. Salary £65 per annum, with board, washing, and apartments.

Applications, which must be made on a form to be obtained from the Secretary of the Hospital, must be sent in on or before the 31st March instant (with not more than five recent testimonials) to the Secretary, from whom a list of the duties may be obtained.

The Election will be made on the 6th April and the duties to commence as soon after that date as possible.

G. T. POOLE, F.C.I.S., Secretary.

Leamington, 8th March, 1910

Blackburn and East Lancashire INFIRMARY.—Wanted, for this Institution, which contains 130 beds, a JUNIOR HOUSE SURGEON. Salary to commence at £80 per annum (with an additional allowance of £5), together with board, residence, &c. No outside visiting. The gentleman appointed will be required to enter into an agreement not to commence private practice within the Boroughs of Blackburn and Darwen for a period of three years from the date of his appointment. The appointment will be made on Monday, April 4th, when selected candidates (whose railway fares will be allowed) must be in attendance. Applications, with testimonials, stating age, experience, &c., to be sent not later than Wednesday, March 30th, to the undersigned.

15, Richmond-terrace, Blackburn. NATHAN A. SMITH, Secretary.

East London Hospital for Children and DISPENSARY for WOMEN, Shadwell, E.—The Board of Management invites applications for the post of SECOND MEDICAL OFFICER (Male) to the Casualty Department. Hours of attendance, Mondays and Tuesdays, 9.30 A.M. to 5 P.M., Saturdays 9.30 A.M. to 12 noon. The appointment is for six months, and is renewable. Salary at the rate of £40 per annum, with luncheon and tea provided at the Hospital. Candidates, who must be registered, must send in their applications on or before Saturday, April 9th, 1910, and can obtain further particulars from the undersigned.

W. M. WILCOX, Secretary.

NOTE.—The Hospital is situate in Glamis-road, within five minutes of Shadwell Railway Stations. Shadwell is by rail four minutes from Fenchurch-street.

London Throat Hospital, 204, Great Portland-street, W.—Wanted, Two ASSISTANT ANÆSTHETISTS. Application to Secretary, with two testimonials.

Leith Hospital. — The Managers invite applications for the post of ANÆSTHETIST.

Applications to be lodged not later than 14th prox. with the Honorary Secretary, at the Hospital, Mill-lane, Leith.

21st March, 1910.

The Sheffield Royal Hospital.—Election of Two HONORARY ASSISTANT DENTAL SURGEONS.—Notice is hereby given that the Election Committee of the above Hospital will meet on Wednesday, the 20th day of April, 1910, at noon, for the purpose of electing Two Honorary Assistant Dental Surgeons.

Every candidate must be on the Dental Register, and be a Licentiate of Dental Surgery of one of the Licensing Bodies of the United Kingdom. No Assistant Dental Surgeon shall be connected with the dispensing or selling of drugs. Canvassing any Member of the Election Committee will be strongly discouraged.

Forms of application may be obtained from the Secretary, to whom they must be returned not later than Saturday, the 9th day of April, 1910.

The Board Room, 25th March, 1910. JOE W. ROBINSON, Secretary.

The Sheffield Royal Hospital.—Open APPOINTMENT.—Wanted, an ASSISTANT HOUSE PHYSICIAN (Sixth Resident). Candidates must be registered medical practitioners and unmarried. Ladies are not eligible. Salary £50, with board, lodging, and washing.

Forms of application may be obtained from the Secretary, to whom they must be returned as early as possible.

The Board Room, 11th March, 1910. JOE W. ROBINSON, Secretary.

Hospital for Sick Children, Newcastle-on-Tyne. (74 beds.)—Male RESIDENT MEDICAL OFFICER wanted, to commence duty on May 1st. Must be doubly qualified. Salary £100, with board, lodging, and laundry.

Further particulars may be obtained from the Secretary, Hospital for Sick Children, City-road, Newcastle-on-Tyne, to whom applications, with testimonials, should be sent on or before April 7th.

Darlington Hospital and Dispensary. —Wanted, HOUSE SURGEON, doubly qualified and unmarried. Salary £120 per annum, with board, lodging, and laundry in the Institution. Duties to commence early. Candidates to say when they could come.

Applications, stating age, with testimonials (copies), to reach the Secretaries, 49, Stanhope-road, Darlington, not later than the 2nd of April, 1910.

Personal canvassing of Members of the Committee will disqualify.

Rural District Council of Stow-on-the-WOLD.—MEDICAL OFFICER OF HEALTH.—The Stow-on-the-Wold Rural District Council will, at their meeting to be held on the 14th day of April next, proceed to the appointment of a Medical Officer of Health for their district, at a salary of £50 per annum.

Applications, accompanied by testimonials, from persons qualified to hold the office, should be sent to me not later than the 10th April. Any other information can be obtained on application to the Clerk.

Stow-on-the-Wold, Glos., March 17th, 1910.

Resident House Surgeon.—The Executive Committee of the ROYAL NATIONAL ORTHOPÆDIC HOSPITAL invite applications for the post of Resident House Surgeon. Salary £100, with rooms, board, and washing.

Applicants must be qualified registered medical practitioners and unmarried, and prepared to take up the duties by the middle of April. Applications, with copies of recent testimonials, to be sent on or before April 11th to the Secretary, from whom further particulars can be obtained.

Address, 234, Great Portland-street, W.

Bristol General Hospital.—The Committee invite applications for the posts of HOUSE PHYSICIAN, CASUALTY HOUSE SURGEON, and ASSISTANT HOUSE PHYSICIAN. Salary £60. Board, residence, &c., will be provided in the house. The appointments will be made for six months from the 1st May next. Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have had recent experience in the administration of anæsthetics.

Applications, stating age, with copies of testimonials, to be sent to the Secretary on or before 9th April.

By order of the Committee.

9th March, 1910. W. THWAITES, Secretary.

Kidderminster Infirmary & Children's HOSPITAL.—Wanted, a HOUSE SURGEON. Salary £100 per annum and board.

The appointment is for twelve months, renewable, if mutually arranged, at an increase of £10 per annum.

The duties are mainly surgical.

Candidates must be unmarried; ladies ineligible.

Selected candidates will be required to attend before the Committee on April 15th.

The third-class return fare of unsuccessful candidates will be paid.

Further information, with copies of rules and by-laws, may be obtained from the Secretary, to whom all applications should be addressed, on or before April 2nd.

Canvassing not allowed.

The duties to commence on April 29th.

Royal Ear Hospital, Soho.—House SURGEON wanted. Honorarium £40 per annum. Time for reading.—Applications, with testimonials, to be addressed, Hon. Sec., Medical Board, Royal Ear Hospital, 42 and 43, Dean-street, Soho, London.

County Borough of Croydon.—Croydon BOROUGH HOSPITAL.—The Council invite applications for the appointment of SENIOR RESIDENT MEDICAL OFFICER and BACTERIOLOGIST at the Croydon Borough Hospital for Infectious Diseases.

Preference will be given to candidates who have held previous hospital appointments and possess a Diploma in Public Health.

The salary will be £160 per annum, with board, lodging, and washing.

Applications to be made upon forms to be obtained at my office, and sent to me with copies of not more than three testimonials of recent date, not later than 11 o'clock in the forenoon of Friday, the 8th April, 1910, endorsed "Senior Resident Medical Officer."

F. C. LLOYD, Town Clerk.

Town Hall, Croydon, 21st March, 1910.

Bristol Royal Hospital for Sick CHILDREN and WOMEN.—Appointment of ASSISTANT HOUSE SURGEON.—The Committee are prepared to receive applications for the post of Assistant House Surgeon.

Candidates must hold double qualifications and produce unexceptionable references as to character. Salary £50 per annum, with board, rooms, and attendance. The appointment will in the first instance be for six months.

Applications, stating age, with full particulars of experience, and accompanied by testimonials, should be sent in on or before Tuesday (noon), 29th day of March. If elected, satisfactory proof of qualifications will be required. Applications should be addressed to the Secretary, and endorsed "Assistant House Surgeon."

By order of the Committee.

March 18th, 1910. J. E. SMITH, Secretary.

Seamen's Hospital Society, Greenwich, S.E.—The Committee invite candidates for the following appointments at the DREADNOUGHT HOSPITAL, Greenwich, to which is attached the London School of Clinical Medicine, Post-Graduate.

Two HOUSE PHYSICIANS. Salary £50 per annum, with board, residence, and washing.

Two HOUSE SURGEONS. Salary £50 per annum, with board, residence, and washing.

The appointments will be for six months from the 1st of May next, and candidates must be doubly qualified and registered. Applications, stating age, together with copies of not more than three recent testimonials (which must be printed or typewritten), to be sent in on or before the 5th of April to the undersigned, from whom further particulars can be obtained. By order.

Greenwich, 8th March, 1910. P. MICHELLI, Secretary.

Seamen's Hospital Society.—The Committee of Management invite candidates for the appointment of PATHOLOGIST, with duties at the DREADNOUGHT HOSPITAL, Greenwich, to which is attached the London School of Clinical Medicine. Salary £100 per annum, with luncheon and tea in the Hospital. Applications, together with copies of not more than three recent testimonials, which should be typewritten or printed, to be sent in on or before Monday, the 4th of April, to the undersigned, from whom further particulars can be obtained. By order.

15th March, 1910. P. MICHELLI, Secretary.

Seamen's Hospital Society.—The Committee of Management invite applications for the appointment of ASSISTANT PHYSICIAN at the DREADNOUGHT HOSPITAL, Greenwich, to which is attached the London School of Clinical Medicine (Post-Graduate).

Candidates must be Bachelors or Doctors of Medicine of a University in the United Kingdom and Fellows or Members of the Royal College of Physicians of London.

The appointment carries with it a seat upon the Medical Council.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Candidates are invited to attend a meeting of the Medical Council at the Society's Board Room, 13A, Cockspur-street, Pall Mall, S.W., on Tuesday, the 12th of April, 1910, at 5.30 P.M.

Applications, with copies of not more than three testimonials, which should be printed or typewritten, to be sent in on or before the 11th of April to the undersigned, from whom further particulars can be obtained. By order.

P. MICHELLI, Secretary.

Seamen's Hospital Society, Greenwich, S.E., March 15th, 1910.

West Riding of Yorkshire.—County MEDICAL OFFICER'S DEPARTMENT.—The West Riding Public Health and Housing Committee invite applications for the following appointments:—

(1) ASSISTANT to the County Medical Officer

(2) BACTERIOLOGIST on the Staff of the County Medical Officer.

The salary offered in each case is £250 per annum, rising to £300 by annual increases of £12 10s. Further particular will be furnished on application.

Applications (which must be made on forms to be supplied), with copies of not more than three testimonials, are to be sent under cover marked "Assistant Medical Officer" or "Bacteriologist," as the case may be, to the undersigned not later than 4th April, 1910.

Canvassing is prohibited.

Dated the 16th day of March, 1910.

FRANCIS ALVEY DARWIN, Clerk of the County Council.

County Hall, Wakefield.

Staffordshire General Infirmary, Stafford.—ASSISTANT HOUSE SURGEON. Salary £82 per annum, with board (not including beer), residence, and laundry. Gentlemen desirous of becoming candidates must send to the undersigned their applications, stating age, with not more than three testimonials of recent date, and also certificate of proficiency in administration of anæsthetics, not later than Thursday following the date of publication of this advertisement. RICHARD BATTLE, Secretary.

Croydon General Hospital.—The Committee contemplate establishing a Department for Radiography and the Treatment of Diseases by X Rays, and they desire to receive applications from gentlemen specially qualified in that branch of the medical profession who would be willing, if elected on to the Honorary Staff of the Hospital, to undertake the work of such a Department on one day a week and at such other times as may be necessary.

Applications, with statement of qualifications and experience, to be sent to me at the Hospital by Saturday, April 9th, 1910.

J. JONES, Secretary.

University College Hospital.— Required from June 1st next, a MECHANICAL ASSISTANT in the Electro-Radiographic Department. Hours 9 A.M. to 6 P.M. (except Sundays). He will be required to attend on Saturday afternoons, but will be allowed one other day from 2 P.M.

Salary to commence at £78 per annum, with dinner and tea.

Applications, supported by three recent testimonials, to be sent to the Secretary, University College Hospital, Gower-street, W.C., before noon on Wednesday, April 6th.

[AMENDED ADVERTISEMENT.]

Ancoats Hospital, Manchester.—The Committee are prepared to receive applications for the post of ASSISTANT HOUSE SURGEON.

Candidates to be fully qualified. Salary £70 per annum, with board, &c.

Applications, stating age, with copies of recent testimonials, to be sent in on or before March 30th. SAML. BARON, Secretary.

Royal Mineral Water Hospital, Bath. —Special Hospital for Rheumatism, Arthritis, &c. 150 beds.—Applications are invited for the post of RESIDENT MEDICAL OFFICER, soon to be vacant.

Candidates, who must be legally qualified and registered medical men, should forward their applications, stating age, &c., and testimonials, to the Secretary immediately.

Salary £100, with lodging, board, and washing.

8th March, 1910.

York County Hospital.—Wanted, a HOUSE SURGEON. Must be duly qualified and registered. Salary £100 per annum, with board, residence, and washing.

The officer appointed will have charge of the Surgical cases, and will be required to attend to casualties between the hours of 3 P.M. and 9 A.M.

Applications, stating age, with copies of not more than three recent testimonials, to be sent to the undersigned not later than the 6th April next. FREDK. NEDEN, Secretary and Manager.

York, March 22nd, 1910.

Cheltenham General Hospital (114 beds).—The post of HOUSE SURGEON is vacant. Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer Anæsthetics. Salary £75 per annum, with board and lodging.

Applications, with copies of testimonials, to be sent to the undersigned, at the Hospital, as soon as possible.

Personal canvass of the Governors is expressly forbidden.

By order,
W. H. HEAD, Secretary.

Borough of Ilkeston.—Joint Medical SUB-COMMITTEE.—Applications are invited from fully qualified Medical Women for the post of SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH.

The lady appointed must devote her whole time to the duties connected with the Medical Inspection of School Children and the Notification of Births Act.

Preference will be given to applicants who:—

(a) Have had adequate training in State Medicine and hold a Diploma in Public Health;

(b) Have enjoyed special opportunities for the Study of Diseases of Children.

Salary £250 per annum. Applications, stating age, qualifications, and experience, together with not more than four recent testimonials, must be received, endorsed "School Medical Officer," on or before April 8th, 1910, and be addressed to the undersigned, from whom printed particulars as to duties, &c., may be obtained.

WRIGHT LISSETT, Town Clerk.

Town Hall, Ilkeston, 22nd March, 1910.

The Royal Institute of Public Health.

VACANT APPOINTMENT.

HARBEN DEMONSTRATOR OF BACTERIOLOGY AND COMPARATIVE PATHOLOGY. Salary £250 per annum.

Intending applicants are requested to forward applications, testimonials, &c., addressed to the Hon. Secretary.

JAMES CANTLIE, M.A., M.B., Hon. Secretary.

37, Russell-square, London, March, 1910.

Royal Albert Hospital, Devonport.— The post of ASSISTANT RESIDENT MEDICAL OFFICER of the above Institution is now vacant. Gentlemen who are applicants must be unmarried and duly registered. The appointment will be for six months. Salary at the rate of £50 a year, with board, apartments, and laundry.

Applications, accompanied by not more than four testimonials, should be addressed to the Chairman of the Medical Committee so as to reach him as soon as possible.

By order of the Committee.
CHAS. W. DICKINSON, Capt. R.N., Secretary.

Royal Albert Hospital, Devonport, 8th March, 1910.

Salford Royal Hospital.—Wanted, HOUSE SURGEON (Male) on 1st April next. Salary at the rate of £60 per annum. The appointment is for six months, with board and residence.

Candidates must be registered under the Medical Act.

Applications, with testimonials and certificates of registration, to be delivered to the undersigned without delay.

Vacancies will subsequently occur for similar periods in the offices of Resident Surgical Officer (£100) and House Physician (£90) respectively. By order of the Board.

GEORGE RUDDLE, Secretary and Superintendent.

March 16th, 1910.

Somerset Hospital, Cape Town.— Appointment of ASSISTANT MEDICAL OFFICER.—Wanted, for Somerset Hospital, Cape Town (191 beds; Recognised by the University of London), an Assistant Medical Officer to act as House Surgeon. The appointment to be held for one year, but a re-appointment may be obtained if the duties of the Medical Officer have been carried out satisfactorily. The duties are comparable with those of a hospital of similar size in Great Britain. Salary £200 per annum, with rations and quarters. Salary to commence from date of taking up duties. Half salary during voyage out. The officer appointed will be required to report himself on arrival to the Resident Surgeon and to register in the Cape Colony, for which a fee of £5 is charged. Applications, with copies of testimonials and particulars of past appointments, must be deposited not later than 4 P.M. on Friday, 1st April, 1910, at the offices of the undersigned, from whom further particulars may be obtained. DAVIS & SOPER,

Agents for the Somerset Hospital, Cape Town.

54, St. Mary Axe, London, E.C., 22nd March, 1910.

North Staffordshire Infirmary and EYE HOSPITAL, Hartshill, Stoke-on-Trent. — HOUSE PHYSICIAN (Male) required for the above Hospital. Salary £100 per annum, with furnished apartments, board, and washing.

Candidates must be registered, and possess a diploma or degree in Surgery from the College of Surgeons in London, Edinburgh, or Dublin, or from one of the Universities; and a diploma, degree, or licence in Medicine from a University or duly recognised licensing body of Great Britain or Ireland.

Applications, giving age, with not more than six testimonials, to be sent to the Secretary and House Governor not later than 10 A.M. on Tuesday, April 5th, 1910.

Selected candidates will be required to produce evidence of their qualifications and of registration. They will be required also to attend before the General Committee on a date of which due notice will be given later. Canvassing prohibited.

By order of the Committee.

March 22nd, 1910. T. BASIL RHODES, Secretary and House Governor.

WEST AFRICAN MEDICAL STAFF.

Owing to the large number of applications recently received for admission to the West African Medical Staff, the list is temporarily closed.

Appointments are usually made during the months of March, August, and November, and, in future, applications addressed to the Private Secretary to the Secretary of State, Colonial Office, S.W., will be received during the months of February, July, and October.

REYNOLDS & BRANSON, LTD. (ESTAB. 1816.)

Medical Transfer Agents,

LEEDS.

Telegrams: "REYNOLDS, LEEDS."

NOTICE

The Usual List will appear next week.

MR. HERBERT NEEDES' Offices
have been removed to . .
35, Craven St., Charing Cross, W.C.

THE SCHOLASTIC, CLERICAL, & MEDICAL ASSOCIATION,

LIMITED. ESTABLISHED 1880.

22, CRAVEN STREET, STRAND, W.C.

Telegraphic Address—"Triform, London." Telephone No. 1854 (Gerrard).

A Pamphlet relating to the MEDICAL DEPARTMENT, with the names of the DIRECTORS and the MEDICAL ADVISING BOARD, and terms will be sent on application to—Mr. G. B. STOCKER, MANAGING DIRECTOR, 22, CRAVEN-STREET, STRAND, W.C.

The Association undertakes the SALE of PRACTICES and PARTNERSHIPS; the Introduction of LOCUM TENENS and ASSISTANTS; INTRODUCTION of RESIDENT PATIENTS; MEDICAL ACCOUNTANCY (by a duly qualified Medical Accountant); INVESTIGATION and VALUATION of PRACTICES, &c.; POSTING BOOKS and sending out Bills; INSURANCE OF ALL KINDS, &c., &c.

FOR SALE.

(1) DEATH VACANCY, SOUTH MIDLANDS.—Pleasant Country Town within two hours of London. Receipts about £1200, including several good appointments. Large detached house; billiard-room; stabling and fair-sized garden. Good society. Sport of all kinds.

(2) PARTNERSHIP (with view to Succession in two years) in an old-established good-class Practice in a small Country Town in the South-West of England, beautifully situated. Receipts for 1909 over £1270. Premium for One-third Share two years' purchase. Sport of all kinds.

(3) LARGE SEAPORT TOWN, NORTH.—Old established PRACTICE of about £1200 per annum. In present hands twenty-five years. There are appointments worth about £100 per annum. Well-situated house, with stabling and small garden; rent £70. Premium, with six months' introduction, one and a half years' purchase; or with three months', one and a quarter years' purchase.

(4) LONDON, RESIDENTIAL NORTHERN SUBURB.—Old-established Middle class PRACTICE. Receipts average £730 per annum. Well-situated detached house, with stabling and large garden; rent £75, or would be Sold. Premium one and a quarter years' purchase.

(5) PRACTICE of £700 to £800 per annum in a Middle-class District of London. Fees good. No appointments. Very good house, with garden. Exceptional educational advantages. Premium from prompt purchaser (who should have had experience) £750. Six months' introduction

(6) CUMBERLAND.—Old-established unopposed Country PRACTICE near the sea. Receipts average over £460. Good house, with stabling and large garden; rent £40. Premium £500. Sport of all kinds, including golf.

(7) DEATH VACANCY, HARROGATE.—Good-class Non-dispensing PRACTICE. Cash receipts for 1909 over £640. Visiting fees 5s. upwards. Excellent house which can be rented or purchased. The Practice offers a good opportunity to a purchaser with means who is well qualified and accustomed to good-class practice.

(8) SOUTH-WEST OF ENGLAND.—Small Country Town, beautifully situated, several hundred feet above sea level. Increasing PRACTICE. Receipts for 1909 £640, including appointments worth over £150. Commodious house; billiard-room; stabling and small garden; rent £40. Sport of all kinds. Premium £950.

(9) FAVOURITE PART OF THE SOUTH OF ENGLAND (about two hours from London).—Old-established unopposed PRACTICE of about £530 per annum in a prettily situated Village. Appointments worth about £250. Excellent and commodious house, with stabling and large garden; rent £60. Sport of all kinds. Premium £800. Capable of increase.

(10) NORTH WALES.—Favourite Seaside Resort.—Good-class PRACTICE. Cash receipts average over £800. Very good house; rent £80, or would be Sold. Social and educational advantages. Premium £1450.

(11) MIDLANDS.—Large County and Hospital Town.—Cash receipts average over £970 per annum (1909 £1030), including an appointment worth about £100 per annum. No clubs. Detached house in a main thoroughfare; rent £65. Six months' introduction. Premium £1200, part of which might be paid by instalments.

(12) KENT.—Suburban District.—PRACTICE averaging nearly £700, including £120 from appointments. Midwifery, sixty at £1 1s. and upwards. Commodious house; rent £65. Premium £860.

(13) PARTNERSHIP in an old-established Practice in a large Hospital Town in the Midlands. Receipts average over £1300, including appointments of over £300. A Share worth about £540 would be Sold for £1000.

(14) SOUTH-WEST OF ENGLAND.—Small Town.—Receipts average £640, including clubs worth £160. Well-situated commodious house; rent £65. Scope for Surgery. Premium one and a half years' purchase.

(15) NORTHERN SUBURB OF LONDON.—Old-established good Middle-class PRACTICE. Receipts average over £530, including clubs worth £150. No carriage. Good house; rent £65. Premium £500.

FOR SALE (*continued*).

(16) SOUTH OF ENGLAND.—Old-established good-class unopposed PRACTICE of £1000 per annum in a small Country Town. There are transferable appointments worth about £300. No assistant. Large house, with stabling and garden; rent £50. Sport of all kinds. Premium, with three months' introduction, £1600. Scope for increase.

(17) RESIDENTIAL COUNTRY TOWN.—PRACTICE of £700, with scope for increase for a good man. Should have some small private means. Moderate premium.

(18) PARTNERSHIP in a Practice in a Country Town in the Home Counties, within half an hour by rail of London. Cash receipts over £1000. No carriage required. Premium for Half Share £600. First-rate golf links.

(19) PARTNERSHIP in an old-established Country Practice in the Home Counties. Cash receipts average about £1200 per annum, including appointments of about £350. Premium for One-third Share £800, with option of further purchase. The Practice is capable of considerable increase.

(20) PARTNERSHIP in a Middle- and Working-class Practice in a residential Suburb of Manchester. Cash receipts for 1909 over £1200, including appointments worth £200. Moderate rent and working expenses. Premium for One-third Share £800.

(21) NORTHERN SUBURB OF LONDON.—Very old-established PRACTICE of good Middle-class. Cash receipts for 1909 over £990 (1908 over £980). Midwifery fees £2 2s. and £3 3s.; only about twelve cases annually. Semi-detached house; rent £80. Premium one and a half years' purchase. The Practice has been known to the Association for many years.

(22) HOME COUNTIES.—Old-established unopposed PRACTICE in a most attractive Country District within twenty-five miles of London. Receipts average over £470, including appointments worth nearly £100. Old-fashioned commodious house (adapted to the reception of resident patients), with stabling and large fruit and flower garden; net rent £90. Sports of all kinds. Premium one and a half years' purchase.

(23) PARTNERSHIP (HALF SHARE) in a good Mixed-class Practice in a Market Town on the outskirts of a busy manufacturing district. Receipts for 1909 about £1400. Purchaser must be well qualified and accustomed to good-class practice. Price about £1400.

(24) WITHIN AN HOUR BY RAIL OF LONDON.—Very attractive residential country neighbourhood. Old-established good-class PRACTICE. Cash receipts average about £900 per annum. Detached house, with stabling and large garden; rent £100, or would be sold. Twelve months' introduction if required. Premium for goodwill £1700. Can be strongly recommended.

(25) TO A WELL-QUALIFIED MAN WITH MEANS.—A good opportunity offers in a fashionable residential Town on the Coast. PRACTICE estimated to produce to begin with about £400 per annum. Well-situated house. Payment of premium for goodwill by results.

(26) PARTNERSHIP in a Mixed Practice in a Town about forty miles from London. Cash receipts average over £800, including appointment of £120. Premium for One-half Share £750.

(27) NORTH-EAST COAST.—A PRACTICE in a pleasant Seaside place within easy reach of a large Town. Cash receipts for 1909 £960. Double-fronted commodious house; rent £60. Pleasant society. Golf. Premium one and a half years' purchase. Scope for increase.

(28) CONTINENT.—Favourite Resort, with large English Colony.—Transferable good-class PRACTICE. Cash receipts average over £480 per annum. Rent £80. Premium for goodwill £350.

(29) EASTERN COUNTIES.—Small Country Town.—Old-established PRACTICE. Cash receipts average over £600 per annum, including appointments worth about £130. Rent £45. Bracing climate. Sport of all kinds. Premium £650, part of which may be paid by instalments. Introduction as desired.

(32) ESSEX.—Outlying Suburb. £400. Rent £65. Price £350.
(34) LONDON, S.W.—£360. Rent £65. Price £400.
(35) NORTH COUNTRY.—Popular Resort. £650. Rent £85. Price £800.
(36) WINTER RESORT, SOUTH.—£640. Rent £50. Price £1000.
(39) LONDON, N.—£570. Price £500.
(40) LONDON, N.—£370. Rent £50. Price £350.

WANTED TO PURCHASE.

(47) WANTED, a PARTNERSHIP with Succession in a Country Town (with Cottage Hospital) in the South or South-West of England or West Midlands. Purchaser is M.D., B.S. Lond., and can invest £1500.

(48) WANTED, a PARTNERSHIP in a Country Town of about 10,000 population (any part but North of England), with scope for Surgery, by a M.B., B.S. Lond. Purchaser can invest £1250.

(49) WANTED, a good-class Country or Country Town PRACTICE of £500 per annum upwards within twenty miles of Chislehurst (neighbourhood of Sevenoaks preferred). Purchaser is M.R.C.S., L.R.C.P., and has ample capital and private means.

(50) F.R.C.S., with considerable hospital experience, leaving London on account of wife's health, seeks PARTNERSHIP. Essentials are: (1) A Country District; (2) House and garden protected from East and with plenty of sun; (3) South of England, near sea preferred.

(51) WANTED, a PRACTICE of about £1000 per annum in a Town in the South or South-West of England (Bristol preferred). Purchaser is M.D., C.M.Aberd., experienced, and has ample capital.

(52) WANTED, a Country or Country Town PRACTICE of between £500 and £600 per annum in Devon, Somerset, Hampshire, Wiltshire, or Gloucestershire. Good house and garden. Purchaser is M.R.C.S., L.R.C.P., has ample capital and private means.

(53) WANTED, a PRACTICE of £500 to £600 per annum in a residential neighbourhood to the North-West of London (Pinner, Harrow, Northwood, or Hendon preferred). Good house essential Purchaser is M.R.C.S., L.R.C.P., and has necessary capital.

MEDICAL TRANSFER AGENCY. ESTAB. 1875.

MR. PERCIVAL TURNER (OLD EPSOMIAN)

(Son of a well-known Practitioner and Author of Guide to Medical and Dental Professions),

4, ADAM STREET, ADELPHI, LONDON, W.C.

Telegraphic Address, "EPSOMIAN, LONDON." Telephone, 3399 CENTRAL.

Transfer of Practices and Partnerships effected. Assistants and Locum Tenens provided. No fee to Principals. Investigation and Valuation of Practices, Accountancy, Bookkeeping, Arbitrations, &c. Insurances on Specially Reduced Terms to Medical Men only.

FOR DISPOSAL.

Urgent. — £400 a year. — London, S.W. Many years same hands. Vendor ill. Middle-class and Cash SURGERY. Fees 1s. to 2s. 6d. Clubs £140. Densely populated district. Rent £45. Plenty of scope. Price £400 or offers. (No. 4500.)

North of England.—£800 a year.—Mixed General PRACTICE of many years' standing in a large Town. Appointments £150. Fees from 2s. upwards. Good detached house and three-quarters of an acre garden; rent £60. Partnership introduction. Premium only £800. (No. 4499.)

South Coast.—£650 a year.—Old-established Middle-class PRACTICE in a favourite seaside resort. Fees 2s. 6d. to 10s. 6d. Easily worked. No horse. Large house in good position; rent £50. Partnership introduction. Premium one and a half years' purchase. House suited for resident patients. (No. 4497.)

Partner wanted in a good increasing Middle-class Practice in a London suburb, with fees ranging from 2s. to 10s. A Share worth about £600 a year can be purchased at first, and more later on. Premium two years' purchase. (No. 4492.)

London Suburbs.—£650 a year.—For Disposal, a very good-class PRACTICE of many years' standing in a good residential suburb. Fees from 3s. 6d. upwards. Same hands twenty years. Midwifery from 42s.; very few taken. No horse required. Good family house, with garden, lawn, &c.; rent £100. Partnership introduction. (No. 4491.)

Nearly £700 a year.—Good old-established PRACTICE in a pleasant Residential Town on line of rail near London. Easily worked. Good house and garden; rent £60. Introduction three months. Premium one and a half years' purchase. Personally known and recommended. (No. 4471.)

£1100 a year.—Very old-established Country PRACTICE in an Agricultural and Fruit-farming district within three hours of London. Appointments £250. Good detached house and large garden. Station close. Populous district. Hunting, fishing, &c. Partnership introduction. Premium one and a half years' purchase. Personally investigated and recommended. Books investigated by chartered accountant. (No. 4373.)

USUAL LIST NEXT WEEK.

FIELDHALL LIMITED.

MEDICAL TRANSFER AGENTS,

LONDON *and* ***LEEDS.***

ADELPHI HOUSE, 71-72, STRAND, W.C.
Managing Director: J. FIELD HALL, M.B.
Telephone: 4667 GERRARD. Telegrams: "FIELDHALL, LONDON."

HEPWORTH CHAMBERS, 148, BRIGGATE.
Manager: W. LANGWORTHY BAKER, M.R.C.S.
Telephone: 3753 CENTRAL. Telegrams: "FIELDHALL, LEEDS."

All Branches of Medical Agency work undertaken. Full Schedule of Terms on application.

PRACTICES FOR SALE.

1. SUSSEX COAST TOWN.—Good General PRACTICE, held by Vendor seventeen years. Income for the last twelve months £760, including £50 from transferable appointments. Visits 2s. 6d., 3s. 6d., and 5s. (partly non-dispensing). Midwifery 1 to 3 guineas; about twenty-five cases. Very centrally situated house, containing two reception, four bedrooms, consulting-room, surgery, &c.; rent £50. Premium, with a six months' introduction if desired, £1150.
2. LONDON, N.W. (NEAR EUSTON).—PARTNERSHIP.—A TWO-THIRDS SHARE in a Cash and Private Practice, established by the Vendor ten years. Income nearly £600, including £50 from appointments. Considerable scope for increase. Lowest fee at the surgery 1s. Visits 1s. 6d., 2s., 2s. 6d., and upwards. No Midwifery under 1 guinea. Good ten-roomed house; rent £65. The Purchaser (if a bachelor) can reside with the Vendor should he prefer to do so. Premium £500, payable £250 cash, and balance by instalments out of the receipts.
3. HOME COUNTIES.—COUNTRY PRACTICE.—PARTNERSHIP. A SHARE representing £540 a year is offered in a sound Family Practice within one and a half hours of London. Visit and Medicine 3s. 6d to 1 guinea. Large detached house, with good garden, tennis lawn, &c.; rent £42. Premium £1075.
4. NORTHERN SEAPORT TOWN.—Family PRACTICE, held by Vendor over twenty-five years. Income for 1909 £1165. Fees 2s. 6d. to 10s. 6d. Midwifery mostly 2 guineas. Centrally situated convenient house; rent £70. Good prospect of hospital appointment. Premium £1400.
5. NORTH WALES.—COAST TOWN.—(A) Well-established PRACTICE. Income for the last year £400. Consultations 3s. 6d. upwards; Visits 4s. to 10s. 6d.; Midwifery 1½ guineas upwards. Well-situated house; rent £50. Premium £500. (B) Well-established PRACTICE. Income nearly £350; this year, to March 15th, £138. Fees 2s. 6d. to 5s.; Midwifery 1 to 3 guineas. Large house, with good garden; rent £50. Premium £430.

These two Practices are in the same town. The respective Vendors are friends, and the Practices could easily be worked together by one man.

6. NEAR SHROPSHIRE. — COUNTRY TOWN. — Old-established General PRACTICE. Average income over £850. Fees 2s. 6d. to 2 guineas. Midwifery 1 to 5 guineas. Large house and garden; rent £66. Premium £1280, or less if fixtures and horses taken.
7. LONDON, S.W.—CASH PRACTICE. Average income nearly £850. Advice and Medicine 1s. and 1s. 6d.; Visits 2s. and 2s. 6d.; Midwifery 21s. and 31s. 6d. House contains dining-room, surgery, consulting-room, five bedrooms, &c.; rent £45. Well adapted for two men in partnership. Premium £1150.
8. LEEDS.—Middle- and Working-class PRACTICE. Average income over £730, including appointments about £100. Lowest fee 1s. 6d., chiefly 2s. 6d. Visits mostly 2s. 6d. No Midwifery under 1 guinea. Double-fronted house; rent about £35. Excellent opportunity for young energetic man. Premium £650, half by instalments.
9. MIDLAND HOSPITAL TOWN.—Sound Upper- and Middle-class PRACTICE. Income £500. Consultations 2s. 6d. to 7s. 6d.; Visits 3s. 6d. to 10s. 6d. The Vendor has never pushed work, so that there is excellent scope for increase, and every prospect of an early appointment on the Hospital Staff for a man with the F.R.C.S. Convenient, well-situated house, with good garden; moderate rent. Premium, with long Partnership introduction, £875.
10. LONDON, N.W.—Very reliable General PRACTICE, held by the Vendor twelve years. The income last year was only just over £400, owing to the Vendor having taken up other work which occupies much of his time. The average income is about £500. No fee under 2s. 6d. Visits 3s. 6d. to 7s. 6d. Lowest Midwifery 2 guineas. Good double-fronted corner house, with large rooms, on moderate terms. Premium £550.
11. AUSTRALIA.—VICTORIA.—UNOPPOSED NON-DISPENSING PRACTICE, estimated to be worth about £600 a year. Fees 10s. 6d. to £1 1s.; mileage from 5s. Midwifery 3 to 10 guineas. Very compact bungalow; inclusive rent £45. Excellent shooting and fishing. Plenty of society. Rapidly developing district. Premium, to include household furniture, &c., £425.

IMPORTANT NOTICE TO VENDORS AND PURCHASERS.

Full particulars of Dr. FIELD HALL'S UNIQUE SCHEME, whereby the BONA FIDES of a PRACTICE or of a PARTNERSHIP will be GUARANTEED by a reliable INSURANCE CORPORATION, can be obtained by application to the London Office.

MEDICAL TRANSFER AGENCY AND ACCOUNTANCY OFFICES. (Established 1868.)

Messrs. PEACOCK & HADLEY,

19, Craven Street, Strand, W.C.

The SALE of PRACTICES and PARTNERSHIPS negotiated, INVESTIGATIONS and VALUATIONS of PRACTICES made for Purchasers, DEBTS collected in Town and Country, BOOKS posted, &c. LOCUM TENENS and ASSISTANTS provided.

No charge made to Purchasers or for inquiries.

Telegrams: "Herbaria, London." Telephone: 1112 Central.

For List of Practices for Sale please see last week's "Lancet" and this week's "British Medical Journal," or apply to Peacock & Hadley, stating requirements.

BLUNDELL & RIGBY

W. H. BLUNDELL (Old Alleynian)
REGINALD RIGBY (Old Sedberghian)
Telephone: 7648 CENTRAL.

WALTER HOUSE,
418/422, Strand,
W.C.
(Entrance Bedford-street.)

PRACTICES TRANSFERRED AND PARTNERS INTRODUCED.
RELIABLE LOCUM TENENS AND ASSISTANTS PROVIDED.
BOOKS INVESTIGATED FOR PURCHASERS.

Purchasers stating their Requirements can have Particular of Suitable Practices.

For List of Practices see B.M.J.

THE MANCHESTER CLERICAL, MEDICAL, & SCHOLASTIC ASSOCIATION, LTD.

The oldest MEDICAL Agency in Manchester. 8, KING STREET.

Telegraphic Address: "STUDENT, MANCHESTER."

TRANSFERS and PARTNERSHIPS arranged, and Investigations, Valuations, &c., undertaken. ASSISTANTS and LOCUM TENENS SUPPLIED. PRACTICES for Sale. Particulars on application.

THE MANCHESTER MEDICAL AGENCY

9, ALBERT SQUARE.

Telegrams: "Medico, Manchester." Nat. Tel. No. 4800

Secretary—CHARLES STEVENSON, F.C.I.S.

PROMPT AND PERSONAL ATTENTION TO THE REQUIREMENTS OF ALL CLIENTS.

THE MEDICAL AGENCY,

WATERGATE HOUSE,
York Buildings, Adelphi, W.C.

Managing Director: J. A. REASIDE.

Telegrams: "Tubercle, London." Telephone: Gerrard, 8954.

THE ABOVE AGENCY UNDERTAKES the TRANSFER of PRACTICES, the INTRODUCTION of PARTNERS, INVESTIGATIONS for PURCHASERS, VALUATIONS, NEGOTIATIONS of TERMS, the SUPPLY of LOCUM TENENS and ASSISTANTS, and MEDICAL ACCOUNTANCY.

ESTABLISHED 1860.

MESSRS. BEDFORD & CO.,

SURVEYORS, AUCTIONEERS, AND ESTATE AGENTS,
10, Wigmore Street, Cavendish Square, W.

SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS in Harley-street and leading medical positions. Selected Lists free on application. Properties registered free of charge. Valuations for Probate and other purposes.

Telephone: 2412 Paddington.

H. Ley Clark, House and Consulting Room Agent, 3A, Wimpole-street, W. Nearly a quarter of a century's experience with the medical specialist. Lists of Houses, Consulting Rooms, and Nursing Homes on application. Tel. No. 916 Pad.

MEDICAL PARTNERSHIP AND CONVEYANCING AGENCY.

1, ADAM-STREET, ADELPHI, W.C.

The SALE of PRACTICES and PARTNERSHIPS NEGOTIATED.

Trustworthy LOCUM TENENS and ASSISTANTS can be had at a few hours' notice. N.B.—No charge made to Purchasers.

Notice.—Mr. J. C. Needes, with an experience of over a quarter of a century, is in an exceptional position to give intending purchasers independent information concerning most PRACTICES and PARTNERSHIPS. Those investments in the following List marked with an asterisk are well known to him, having been purchased through his Office by the present Incumbents years ago, and in many other cases an introduction can be given to gentlemen who have taken charge of the Practices during the absence of the Incumbents.

COUNTRY PRACTICE in a pleasant village, near railway station and good schools, about 100 miles north of London. Cash receipts last year over £700, with considerable scope for increase. Appointments produce about £125 yearly. Excellent house, with ample accommodation, large garden, tennis lawn, stabling, &c.; rent only £45 a year. Premium £1050. Golf, sport, &c.

SMALL PRACTICE in the South Midlands, seventy miles from London. Established two and a half years, and yielding nearly £300 last year, including appointments £90 to £100. Good scope, as there is a population of 2000 in the village, with only limited opposition. Rent of house, with large garden, £28 a year. Premium £300, or offer.

COUNTRY TOWN, fifty miles from London.—Rapidly increasing PRACTICE, the cash receipts of which last year were over £450, including appointments £80 to £100. Twenty cases of Midwifery yearly. Excellent residence (modern conveniences), with large garden attached; rent moderate. Premium £550. Educational facilities, golf, sport, &c.

IN A GOOD-CLASS RESIDENTIAL LOCALITY, a few miles from a large Midland Town, a PRACTICE of ninety years' standing, and held by the present Incumbent for a quarter of a century, is for Disposal. The average for the last three years is £950 per annum, including £65 from appointments. Visits 2s. 6d. to 7s. 6d.; Medicine extra; thirty cases of Midwifery. Excellent residence in its own grounds; rent £80. Six months' partnership introduction given. Premium £1500. Golf links close at hand. The Practice is capable of increase.

WIMBLEDON, S.W. — Old-established Middle-class PRACTICE averaging £520 per annum for the past three years, all private work. Through advancing age and ill-health Vendor has been compelled to refuse night work and Midwifery, and a younger man would find ample scope for increasing the income. Commodious house with large garden; rent £55. Three months' introduction. Premium £500.

PARTNERSHIP.—Owing to the retirement of one of the partners a young, well-qualified Gentleman can purchase a Share yielding about £650 per annum in an increasing Practice in a residential Town in the South, about two hours from London. Population 20,000. Each partner attends about twenty cases of Midwifery yearly. Good house available for partner; rent £50 a year. Premium £1200.

MODERATE PREMIUM.—A well-established PRACTICE in South-West London (North of the Thames), the cash receipts of which average £611 per annum, can be purchased for £450. Held by Vendor twelve years. Forty cases of Midwifery yearly at 1 and 1½ guineas. Nice house (five bedrooms, bathroom, &c.) with garden attached; rent £45. A considerable part of the income is received in ready money.

*BORDERS OF SURREY AND HANTS.—In a pleasant residential district, an old-established PRACTICE averaging a few pounds under £500 per annum, including appointments £70. Thirty to forty cases of Midwifery yearly. Good detached residence, with stabling, lawn, and large garden. Premium £650. Population of place 11,000. Good society and educational facilities.

LONDON SUBURB.—Very old-established PRACTICE, situated in a Residential Suburb in the North of London, and held many years by the present Incumbent. Cash receipts for last three years average £989 per annum. There is no dispensing done and no clubs are held. Visiting fees 3s. 6d. to £1 1s.; Midwifery 3 to 5 guineas. Commodious residence, with large garden, &c., attached; rent £90. Premium £1500.

*COUNTRY PRACTICE (unopposed) in the South-West of England about 100 miles from London. Cash receipts for the past three years average £530 per annum, including appointments of about £250. No opponent within five miles. Attractive and commodious old-fashioned residence, with stabling, large garden, tennis lawn, and field attached. Good hunting, shooting, &c.

Apply to J. C. NEEDES, 1, Adam-street, Adelphi, W.C.

Locum Tenens and Temporary ASSISTANTS.—Practitioners requiring the above can immediately obtain thoroughly reliable qualified Gentlemen upon application to 1, Adam-street, Adelphi, W.C. Every Gentleman engaged by the Office in either of the above capacities is personally known to Mr. J. C. Needes. An office fee of half a guinea is paid by the Principal.

Telegrams—"Acquirement, London."
Telephone—"No. 1743 Central."

Harley-street.—Modern House must be Sold at once. Long lease. Five reception, ten bed-, and two bath-rooms. Good stabling.—Apply, H. Ley Clark, 3a, Wimpole-street, W.

Laboratory and 2 Rooms to be Let in Russell-square, W.C. Large, well-lighted, and fitted with every convenience. Rent only £70 per annum.—For orders to view apply to Messrs. James W. Coade & Son, Auctioneers, 118, Southampton-row, W.C.

Hampton-on-Thames.—Capital Corner well-built HOUSE to Let. Excellent position for Doctor or Dentist. Queen's Villas, 111, Station-rd., Hampton-on-Thames. 3 reception-, 5 bed-rooms, bathroom, and offices. Electric light. Rent £38 p.a. Large and increasing neighbourhood.—Apply, Jackson, 12, Graham-rd., Mitcham.

Surrey (Upper Norwood).—Charming old-fashioned RESIDENCE, standing in beautiful and secluded grounds. Suitable for Doctor taking patients. Ten minutes' walk from station. Two and a half acres. Ten bed- and dressing-rooms, bath-room, three reception-rooms; stabling, cottage. Price £1000; ground rent £90 10s.; rent £150.—Write Wright, Parkfield, Park Hill-road, Wallington.

To Let (vacant Lady Day), Percy HOUSE, Percy Circus, King's Cross-road, W.C., near Great Northern, Midland, and Metropolitan Railways. Commanding corner position, adjoins Police Court and Station. In occupation of medical men for past seventy years. Containing twelve rooms (one very large), bath (h. & c.), library, consulting-room, surgery, and usual offices, also large stabling and harness room adaptable as garage. Suitable either for medical practitioner or as nursing home. Rent £110.—Apply, Doyle, Devonshire & Co., 28, Bedford-row, W.C.

High-class Sanatorium for Open Air TREATMENT for Sale or on Lease. Ideal position in South of England.

Patients in residence. In good working order.

Address, No. 121, The Lancet Office, 423, Strand, W.C.

Yorkshire Coast.—To Sell or Let, a large Modern HOUSE suitable for a Convalescent Home. South aspect. Open and convenient situation. Perfect sanitation.—Address, No. 378, The Lancet Office, 423, Strand, W.C.

Hampshire.—Freehold Cottage ResiDENCE available near railway station, and in an excellent locality for commencing a practice. Prominent main road situation. The accommodation consists of two reception-, six bed-rooms, bath, stabling, and old-fashioned garden. Moderate price, owner leaving district.—Address, No. 380, The Lancet Office, 423, Strand, W C.

Wanted, Specialist (Bachelor) to share small Furnished House in Knightsbridge by Medical Practitioner (Bachelor). Situation very convenient. Good servants, including man.—Address, No. 387, The Lancet Office, 423, Strand, W.C.

To Doctors and Dentists.—An Opportunity occurs of securing at a very moderate price the 80 years lease of a well-built House in Bruton-street, containing some excellent CONSULTING ROOMS. The house is situated in an exceptionally good position, only a few doors from New Bond-street.—Apply, Messrs. Lofts and Warner, 130, Mount-street, Berkeley-square, W.

To Let.—To Dentist.—Consulting-ROOM and WAITING-ROOM, furnished, in Doctor's house. Occupied by Dentist for last nine years. Rent moderate, inclusive fire, light, attendance.—Apply, Physician, 30, Wilton-place, Belgrave square, S.W.

Cavendish-square (Welbeck-street).— A fine CONSULTING ROOM to Let, with use of well-furnished Waiting-room.—Apply, Streat, 7, Portman-street, W.

Consulting-Room. — Wimpole-street. Charming room, with full board and bedroom. £200 per annum. Or Consulting-room only.—Apply, H. Ley Clark, 3a, Wimpole-street, W.

Partner wanted for a West-End non-dispensing General Practice, carried on at present address for over fifty years. Receipts about £1000 a year, including some good insurance and hotel work. A decided increase probable with partner. Half Share will be sold, with succession to whole if and when desired.—Address, No. 386, The Lancet Office, 423, Strand, W.C.

Wanted, Partnership in, or Succession to, Throat and Ear Practice.—Address, No. 392, The Lancet Office, 423, Strand, W.C.

Wanted, a good Middle-class PracTICE, yielding from £500 to £1000 a year, preferably within 100 miles of London, but others considered. Partnership also entertained. Necessary capital available. Particulars received in confidence.—Address, No. 385, The Lancet Office, 423, Strand, W.C.

Purchasers.—Insurance of Bona Fides can only be effected by an investigation into books and other inquiries by an expert specially competent to conduct the same. Thirty-three years' personal attention to such inquiries has given Mr. PERCIVAL TURNER an unique ability to advise in all cases. Terms and full particulars free on application to 4, Adam-street, Strand, London, W.C. Telephone: 3399 Central. Telegrams: Epsomian, London

Liverpool District.—Over £800 a year.—An old-established good-class PRACTICE with a well-appointed commodious House, which can also be purchased if desired. Three months (or longer) introduction would be given.—For further particulars apply to R. Sumner & Co., Ltd., 50a, Lord-street, Liverpool.

Death Vacancy, Hants.—Small Country PRACTICE for prompt Sale. Transferable appointments (union and club) £140. No opposition. Pretty residence, garden, and paddock; rent £25. L.T. in charge.—Apply, Mr. Herbert Needes, 35, Craven-street, Charing Cross, W.C.

To Vendors and Purchasers.— BONA FIDES of PRACTICES GUARANTEED. Full particulars of Dr. Field Hall's unique Scheme, whereby the genuineness of a Practice or of a Partnership will be guaranteed by a reliable Insurance Corporation, can be obtained by application to Adelphi House, 71-72, Strand, W.C.

London Surgery in West-End for immediate Sale. Very moderate and easy terms. Excellent opportunity for young practitioner without capital. Established twenty years. Clubs £40.—Apply, Bernard Smith, Chemist, 6, Weymouth-street, W.

Dorsetshire.—An old-established Town and Country PRACTICE, yielding from £850 to £900 a year, including nearly £200 from public and club appointments. Large family residence, with garden and stabling. First-class educational and social facilities. Good sport, golf, &c. Premium one and a half years' purchase.—Apply, Peacock & Hadley, 19, Craven-street, Strand, W.C.

For Disposal.—Mr. Percival Turner has several very good PRACTICES and PARTNERSHIPS open for negotiation, details of which by desire of Vendors are not advertised. Particulars can be obtained by bonâ-fide applicants on application to Mr. Percival Turner, 4, Adam-street, Adelphi, W.C., stating details of requirements, capital, &c.

Manchester Residential Suburb.— Very promising NUCLEUS for Sale, bringing in about £150 yearly, with great scope for increase, as building is rapidly going on. Price £170, to include good debts £104. One month's introduction.—Manchester Clerical, Medical, and Scholastic Association, Ltd., 8, King-street.

Nucleus, small, for Transfer, favourite South Coast Resort. Small house; improving district. Particulars in strict confidence only. No premium.—Address, No. 349, The Lancet Office, 423, Strand, W.C.

Cash Surgery, without night work or Midwifery, in a large Lancashire Town, for immediate Disposal. Receipts last year £550. Well established; total expenses low. Accept reasonable cash offer or part instalment.—Address, No. 360, The Lancet Office, 423, Strand, W.C.

London, North.—Residential District. —Very reliable old-established General PRACTICE. Income for the last year £521, including about £150 from transferable appointments. Fees 2s. to 10s. 6d. Midwifery 1 to 5 guineas; not encouraged. Well-situated corner house, with three reception, four bedrooms, &c.; rent £65. Vendor having bought a Partnership in the country will accept £500 or near offer from a prompt purchaser.—Address, No. 383, The Lancet Office, 423, Strand, W.C.

£100, Half by Instalments. Good opportunity. North Midlands. Good-class patients. Population 1500, increasing. No resident opposition. Pretty village; bracing. Near several large towns; station; golf. Suit Churchman.—Address, in confidence, to No. 389, The Lancet Office, 423, Strand, W.C.

A Gentleman (M.D., M.R.C.S., L.R.C.P.) is anxious to secure position as ASSISTANT or nominal PARTNER with Practitioner who would offer prospects of Partnership or Succession on basis of payment out of income from Practice. Advertiser is aged forty, married, and has met with unforeseen financial misfortune which at present compels the above requirements. Conducted own good-class town practice for several years and has had experience of all classes of work. Full particulars, unexceptionable references. Personal interview whenever desired.—Address, No. 388, The Lancet Office, 423, Strand, W.C.

Wanted, Management of Branch Practice or Out-door Assistancy, by M.B., C.M., aged forty-two, married. Experienced, especially amongst working-class. Permanency desired.—Address, No. 391, The Lancet Office, 423, Strand, W.C.

Locum Tenens.—No fee to Principals.—Mr. Percival Turner has a large staff of trustworthy Gentlemen acting as Locum Tenentes and will be happy to send them as required at short notice on application. Fees from £4 4s. a week.—Address, 4, Adam-street, Adelphi, London, W.C. Telegrams, "Epsomian, London." Telephone, 3399 Central.

Surgeon required, usually for day work, in industrial district.—Address, stating experience, age salary, to Z. M. 310, care of Messrs. Deacons, Leadenhall-st., London, E.C

Locum Tenens supplied by the Scholastic, Clerical, and Medical Association, Limited, 22, Craven-street, Trafalgar-square, W.C. No Locum Tenens is recommended unless personally known or until direct inquiries have been made as to his character and competence.—Telegraphic address: "Triform," London. Telephone: No. 1854 Gerrard.

Wanted, an In-door Assistant, under thirty years, to help in surgery morning and evening, keep the books. A gentleman reading for a second qualification preferred, as there is very little to do in the daytime. Salary £5 and extras.—Apply, before 12 or after 7 o'clock, 249, Hackney-road, N.E.

Assistants wanted.—(1) Bucks, £200 and small furnished house, an unmarried man preferred; (2) Yorks, £200, out-; (3) Mon., £200, out-; (4) Lancs., £130, in-; (5) London, N.E., £200, out-; (6) Warwickshire, £200, out-; (7) Cornwall, £120, in-; (8) Dorset, £130, in-; (9) Salop, £130, in-; (10) Worcestershire, £180 and rooms.—Apply to the Scholastic, Clerical, and Medical Assn., Ltd., 22, Craven-street, Trafalgar-square, W.C.

Surgeon required for the outward passage to Australia, by large Passenger Steamer.—Apply, Moore & Co., 125, Houndsditch, London, E.C.

Qualified Assistant required for the Tredegar Workmen's Sick Fund Committee. Salary £200 a year, out-door.—Enclose references and state age (under forty) and previous experience to Chief Surgeon, Tredegar.

Medical Resident Superintendent (Christian worker) required for Homes for Children and others (good organiser) within thirty miles of London. Scope for Christian influence and service locally and throughout the country. Honorarium with residence and sundries.—Write, Box 8153, Haddon's, Salisbury-square, E.C.

Wanted, West Midlands, for mixed General Practice, single qualified Out-door ASSISTANT, to Visit, Dispense, and attend Midwifery. Usual bond. Little Midwifery or night work.—Address, stating age, salary required, two recent references, photograph (to be returned), to No. 390, THE LANCET Office, 423, Strand, W.C.

Senior Student desires Post as DISPENSER–SURGERY ASSISTANT and BOOKKEEPER Permanency preferred. Experienced in all branches. Reliable and steady.—Address, No. 382, THE LANCET Office, 423, Strand, W.C.

L.R.C.P. Student, recently qualified in Medicine (London), desires Evening or Part Day employment with Doctor in or near London. Personal interview expected.—Address, No. 384, THE LANCET Office, 423, Strand, W.C.

Wanted, Dispenser and Surgery ATTENDANT; no visiting; time for reading; in Provincial Town.—Address, stating age, salary, and references, to No. 393, THE LANCET Office, 423, Strand, W.C.

Wanted, Re-engagement as Dispenser and BOOKKEEPER. Thoroughly experienced in all branches of dispensing; quick, neat, and accurate. Excellent references and testimonials. Three years in last situation. Salary moderate; outdoors.—H. Brice, 9, Church-road, St. Thomas, Exeter.

THE TELEPHONE

is the most valuable assistant a Medical Man can have. Under our system of **MONTHLY PAYMENTS** the inconvenience of paying the subscription in advance and in one lump sum is done away with. Existing subscribers can adopt our system when their forthcoming subscription becomes due. Particulars on application.

Dept. F, TELEPHONE INSTALMENT SYSTEM CO., Ltd.,
244, High Holborn, LONDON, W.C.

M.D. THESIS.

Skilled Coaching and guidance on legitimate lines for the

M.D. DEGREE OF ALL UNIVERSITIES.

34 Successes in 1909. No failures. Literary researches undertaken. References supplied.—Address, No. 118, THE LANCET Office, 423, Strand, W.C.

Sight-testing Taught Privately in London to qualified Practitioners only by easy and reliable and time-saving method adapted for general practice. Tuition fees moderate and inclusive.—Address, with stamped addressed envelope, M.D., No. 725, THE LANCET Office, 423, Strand, W.C.

For Sale, 8-horse power Argyll Car, 3 speeds and reverse. Two-seater, with spare tonneau. Patent leather hood. Working daily, but steering worm requires renewal. Sell £25, or exchange high-class Microscope.—Address, No. 381, THE LANCET Office, 423, Strand, W.C.

To West-End Doctors.—Motor Driver with own modern Napier Landaulette can arrange for Doctor's round, yearly contracts, &c.—Apply, Alfred, 44, York-road, Waterloo.

Received too Late for Classification.

Essex County Hospital, Colchester. Required, a HOUSE SURGEON, to commence duty in April. Salary £80 per annum, with board, washing, and residence in the Hospital. Medical and Surgical qualifications required.

Applications, with three recent testimonials, to be sent on or before Wednesday, the 30th of March, 1910, to

ALFRED G. BUCK, Secretary.

Essex County Hospital, Colchester. —Required, a HOUSE PHYSICIAN, to commence duty in April. Experienced in Anæsthetics. Salary £80 per annum, with board, washing, and residence in the Hospital. Candidates must be duly qualified and registered. Applications, with copies of three recent testimonials, to be sent on or before Wednesday, the 30th of March, 1910, to ALFRED G. BUCK, Secretary.

Southwark Union, London.—The Guardians invite applications before noon on Monday, the 11th April next, for the appointment of ASSISTANT (Male) MEDICAL OFFICER at their INFIRMARY, East Dulwich-grove, S.E. Salary £100 per annum, with board, lodging, and washing. The emoluments are valued at £80 per annum, and the appointment is subject to the provisions of the Poor-Law Officers' Superannuation Act, 1896. Forms of application will be forwarded on receipt of a stamped directed foolscap envelope. Canvassing prohibited. By order. SYDNEY WOOD, Clerk.

Union Offices, Ufford-street, S.E., March 22nd, 1910.

The National University of Ireland.

DATES OF EXAMINATIONS, &c., 1910.

The Table of Dates of Examinations, &c., 1910, may be obtained on application to

JOSEPH M'GRATH, LL.D., Registrar of the University.

WESTMINSTER HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON),

BROAD SANCTUARY AND CAXTON STREET, S.W.

The Summer Session begins on April 21st.

Special Terms given to Sons of Medical Men.

ENTRANCE SCHOLARSHIPS.

On April 13th and 14th the following Scholarships may be competed for by Students entering in the Summer Session:—

TWO UNIVERSITY SCHOLARSHIPS	£60 each.
TWO IN ARTS	£60 and £40.
TWO IN SCIENCE	£60 and £40.
DENTAL SCHOLARSHIP	£20.

For Prospectus and further particulars, apply to

E. ROCK CARLING, F.R.C.S., Dean.

CLOTH CASES FOR BINDING

THE HALF-YEARLY VOLUMES OF

"THE LANCET"

Can be obtained of any Bookseller in town or country,

Or from THE LANCET Office.

Price 2s. each; by post, 2s. 3d.

Office; 423, Strand, W.C., and 1 & 2, Bedford-street adjoining.

PHOSPHORUS IN FOOD.

Extract from **THE BRITISH MEDICAL JOURNAL,** *Feb. 19, 1910.*

"The importance of administering **phosphorus in a form suitable for assimilation** has long been recognised. **Plasmon,** as is well known, is a preparation of the casein of milk, containing rather over 80 per cent. of pure protein, but **its considerable content of phosphorus in the form of combination in which this exists in milk** is perhaps less generally recognised. **PLASMON COCOA, WHICH YIELDS A BEVERAGE OF MUCH GREATER NUTRITIVE VALUE THAN ORDINARY COCOA, WAS FOUND TO CONTAIN PHOSPHORUS EQUIVALENT TO 2.32% OF P_2O_5.**"

DESCRIPTIVE LITERATURE, REPORTS, AND SAMPLES SUPPLIED GRATIS TO THE MEDICAL PROFESSION.

PLASMON, LTD., 66a, FARRINGDON ST., LONDON, E.C.

TAMAR INDIEN GRILLON.

A laxative, refreshing, and medicated Fruit Lozenge, very agreeable to take, and never causing irritation. Its physiological action assures the immediate relief and effectual cure of

CONSTIPATION

HÆMORRHOIDS, BILE,
HEADACHE,
LOSS OF APPETITE,
INTESTINAL OBSTRUCTIONS.

By augmenting the peristaltic movement of the intestine without producing undue secretion of the liquids. Unlike pills and the usual purgatives, it does not predispose to intestinal sluggishness; and the same dose always produces the same effect—that is to say, never needs increasing.

It is recommended by the most eminent physicians of Paris, notably Drs. BELIN and TARDIEU, who prescribe it constantly for the above complaints, and with the most marked success.

Wholesale—London: E. GRILLON, 67. Southwark Bridge-road, London, S.E.

Sold by all Chemists and Druggists. 2s. 6d. a box, stamp included.

MIST. HEPATICA CONC. (HEWLETT'S)

COMPOSITION.—Ext. Cascaræ, Ext. Rhei, Jalapin, Podophyllin, Cocainæ Hydrochlor., 1-12th gr. in each fluid drachm.

THIS excellent compound, first introduced as a general **aperient** and **cholagogue,** has now become a popular remedy, and attention has very recently been called to the value of the mixture, by various authorities, in that class of cases spoken of as Chronic Biliousness, in Catarrhal Jaundice, and in the Jaundice of simple Hepatic Torpor. The remedial value of the compound depends chiefly upon the power which it possesses in influencing the action of the liver and other glandular organs of the alimentary canal. The remedy would not seem to be indicated in Hepatitis with high fever, so much as in the more chronic form of the affection which ends in enlargement and induration of the organ. **In passive or habitual Congestion of the Liver, so frequently met with, it has been used with marked benefit.** Even in the early stages of cirrhosis, whilst the liver is still enlarged, the compound should be regularly given, as great benefit has been derived from its use.

In the treatment of acute or temporary constipation, frequently met with in the convalescence from acute disease, and in pregnancy, or in the constipation due to sedentary habits, to habitual overwork (especially of the nervous system), to a deficiency of intestinal secretion, and of peristalsis, and a paralytic state of the intestinal muscular fibres, the mixture can be prescribed with wonderful effect, positively curing cases that have resisted other remedies.

The Dose is from 10 to 60 minims, according to the age and condition of the patient. One drachm is a direct aperient, and is not accompanied by griping or tenesmus.

Packed for Dispensing only in 10-oz., 22-oz., 40-oz., and 90-oz. Bottles.

Please write: "Mist. Hepatica Conc. (HEWLETT'S)" to ensure obtaining this Preparation.

☞ Obtainable from all Wholesale Druggists and the leading Dispensing Chemists throughout the United Kingdom, India and the Colonies.

— OR DIRECT FROM —

C. J. HEWLETT & SON, Ltd.,

Wholesale and Export Druggists and Manufacturing Chemists,

35 to 42, CHARLOTTE STREET, LONDON, E.C.

PRINTED and PUBLISHED by the PROPRIETORS, WAKLEY AND SON, LTD., at No. 423, Strand, and Nos. 1 and 2, Bedford-street, adjoining, in the Parish of St. Martin-in-the-Fields, Westminster, in the County of London, and sold by all Booksellers and Newsvenders in Great Britain and Ireland and the Colonies.—Saturday, March 26th, 1910.

UNIVERSITY OF ILLINOIS-URBANA
3 0112 064673095